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Never-Failing Product Introduction:
Commercialization Strategies in Innovative Technology Start-ups
A case study of Green Tech

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ABSTRACT

This paper attempts to outline the essential steps and actions that technological start-up firms need to consider before entering new markets. Drawing specific attention to the Swedish automotive start-up Green Tech, this paper aims to evaluate the opportunities and challenges that will be encountered in the process of commercializing its new innovative vehicle. Building on previous inquiries, the authors provide a staged conceptual framework that attempts to gauge a successful product commercialization strategy. The analysis provides assessments of the firm's internal forces, referred to as the resources and capabilities at its disposal, and the external forces, constituted by the market research findings. These dynamics comprise the core dimensions upon which the overarching entry strategy of Green Tech needs to be laid down. To affirm the validity and functionality of the framework the Italian market has been selected for the external assessment based on mutual agreements between the firm and the authors. Implications for market entry decisions and commercialization strategies are ultimately provided.

Keywords: *Commercialization strategy, Technological start-up, Entry modes.*

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Many Thanks

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1. INTRODUCTION

This chapter is deemed to introduce the purpose of this thesis and provide the reader with an overview of the concerned topic.

A recent study of the emerging electronic vehicle market, Mckinsey (2009), reveals that automakers, battery producers, and providers of utilities and infrastructure are facing a paradigm shift and consequently have to accumulate extensive capabilities in order to prepare for the changing landscape of the automotive industry. Similarly, Brown et al. (2010), argue that the potential of the electronic vehicles will be stunted if not adequate attentions are focused on the uptake of the technology and on the efficiency of the transition, but also in terms of maintaining compatibility between jurisdictions, public safety, and ensuring the environmental sustainability. According to Mckinsey (2009), the naysayers are skeptical about a global breakthrough for electrified vehicles in the coming decade due to several reasons such as high production costs, short driving range and lack of sufficient infrastructure. Contrasting, the concern over energy security, fossil fuel emissions, and long-term industrial competitiveness is argued by the optimistic party to be factors that will prompt governments to seek partial solutions by creating incentives. A combination of subsidies, taxes, and investments to migrate the market to battery-powered vehicles is believed to be a possible solution (Mckinsey, 2009; Christensen et al., 2011).

Supporting the optimistic view, JP Morgan (2009) estimated that by 2020, 11 million electrified vehicles could be sold worldwide, which would amount for 13% of the global passenger market at that point in time. Brown et al. (2010) argues that this change, in short-term, would require incentives for the electric vehicles related to economic motivation and international competitiveness, efforts to mitigate climate change, as well as a push by governments to improve energy security that is argued to be the major catalyst for the electric vehicles. According to Brown et al. (2010) electric vehicles are on the verge of experiencing rapid growth in the imminent decade. However, it is explained that in order for the world to witness a smooth transition, where the zero emission alternatives will be considered a viable transportation option, there will need to be a vast number of changes in the regulatory environments and in the operating practices i.e. governments, companies, and production. This further implies that changes in technologies and infrastructure, e.g. linkage of the electric vehicle with the electrical grid, have to be initiated. This argument is shared with Markel (2010) who argues that to maximize the benefits of the electric vehicle Industry, the emerging infrastructure, from battery manufacturing to communication and control between the vehicle and the grid must provide access to clean electricity, satisfy stakeholder expectations, and ensure safety.

The company

Founded in 2010, Green Tech (pseudonym) is an innovative Swedish technological start-up firm, situated in the outskirts of Gothenburg, which recently engaged its operations in the automotive industry. Although the company is not yet active on the market, substantial commitment has been devoted to the development of a new concept of transportation system. At the current state of operations, Green Tech has developed a prototype of a three-wheeled electric vehicle that displays pioneering and innovative characteristics. Both the design, with a covering roof, protecting both the driver and passengers from precipitations, and the technology, utilizing state-of-the-art sandwich composite as to generate as low battery usage

as possible, are potential competitive features of the new vehicle. The overarching focus of Green Tech is directed towards developing and creating innovative solutions in order to restructure and rethink the nature of automotive vehicles. The underlying idea of Green Tech, in fact, is focused on creating a new submarket in the automotive industry, by inserting itself in-between the two large market segments, represented by the four wheel cars and the two wheel scooters.

Green Tech's environmental activities are backed up by recent studies performed on the automotive industry, which exhibit an auspicious future for this new technological application. In fact, as revealed by Mckinsey (2009), JP Morgan (2009), and Brown et al. (2010), the emerging market of electric vehicles will have significant impact on the current automotive industry, implying that manufacturers, suppliers, and governments, etc. must modernize and adjust their facilities and infrastructure to the emergent technology in the imminent decade. However, this also enables new entrants, such as Green Tech, to reap benefits from this growing need the new technological transportation solutions. Technological start-ups have for a long period of time tried to bring new innovations and alternatives to the conventional combustion engine market, however with moderate success. Nevertheless, as the European markets are slowly moving toward decreasing CO₂ emissions as an attempt to prevent environmental changes, the market for electric vehicles seems to be potentially increasing. Consequently, even though in the nearest future the vast majority of the European car fleet will continue to be dominated by combustion engines, electric vehicles have a great opportunity to start entering niche markets. Along with this line of reasoning, Mckinsey (2009) argues that a feasible short-term option for the electrified vehicles would be constituted by certain niche markets whose economies could be quickly favorable, such as delivery and taxi fleets in large cities or elements of military fleets.

Even though the future scenarios showcase promising possibilities for new entrant firms, there are still numerous challenges and hindrances that companies need to overcome in order to fully integrate this new technology into a saturated industry such as the automotive industry. Not specifically addressing the automotive industry, history taught us that even major players, who owned extremely diversified distribution channels, have struggled in tackling the challenges of commercializing the new innovative solutions (Christensen, 1997). This concept applies also to the automotive industry that has witnessed several attempts to explore the opportunities of the electric revolution. One of the major hurdles in this struggle has, in fact, been the central reason of these failures, namely the vehicles short range. Currently electric cars do not offer sufficient range to be the practical, versatile, every day car that most people want. The fundamental reason of this is due to the fact that they operate on batteries. The recharging time is also another shortcoming of the electric vehicle, which takes several hours as opposed to the few minutes for filling a tank with gasoline. Thereby, although the zero-emission automotive solutions are a reality in the future potential market (Christensen et al., 2011), organizations have not yet found a possible method to commercialize them in order for the customers to deem this new technology as a substitute solution for the combustion engine vehicles. For the time being, electric solutions are not seen as potential competitors to the conventional vehicles but are deemed a greener low-performing alternative (Mckinsey, 2009). Predominantly, organizations have seen their products fail because they committed the error of comparing the two alternatives. Although, shapes, functions and purposes are the same, the electric vehicle is a different product from the one powered by conventional fuel due to the fact that the performances are exceedingly unequal. It is thereby necessary for start-up firms to craft an as tailored commercialization strategy as possible in order to maximize the likelihood of success when introducing a product on the market that has yet to find its grounded and definitive application (Cooper & Kleinschmidt, 1987). Up until the moment

when the performance of the electric technology is comparable to the that of combustion engines, it is necessary for newcomers, such as Green Tech, to sift out market alternatives and niches where the electric vehicles could find relevant applications and new market opportunities. Hence, either this new technology will be able to fulfill customer's needs in a way that the conventional vehicles are not able to or it will be able to fulfill new needs of which customers are unaware. Thereby, a well thought-out commercialization strategy must be thoroughly laid out in order for Green Tech to be able to create a value proposition approach that differs from both the one of the conventional scooters' and the one of the conventional cars'. The novelty of innovation, in fact, does not necessarily reside in what the product offers, but primarily in the way that the product meets customers' expectations or trigger new ones (Christensen, 1997).

Prior inquiries on product introduction, such as Christensen's (1997), regarding not only the automotive industry, could be used as lessons for upcoming players, such as Green Tech, enabling them to learn from others previous experiences in order to avoid committing the same managerial mistakes. Commercialization strategies for innovations are far from being fully scrutinized due to the fact that they are product and industry dependent (Booz-Allen & Hamilton, 1982). However the successfulness of a new innovative solution, such as electric vehicles, can be rendered more likely if contingencies related to the industry, product, customers, and competitors are factored into the overarching strategic model of organizations (Cooper and Kleinschmidt, 1987). This can primarily be deemed as factual for start-up firms where resources are not copious and the importance to target the right market in the right way from the beginning is a crucial factor for their potential success (Cooper and Kleinschmidt, 1986).

Problem definition

Green Tech is a Swedish company that falls into the category of the start-up. The firm has started its operations with the final vision of bringing a new electric vehicle to the automotive market and creating a new alternative for customers on the road. To date, Green Tech has developed a prototype of the three-wheeled vehicle that subsequently will be commercialized on European market. Currently the vehicle is still in its primordial phase. Thus in addition to technical issues that will be dealt with internally by the firm, the overarching problem that this paper aims to address is to define possible approaches that Green Tech should take when it comes to commercializing the vehicle. The main problem resides in the fact that the start-up has not yet offered a conceivable strategy through which the likelihood of default is reduced. Additionally it is yet to be found out what type of approach will more likely allow the firm to impose its product on the market while at the same time being able to avoid the fierce competition coming from incumbents in the industry.

In simpler terms, the company has, for the time being, developed a product; however the underlying strategy upon which all the operations should be based is not yet thoroughly defined. Even though the CEO of Green Tech and the management team have pointed out some ideas regarding what and where to compete on, all the facets of the commercialization strategy that, according to theory, should be taken into consideration in order to limit the possibility of default, have not yet been dealt with as meticulously as literature would require. Thereby the ultimate purpose of this master thesis will then be focused on addressing the various aspects of the commercialization strategy that Green Tech should consider when it comes to the decision making process concerning new product introductions.

Research focus

Along with the overall nature of the vehicle and the underlying strategic directions that Green Tech has so far undertaken, numerous possible markets have been identified by the Swedish start-up. Predominantly, the markets that are deemed attractive for the commercializing operations of the product have been divided on a country basis. Although the new electric vehicle is produced in Sweden, because of its specific characteristics and its association with scooters rather than cars, southern European countries have been detected to be more adequate markets for this product. Thus, in accordance with the ideas and beliefs commonly shared within the company, the Italian market has been chosen by the authors because of its acceptance of scooters, its geographical location and its climate. All conditions which are considerably favorable for Green Tech's vehicle.

The overarching outline of this paper is constituted predominantly by the utilization of the ten success factors, correlated to new product introduction, that have been delineated by Cooper and Kleinschmidt (1987), comprising the foundations of this inquiry. These, in accordance with additional theoretical findings (Chandler & hawk, 2002; Cavusgil & Zou, 1994), entail the evaluation of two main forces upon which commercialization strategies are contingent. Thereby, in order to assess the success of the product under inquiry, a market research concerning the Italian automotive industry and an internal assessment of Green Tech's resources and capabilities are performed. The market assessment is performed by following the guidelines as displayed in the framework for export market research by Cavusgil (1985) which entails the subsequent three-staged process: (1) Preliminary screening, (2) Analysis of industry market potential, and (3) Analysis of company sales potential. Since the outcome of this inquiry will expectantly be utilizable by Green Tech for delineating the overall strategy in order to maximize its probability of success, the overall purpose of this paper is to provide the company with a complete analysis of the success factors as they apply to the firm and the market research. Thereby data regarding internal capabilities and market assessment will be retrieved in order to draw conclusions and provide recommendations for the Swedish start-up on what type of commercialization strategy to undertake. Finally, entry modes and internationalization strategies, as related to the Italian market, will also be part of the paper (Root, 1998).

1.1. Research question

Based on the findings from previous inquiries it is obvious that Green Tech is faced with a challenging future due to the nature of the industry and to the competitors. Several forces will have significant dependence on the success or failure of Green Tech's electric vehicle. Thus the company's performance is not utterly contingent on the product characteristics but it is predominantly subject to its commercialization activities, which are contingent on both internal and external forces. Therefore, the aim of this research is focused on developing a conceptual framework that Green Tech can rely on for the process of bringing its new innovative product onto new markets. Since the main objectives of this master thesis are directed towards providing Green Tech with advisable recommendations for its foreseeable commercialization strategy on the Italian market, the overall paper will be guided by the following research question, which has been broken down into an additional sub-question for facilitating both the readers and the authors' undertakings.

How can Green Tech delineate a successful commercialization strategy appropriate for the Italian market?

- Identify the factors influencing commercialization strategies for new product innovations.

1.2. Thesis disposition

The paper consists of six chapters structured in the following sequential order.

1. *Introduction*
2. *Theoretical overview*
3. *Research methodology*
4. *Empirical findings*
5. *Analysis*
6. *Conclusion*

The introduction is deemed to introduce the reader to the purpose of the thesis, which is focused on providing recommendations on how Green Tech can delineate a successful commercialization strategy appropriate for the Italian market. The conditions of the environment and the need for a transition in the automotive industry towards greener alternative vehicles are additionally illustrated.

Subsequently the theoretical overview elaborates on relevant literature with respect to the research purpose. Ten new product success factors are decided as the foundation of the thesis. A conceptual framework is proposed, based on the theoretical findings.

A research methodology appropriate for the chosen research purpose is further established.

The empirical findings are performed in congruence with the conceptual framework, comprising an internal, resource and capabilities assessment of Green Tech, followed by an external market research of Italy.

The analysis is performed in correspondence with the ten factors discussed in the theoretical overview and the findings from the empirical data collection.

Finally we discuss the applicability of our conceptual framework and summarize the findings from our research by providing recommendations for commercialization strategy adoption and entry mode selection for Green Tech.

2. THEORETICAL OVERVIEW

This chapter discusses previous findings and elaborates on prior studies. The underlying is to provide the reader with a robust knowledge of the theoretical foundation of the paper.

Prior inquiries have examined the importance for firms to develop robust strategies for commercialization in order to be successful in bringing new product innovations from an idea stage to a market realization (Cooper & Kleinschmidt, 1986, 1987; Cavusgil & Zou, 1994; Cavusgil, 1995, Chandler & Hawks, 2002). In their study Gans and Stern (2003) acknowledge that, as the previous decades have witnessed a dramatic increase of investments in technology entrepreneurship, there are sufficient needs to address the challenges faced by small technological start-up firms when translating their promising new technology innovations into economic return for their main shareholders. As the market is rapidly changing there is a growing interest in the factors that affect the assessment of successful strategies for commercialization in these firms, but also in the barriers that could mitigate the commercialization process. This paper seeks to address these factors in specific relation to the Swedish technological start-up firm Green Tech. However, as prior research indicates, the process of taking an idea to a commercial success is faced with numerous hurdles and obstacles. These, if not efficiently dealt with, could cause severe problems for the continuing progress on the trajectory towards a market realization. Furthermore the literature review reveals that technological start-up firms, often, have an international outlook from inception. Bell (2003) argues that smaller entrepreneurial firms tend to adopt a global focus from the outset and embark a rapid and dedicated internationalization vision. This has further implications for the commercialization of new product innovations, as it infers that companies view the global market as their competitive landscape. However their scarce resource base implies that these firms ought to find new and creative ways to approach foreign markets, given their available resources and capabilities. As for the majority of technological start-up firms, Green Tech is also targeting international markets, which raises the importance of considering the possible implications that this will bring to their commercialization strategy. For this reason, simply determining the success factors would not give a justified overview of the path from idea to market. Hence this paper considers, not just the success factors, but how they are contingent on the internal as well as external attributes of the company and its context. Several authors argue that one of the main aspects to consider for young technological firms is the external market characteristics. Understanding the competitive landscape of the market is seen as one of the primary factors for successful product implementation (Chandler and Hawks, 2002). Since Green Tech has an international outlook, sufficient attention will be paid to the assessment of an extensive market research that will constitute a main pillar of this paper.

Inquiries on strategy for commercialization appear to be closely connected to the research on foreign market entry and internationalization strategies. Hence, it is relevant to shed light on previous research on foreign market modes of entry as they are strongly related to the commercialization strategy. Consequently this theory will have implications for the recommendations that will be provided to Green Tech. Furthermore the examined literature argue that the strategy assessment is contingent on the individual characteristics of the product innovation, entailing that, depending on whether the innovation is disruptive or sustainable, the strategy for how firms decide to commercialize the products will look different. For this reason an explanation of the various attributes that characterize the two types of innovations will be discussed (Christensen, 1997).

As argued, several factors have significant influence on the strategy assessment. The following section of the theoretical overview will further penetrate each of these areas of interest, in order to provide the reader with a robust theoretical background of their specific importance. The chapter is therefore divided into five sections:

- **Factors determining successful product introduction:** This portion aims to define the factors that are correlated with new product success. Subsequent sections are assessed on the basis of the success factors discussed in this paragraph.
- **Market research:** The objective of this paragraph is to provide a solid guideline for the process of assessing the characteristics of a given market.
- **Commercialization strategies:** The focus of this paragraph is to discuss the overarching concept of commercialization strategies.
- **Innovation characteristics:** The primary focus of this section is to define the different forms of innovation and the implications that these may have on the overall commercialization strategy of the firm.
- **Entry strategies:** The focus of the section is based on the factors that determine the choice of entry decision.

Finally, a conceptual framework for the complete assessment, from idea generation process to market launch, will be provided in order to successfully delineate a competitive strategy for commercialization of a new product innovation at Green Tech. The main findings from the above mention factors are linked and merged together so as to offer the sequential process in order to capture all the essential aspects of strategy adoption. The main pillars of the conceptual framework are the internal forces, contingent on the resource-based capabilities of Green Tech and the external forces, where the market research is the essential building block.

2.1. Factors determining successful product introduction

A pertinent framework that presents implications for new product introduction, such as Green Tech's vehicle, has been laid out by Cooper and Kleinschmidt (1987). The overall process of their inquiry was based on testing ten different hypotheses regarding dissimilar factors and dynamics that are supposed to be taken into careful consideration by organizations when commercializing new products. Particularly, the overarching purpose of the paper was focused on indentifying discrepancies and similarities amongst new product introduction strategies in order to sift out common aspects belonging to successes as opposed to those factors instead that can be associated with failures. By running multiple regression models Cooper and Kleinschmidt (1987) found a positive correlation with success for all the following hypothesized success factors, defined in Table 1. In order to decrease the probability of failure and, by default, increase the likelihood of success, a thorough investigation of the correspondences between these dynamics and the company's strategy should be conducted.

Table 1

Factors determining successful new product introduction		
<i>Factor</i>	<i>Description</i>	<i>Specific success elements</i>
Product advantage	The design and attributes are deemed to lead the strategy for a successful outcome. This entails the ability to match the customers' needs. Cooper (1984) argues that the advantage of a product resides in the superiority of quality, the driver for profitability. Cooper and Kleinschmidt (1986) states that design is a strategic feature for product success, whereas Bennett and Cooper (1984) argue that the advantage of a product is related to the value proposition concept, expressed as cost/benefit.	<ul style="list-style-type: none"> • Offered unique benefit to the customer • Higher quality than competitive products • Reduce customer cost • Innovative • Superior to competitive products in the eyes of the customer • Solved a problem that the customer had with competitive products
Market potential	Factors such as market size, growth rate and market need level are factors that contribute to success. Additionally, market characteristics and market attractiveness are important dimensions that to assist the resource allocation process for the development of new businesses and products (Abell & Hammond, 1979).	<ul style="list-style-type: none"> • Market size • Market growth • Customer need level for product type • Importance of the product to the customer
Market competitiveness	Maidique and Zirger (1983) argue that this is negatively correlated with the likelihood of a new product success, therefore the higher the market competitiveness the lower the probability of success for new product. Recently, it has been proven that the superiority of quality and innovation over competitors' products is more important than the actual competitors. However, Aaker (2007) argues that in order to assess the competition in a market three levels have to be evaluated: direct competitors, indirect competitors and tertiary competitors.	<ul style="list-style-type: none"> • Intensity of competition • Degree of price competition • Strength and quality of competitors' products • Competitiveness of competitors' price • Strength of competitors sales force/distribution system • Strength of competitors service
Marketing synergy	A good fit between the marketing, sales force, and distribution needs of the product and the firm's marketing resources and skills can improve the possibility of success of a new product (Cooper & Kleinschmidt, 1986).	<p>Good fit between needs of product and:</p> <ul style="list-style-type: none"> • The sales force/distribution system of the firm • The firms advertising and promotional resources and skills • The firm's marketing resources and skills • The firm's customer resources and skills • The firm's management skills and resources
Technological synergy	A good fit between the external opportunities and the technological resources increases the likelihood of new product success (Cooper & Kleinschmidt, 1987). According to Peters and Waterman (1982) an overall synergy between management team, market opportunities and resources is found to be an important determinant for success.	<p>Good fit between needs of product and:</p> <ul style="list-style-type: none"> • The firm's R&D or product development Skills and resources • The firm's engineering skills and resources • The firm's production resources and skills
Protocol	Protocol is defined as the layout of the project or product strategy prior to the product or project development. It has a positive correlation with the successful commercialization of the product.	<p>Prior to product development:</p> <ul style="list-style-type: none"> • Target maker well defined • Customer need and preferences well defined • Product concept well defined • Product specification and requirements well defined
Proficiency of predevelopment activities	Displayed as the activities that precede the production development phase, these are deemed as the key factors of success (Booz-Allen & Hamilton, 1980). Entails up-front activities such as project evaluation, market studies, defining the market needs, etc. (Cooper, 1980; 1979).	<ul style="list-style-type: none"> • Initial screening • Preliminary market assessment • Preliminary technical assessment • Detailed market research • Business or financial analysis
Proficiency of market-related activities	All actions that are related to market survey, market potential, promotion and advertizing should take a predominant part of time before the commercialization strategy is outlined (Cooper & Kleinschmidt, 1987).	<ul style="list-style-type: none"> • Preliminary market assessment • Detailed market research • Customer test of prototype • Trial sell/test market • Market launch
Proficiency of technological activities	This factor highlights the management of R&D phase, product development process, and the production <i>per se</i> (Cooper & Kleinschmidt, 1987).	<ul style="list-style-type: none"> • Preliminary technical assessment • Product development • In-house testing • Trial/pilot production • Production start-up
Top management support	There is a higher likelihood of success when the top management team supported the product from the development stage throughout the launch process.	<ul style="list-style-type: none"> • Commitment to the project • Involvement in the day-to-day management of project • Guidance/directive for the project

Although all the factors above have been proven to be associated with product success, top management support did not present any positive correlation. As it has been delineated by Cooper and Kleinschmidt (1987) the company's operations must be aligned and correlated with the market's dynamics. The above factors present managerial implications for commercialization activities. In order to increase the successfulness of a new product introduction then, the above factors would represent the drivers for the managerial decision making process. Hence, the factors will be broken down as to assess how theory relates to each one of them.

A step forward in the studies of the factors, categorized as the determinants of success for new start-ups, has been made by Chandler and Hanks (2002), who state that the performance of new start-up ventures is directly related to both market attractiveness and resource-based capabilities. By conducting a study of 155 different companies the authors also established a positive correlation between specific resource-based capabilities and competitive strategies chosen by a firm. Ultimately, the fit between strategies and resource-based capabilities has been proven to be related to venture performance. Furthermore it has been found out that the performance of the emerging manufacturing ventures appears to be enhanced when resource-based capabilities are supportive of a cost leadership strategy or when firms seeking to differentiate based on product and service quality have the resource-based capabilities to support that strategy. Numerous implications can be derived from the above statements. It has, in fact, been proven that when start-ups are to lay out their commercialization and more in particular marketing strategy, they have to take into account that the above three elements are positively correlated with each other. This generates remarkable repercussions to the strategic outcomes that this paper aims to address.

As argued by Chandler and Hawks (2002) market attractiveness and resource-based capabilities play a key role in the overall performance capacity of an organization. As the framework showcases, both the opportunities and resources are equally influenced by the external environment and the founders of the start-up. These will then bring about consequences into the strategy of the new venture that, by default, will impinge on the final performance of the enterprise. Although the two above theories by Chandler and Hawks (2002) and Cooper and Kleinschmidt (1987) may appear dissimilar, they both deal with the same core topic. While Cooper and Kleinschmidt (1987) list the factors that are directly related to product success, Chandler and Hawks (2002) take a broader perspective on this matter by pointing out the two main pillars upon which a successful commercialization strategy should be based. These two theoretical approaches bring about numerous implications for the underlying foundations upon which Green Tech's strategy should be established. A common thread that is worth mentioning is how both models acknowledge the significance of the external and internal forces assessments. Along with the findings by the above mentioned articles, an explanation of what constitutes the internal and external assessment is provided below. These mainstays, referred to by the literature as attractiveness of the market and resource-based capabilities, comprise the two focal dynamics from which the overarching commercialization strategy of Green Tech will be encouraged.

2.1.1. Attractiveness of the market

Many authors have provided definition and theoretical framework concerning the favorability of a market. According to Timmons (1990) opportunities arise in the market when there are "changing circumstances, chaos, confusion, inconsistencies, lags or leads, knowledge and information gaps, and a variety of other vacuums in an industry or market". Along that line of reasoning Porter (1980) noted that the most attractive opportunities for start-ups to enter a new market are industries in disequilibrium (such as new rising industries or businesses where

the information is poorly diffused), and where the reprisal by incumbent firms is expected to be slow or inefficient. Many considerations regarding the most favorable conditions of the market have been drawn by authors, however an appraisal of the market's characteristics needs to be carried out in order to sift out the opportunities and challenges that start-ups on the verge of entering an industry may encounter (Chandler and Hawks, 2002). The market assessment entails primarily a market research corroborated by focus group sessions and customers' feedbacks as related to the characteristics of the product and the firm. A measurement of the attractiveness of the market can be executed through weighing the different factors of the market that managers deemed as the most important for evaluating the potentials of a specific product or company. A framework that enables decision makers to select foreign markets in the early stages of the operation is proposed by Cavusgil et al. (2003) who argue that national markets differ in terms of market attractiveness, due to variations in the economic and commercial environment, growth rates, political stability, consumption capacity, receptiveness to foreign products, and additional factors. The model is a technique used by managers who wish to aggregate all the different factors that should, in their opinion, be taken into consideration when evaluating the market potential for a specific product (Cavusgil et al., 2003). The outcome that derives from the model is an index of the attractiveness of the market under inquiry. The dimensions that are included can easily be constructed from industry or product-specific data. Managers also can adjust the weights of the dimensions according to the requirements of their product or industry. The final result of this model is ultimately processed in the following formula in order to express the attractiveness of the market on a scale from 1 to 100, which can also be easily compared with the other countries' ratings:

$$X'_{ij} = \left[\frac{X_{ij} - \min_i}{R_i} (99) \right] + 1^1$$

2.1.2. Resource-based capabilities

The capabilities deriving from the resources are the new dimension that has been introduced with the work by Chandler and Hanks (2002). Although this topic has been touched upon by numerous authors, the researchers created a framework that relates, on a more macro perspective, the different dynamics that start-ups have to take into account when delineating commercialization strategies. The two authors then made use of the already grounded theory of resource-based view by Wernerfelt (1984) for demonstrating that these have to be linked in a triangle of relationships with the strategic approach, the management team and the market opportunities in order to augment the likelihood of successfulness of an organization.

A distinction between resources and capabilities is then necessary in order to point out the relations between these two dynamics. Resources are basic inputs into the production process. Firm-specific resources include items of capital equipment, assets, skills of individual employees, patents, brand names, finance, etc. that are at the disposal of a specific organizations. If taken on their own, few resources can be deemed productive, thereby productive activities entail a coordination of groups of resources. Capabilities can then be defined as the capacity for a coordinated set of resources to execute activities (Chandler & Hanks, 2002). Consequently, resources can be identified as the sources of an organization's capabilities whilst capabilities can be described as the main sources of the firm's competitive advantage (Grant, 1991). It has been proven that in situations when resources are copious, the likelihood for firms to survive, to have a rapid growth and to have a higher profitability of

¹ X_{ij} is the average score of country j on dimension i; X'_{ij} is the scaled final value of country j for the dimension i; \min_i is the minimum value for dimension i; and R_i is the range of dimension i.

success is notably increased (Beard & Dess 1988; Singh et al., 1986). Although the above statement seems to be quite obvious it has numerous implications for the delineation of a firm's strategy in the start-up phase. Resources, in fact, can be bought, developed or outsourced. However decisions about these diverging strategic approaches have to be made in the primordial stage of a company in order to fully exploit the capabilities deriving from the resources (Chandler & Hanks, 2002). Thus resources, and especially the capability of the management team to coordinate them, are considered the building blocks upon which a new start-up should define its commercialization strategy (Castrogiovanni, 1991). Particularly, strategic and tactical decisions, regarding the factors that a company ought to compete on, should be related to specific resources (Osborn & Hunt, 1974).

According to Porter (1980), companies seeking to obtain a competitive advantage through cost leadership should continuously be able to have accessibility to low-cost labor, low cost material, low cost distribution systems and the ability to preserve tight cost controls. Companies that instead are seeking to achieve a competitive advantage through quality superiority would need advanced capabilities in product research, product engineering and technical skills (Porter, 1980). High quality also entails a close and well-grounded customer support. If new ventures want to differentiate themselves from competitors on a quality basis, a strong customer service that goes hand in hand with high quality products has to be implemented (Szpekman, 1992). The higher the quality of the product, the higher the customers' expectations, and by default the higher the knowledge of the employees involved in the customer service.

If the basis of competition for start-ups is instead focused on product innovation companies may have better possibilities for success when they are positioned in turbulent and rapidly changing industries. Highly creative employees should also be corroborated by a relentless customer focus in order to keep contact with users and rely constantly on their feedbacks and preferences. This process allows bringing about adjustments and improvements on the final product that eventually enables companies to stay ahead of the competitors (Bentley 1990).

Even though resources and capabilities are the building blocks of a firm's competitive advantage, alone, they are not sufficient to achieve a superior performance (Chandler & Hanks, 2002). Thus it has been proven that firms are more likely to attain a competitive advantage over their competitors not due to the unique resources that they possess, but primarily, because of the firms' distinctive abilities to make better use of the resources at their disposal (Mahoney & Pandian, 1992).

2.2. Market research

As Cooper and Kleinschmidt (1987) argue, a predominant part of the success is dependent on the up-front activities. Primarily an assessment of the market potential as related to the specific product has to be performed in order to increase the likelihood of successful market introduction. Thereby a market research plays an essential role in the delineation of a commercialization strategy.

Start-up firms have become more international as the global business environment has been transformed by improvements in technology, changes in the political environment, trade liberalization, and the growth of bilateral and multilateral trade agreements (Brouthers & Nakos, 2005). Alon (2004) argues that start-ups tend to have fewer resources and are therefore less dynamic in their choice of appropriate export country. The country selection process is therefore essential to the success of the internationalization process of firms. The ability to carefully choose where to expand their efforts and limited resources is an essential part of this selection. Furthermore, Wood and Robertson (1999) argue that international

business decision makers, representing different industries, evaluating different markets, and favoring different means of foreign market entry, should value certain types of information differently depending on the specific perceived impact.

Many companies enter new markets based on intuition. Personal relationships and social factors appear to have increasingly significant impact on the choice of foreign market to target as well as the choice of entry mode. Papadopoulos (1988) argues that firms often ignore market research and base their international market selection choices on non-systematic procedures. Ellis (2000) supports this reasoning by noting that several studies indicate that entry decisions are often made on non-rational reasons. In contrast, Cavusgil (1985) explains that determining a target market and a strategy for commercializing a product should be based on systematic market research in order for managers to make profound export decisions. According to Cavusgil (1985), market research involves applying logic and objectivity to the systematic design, collection, analysis, and reporting of data findings. The information gained from the research helps reduce uncertainty, pinpoint solutions, and determine appropriate market strategies. It is essential that any decision on promotion adaptation is based on a sound analysis of costs, benefits, and competitive market considerations (Cavusgil & Zou, 1994). In their research on foreign market selection in relation to export performance, Brothens and Nakos (2005) found that the more systematic a firm's international market selection was, the better it performed. They argue that the use of a systematic methodology, when selecting foreign export markets, plays an important role in export success.

Based on this line of reasoning it is argued that the best suited process for deciding the export market strategy is to use a systematic design in order to cover as many aspects as possible in an attempt to make solid estimates of the market potential and the preferable mode of entry (Cavusgil, 1985). Therefore, the framework for export market research, provided by Cavusgil (1985), is utilized in order to systematically assess the Italian automotive industry. The model offers a three-staged process i.e. (1) Preliminary screening, (2) Analysis of industry market potential, and (3) Analysis of company sales potential, which progressively enables the authors towards an in-depth market research. Cavusgil (1985) argue that the first stage of the sequential process is to select the more attractive countries that the company wants to investigate.

Table 2

Stage one – Preliminary screening	
<p>1. Demographic/Physical environment</p> <ul style="list-style-type: none"> • Population size, growth, density • Urban and rural distribution • Climate and weather variations • Shipping distance • Product-significant demographics • Physical distribution and communication network • Natural resources 	<p>2. Political environment</p> <ul style="list-style-type: none"> • System of government • Political stability and continuity • Ideological orientation • Government involvement in business • Government involvement in communications • Attitudes toward foreign business (trade restrictions, tariffs, nontariff barriers, bilateral trade agreements) • National economic and developmental priorities
<p>3. Economic environment</p> <ul style="list-style-type: none"> • Overall level of development • Economic growth: GNP, industrial sector • Role of foreign trade in the economy • Currency: inflation rate, availability, controls, stability of exchange rate • Balance of payments • Per capita income and distribution • Disposable income and expenditure patterns 	<p>4. Social/Cultural environment</p> <ul style="list-style-type: none"> • Literacy rate, educational level • Existence of middle class • Similarities and differences in relation to home market • Language and other considerations

When the predetermined countries have been investigated, the research enters into the second phase. At this stage, the company will want to determine the present and future aggregate demand for the industry within the selected market (Cavusgil, 1985).

Table 3

Stage two – Analysis on industry market potential	
1. Market Access <ul style="list-style-type: none"> • Limitations on trade: tariff levels, quotas • Documentation and import regulations • Local standards, practices, and other nontariff barriers • Patents and trademarks • Preferential treaties • Legal considerations: investment, taxation, repatriation, employment, code of laws 	2. Product potential <ul style="list-style-type: none"> • Customer needs and desires • Local production, imports, consumption • Exposure to and acceptance of product • Availability of linking products • Industry-specific key indicators of demand • Attitudes toward products of foreign origin • Competitive offerings
3. Local Distribution and Production <ul style="list-style-type: none"> • Availability of intermediaries • Regional and local transportation facilities • Availability of manpower • Conditions for local manufacture 	

The final stage of the market research framework implies the assessment of the company's sales potential as related to the selected target country.

Table 4

Stage three – Analysis of company sales potential	
1. Sales Volume Forecasting <ul style="list-style-type: none"> • Size and concentration of customer segments • Projected consumption statistics • Competitive pressures • Expectations of local distributors/ agents 	2. Landed Cost <ul style="list-style-type: none"> • Costing method for exports • Domestic distribution costs • International freight and insurance • Cost of product modification
3. Cost of Internal Distribution <ul style="list-style-type: none"> • Tariffs and duties • Value added tax • Local packaging and assembly • Margins/commission allowed for the trade • Local distribution and inventory costs • Promotional expenditures 	4. Other Determinants of Profitability <ul style="list-style-type: none"> • Going price levels • Competitive strengths and weaknesses • Credit practices • Current and projected exchange rates

Based on the findings from the market research framework it is argued by the authors that a large base of country specific information is planned to be retrieved. Managerial implications, when considering strategies for commercialization, will be drawn upon the retrieved data. The intention with this framework is partially to recommend a suitable market research assessment tool for start-up companies in the process of expanding its operations to foreign markets.

2.3. Commercialization strategies

According to Gans and Stern (2003) commercialization strategies for start-up innovators often present a trade-off between establishing a novel value chain and competing against established firms versus leveraging an existing value chain. Thereby, commercialization activities can be associated to the overarching strategic approach of a firm in order to capitalize its investments. This argument is also supported by the success factors as displayed by Cooper and Kleinschmidt (1987) who exhibit how the success of a company is contingently related to both product development process and strategic approach of an organization. The assessment of the ten factors would, thereby, result in managerial considerations concerning the overall commercialization process, from idea generation to market launch. Although the theory proposed by the two authors presents managerial implications for the overarching strategy of the company, other considerations regarding the commercialization strategies from a broader standpoint need to be considered. Thus, as inquiries by subsequent scholars have taken different viewpoints, this paper intends to shed light on the different approaches and discuss opportunities and possible drawbacks that different commercialization strategies entail. Primarily, this section will be focused on the main factors that drive the firm's behavior.

Gans and Stern (2003) argue that effective commercialization differ between industrial sectors. Some firms employ commercialization strategies that imply entering directly into markets, whereas others secure extraordinary returns by integrating into an existing value chain, often involving intimate cooperation with established industry players. There appears to be consensus among prior inquiries that there are significant differences between commercialization of disruptive and sustainable innovations (Kassicieh et al., 2002; Mosey, 2005; Slater & Mohr, 2006).

Building on a framework where strategy is linked to the commercialization environment, emphasizing the "market for ideas" Gans and Stern (2003) assess the reasons to why some companies decide to compete against the incumbents, whereas others cooperate with established firms and supplement the existing value proposition. The commercialization environment is explained to be dependent on two critical components i.e. the nature of the appropriability, and the complementary assets. According to Teece (1986) a regime of appropriability refers to the environmental factors, excluding firm and market structure, that govern an innovator's ability to capture the profits generated by an innovation. An appropriability regime can either be "tight" or "weak". The former indicate that the technology is relatively easy to protect, whereas the latter indicate that technology is almost impossible to protect. Teece (1986) further argues that in most of the cases, the successful commercialization of an innovation requires that the know-how held by the firm is utilized in conjunction with other capabilities or assets such as manufacturing, marketing, pre and after-sale support etc.

Gans and Stern (2003) argue that "the market for ideas", referring to the intellectual property environment, is a crucial factor in shaping the commercialization strategy and the industrial dynamics. The product market is, according to Gans and Stern (2003), in contrast to "the market for ideas" as it requires the firm to develop a set of key capabilities and acquire complementary assets to ensure that the innovation offers value to the customers.

When entering a market independently the firm must also be prepared for the competitive strategy of the incumbents, including competitive pricing and the possibility of imitation. Several difficulties arise as a firm enters the product market. Most of the start-up firms must invest substantial resources in building up distribution channels and persuade customers of

their novel value proposition simultaneously as they strive to avoid the aggressive response from the incumbents. When a firm enters “the market for ideas” there exists a continuum where, on one hand, the start-up firm may license its intellectual property, whilst on the other hand the start-up can be acquired by an incumbent firm (Gans & Stern, 2003).

2.4. Innovation characteristics

As Cooper and Kleinschmidt (1997) testify, when analyzing small start-ups engaged in innovative technologies a distinction between the different forms of innovation is worth delineating in order to, firstly, define the degree of innovation that firms are dealing with, and secondly, in order to assess what type of strategy is more appropriate.

As the literature states, innovation can be broken down into two diverse forms, i.e. sustainable or disruptive. A distinction between commercialization strategies for disruptive and sustainable innovation is outlined in the work by Kassicieh et al. (2002). Disruptive innovation has been defined as a scientific discovery that breaks through the conventional product or technology capabilities and bestows the bases for a new, unconventional paradigm (Bower & Christensen, 1995). Walsh and Linton (2000) argue that disruptive innovations bring a discontinuity in the usual R&D improvements by enhancing exponentially the value proposition capabilities from a customer standpoint. These new technologies do not present a grounded path or track record, nor do they get straightforwardly accepted by larger organizations, due to the reluctance of familiarizing with the new technology. Thereby firms are required to take on novel approaches when it comes to commercialization strategies (Kassicieh et al., 2002).

Slather and Mohr (2006) distinguish commercialization of disruptive innovations from sustainable and argue that to successfully commercialize disruptive innovations a firm needs to reach out to more than just a niche market of early adopters. These firms must develop distribution systems that can reach out to the mainstream market. Whether or not these industry newcomers are able to successfully establish themselves in any industry depends critically on their ability to enhance their resources and capabilities to serve mainstream customers (Slather & Mohr, 2006). This finding is shared with Mosey (2005) who argues that start-up firms can compete with large industry incumbents by developing “new-to-market” products, similar to disruptive innovations. That this implies that the firm ought to empower cross-functional teams to form an increasing number of development partnerships and thereby learn how to identify the unmet needs, gather market and technical knowledge, and manage developments to meet those needs (Mosey, 2005). However, as these findings appear to be context specific, each firm needs to find its own way of entry into each potential new market (Mosey, 2005).

A numerical appraisal for measuring whether a new technology can be considered disruptive is provided by Rice et al. (1998) who analyzed several new products that were claimed to be radical new invention by the organizations that developed them. In their studies the authors came to the conclusion that a disruptive innovation required the following characteristics:

- At least presenting a five to ten times improvement in performance as compared to existing products in the market
- 30% to 50% reduction in costs
- And, or a completely novel performance on the market

As opposed to disruptive, sustainable innovation can be deemed as the more conventional and accepted way of creating novel technologies. Sustainable innovations are characterized by a more regular market-focused process, thus they are applied to tangible and already proven

customers' problems. It is then the market that drives the requirements of the innovation as opposed to disruptive technology where the innovation drives the market needs (Walsh & Kirchhoff, 2000). Therefore, sustaining technologies are planned in accordance to the technological path and have the purpose to add value to an existing and established value chain (Walsh & Kirchhoff, 2002). Along with this line of reasoning, it can subsequently be stated that commercialization strategies are primarily contingent on the R&D technological outcomes. As a result, when firms are dealing with sustainable innovations the key approach has to be market focused. The sustainable technology inevitably suffers influence from the external environment and it has to be market-driven. Thus, it has to be aligned with the customers' preferences and it should add onto a value proposition process that previous or existing technologies have already created. On the other hand the value chain of discontinuous innovations is not yet written in stone. The value proposition process is not identified and therefore they require a strategy that does not focus on the market but on the contrary, aims to create a new one from scratch (Prahalad & Hamel, 1994).

In the studies by Kassicieh et al. (2002) the authors demonstrated how firms embark on diverging strategies depending on their size and their type of innovation approach. Conclusions have been drawn based upon four different variables, i.e. Product realization, revenue generation, research support and market potential, in order to show what dynamics the firms' value most when it comes to the commercializing new technologies. Herein it has been proven that substantial differences are present between firms pursuing disruptive innovation and those pursuing incremental, and moreover between small and large firms pursuing the same form of innovation. It has, in fact, been shown that sustaining technological firms valued revenue generation and market potentials more importantly than disruptive technologies firms. Commercialization strategies were then based primarily on how their sustainable products can be adapted and tweaked in order to match and fulfill the existing market needs. Consequently a maximization of the revenue harvest was obtained, referred to as market-pull products. Firms that instead placed their emphasis on disruptive innovation development were more interested in the technology per se, leaving the financial aspect and the market potentials aside for at least the beginning of the commercialization. This has been found to be caused by the underlying nature of the new technology, which had yet to find a dimension. Market potentials are then secondary elements for disruptive innovation due to the fact that it is the technological innovation itself that has to create a new market and seemingly take advantage of the revenue potentials by that created, referred to as market-push products.

Based on the prior reasoning from previous inquiries it is concluded that, when it comes to commercialization strategies, large and small firms engaged in sustainable technology behave similarly due to their market orientation. Small firms in sustaining and disruptive innovation differ primarily on the importance of market potentials. Small firms in disruptive technologies differ from large sustaining firms on the importance of market potentials and revenue generation. Large sustaining technological firms differ from large disruptive firms in the importance of revenue generation and potential markets, while large and small disruptive firms act in similar ways (Kassicieh et al., 2002). It is argued that, considering the type of innovation characteristics embedded in the product of Green Tech, the opportunity to provide more substantial arguments for the recommended commercialization strategy will be facilitated.

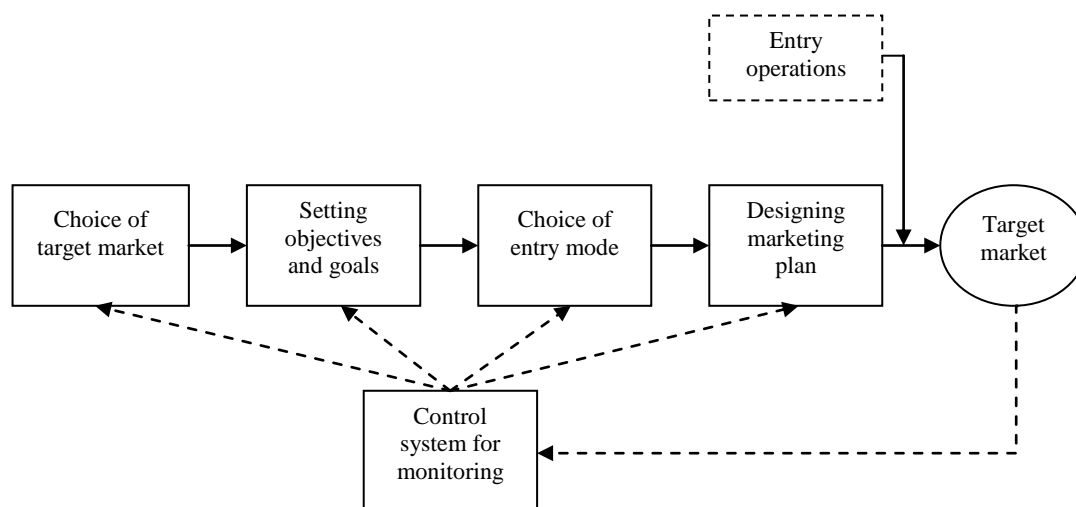
2.5. Entry strategies

The somewhat confusing terminology in academia requires for a distinction between entry strategies and commercialization strategies in order to crystallize their similarities and differences, but also to highlight their mutual dependency. While an entry strategy can

sometimes be interchangeable with a commercialization strategy, e.g. in the case of a non-equity investment such as licensing, a commercialization strategy can sometimes be conditioned upon the choice of entry strategy, for instance in the case of direct exports or equity investments. In the case of licensing, a firm enters a foreign market by allowing another firm to utilize the right to sell the product. The licensee is then responsible for commercializing the product on the market by means of various marketing strategies. On the contrary, if the firm decides to go directly to the market, i.e. by equity investment, the firm itself needs to design a commercialization strategy for the product in the new market. In the latter example, simply having a strategy for entry is not sufficient in order to commercialize the product in a new market. The firm must also set a marketing strategy in order to attain returns for the product. Hence, this marketing strategy, i.e. the commercialization strategy, can either be determined by the firm or a partner, depending on the mode of entry (Root, 1998). However, both entry modes and commercialization strategies require an extensive process that ranges from the idea generation process up until the market launch, also entailing implications on the product development (Cooper & Kleinschmidt, 1987; Root, 1998).

According to Burgel and Murray (2000) the preferred mode of entry for the majority of technology-based start up firms are characterized by relatively low resource commitments and are primarily directed toward exporting rather than foreign production. However, previous literature argues that the majority of the technological start-up firms initially have an international outlook. Root (1998) explains this to be a reaction to the global economy, arguing that all companies – whether small or large, domestic or international – must strive for profit and growth in a world economy characterized by enormous flows of products, technologies, capital and enterprise among countries. Thus, even companies that target their domestic market eventually will experience that there are no longer any home markets, only world markets. Researchers on internationalization strategies deal with this issue by exploring different forms of entry strategies in foreign markets. Root (1998) argue that a firm need to consider five key decisions with respect to the entry strategy i.e. (1) the choice of target market, (2) the objectives and goals in the target market, (3) The choice of entry mode to penetrate the target country, (4) The marketing plan, and (5) the control system to monitor the performance in the target market (Figure 1).

Figure 1



Root (1998) argues that planning an entry strategy is as important for small start-up firms as for large corporations, even though the resource stocks are completely different. Given the

resource held by a firm, an entry strategy should be delineated. Without an entry strategy a firm will simply take on a sales approach, a marketing strategy in the foreign market. Furthermore, Nakos and Brouthers (2002) argue that the choice of entry mode strategy is significantly related to firm performance, pointing out that choosing the wrong mode of foreign market entry can have severe performance implications for new entrants.

In simple terms a company can arrange a foreign market entry in one of two ways; either by exporting its products to the target market from a production site outside the country, or by transferring its technological, capital, and human resources to the foreign country, where they may be sold directly to users or combined with local resources. Although these are the two main approaches, they can further be broken down into several distinctive entry modes. The following table illustrates the different entry strategies.

Table 5

Entry modes		
<i>Primary entry mode</i>	<i>Definition</i>	<i>Specific entry elements</i>
Export entry	Limited to physical products. Production outside the target country, transferred into it. <i>(May imply equity investment)</i>	<ul style="list-style-type: none"> • <i>Indirect exporting</i> – Use middleman, located in home country. • <i>Direct agent/distributor</i> – Use target country middleman to market the product. • <i>Direct branch/subsidiary</i> – Depend on company’s own operation unit in target country.
Contractual entry	Primary utilized to transfer knowledge and skills. Comprise long-term associations between company and target market entity, serving as foreign market intermediary, transferring knowledge and skills. <i>(No equity investments)</i>	<ul style="list-style-type: none"> • <i>Licensing</i> – Allow a foreign market entity the right to utilize the companies industrial property i.e. its patents, know-how, trademark etc. In return for a royalty. • <i>Franchise</i> – Similar to <i>licensing</i>, although the franchisee is assisted by the franchisor in organization, marketing, and management under an intended permanent arrangement. • <i>Technical arrangement</i> • <i>Service contracts</i> • <i>Management contracts</i> • <i>Construction contracts</i> <p style="text-align: right;">} Transfer of services directly to foreign entity in return for monetary compensation.</p>
Investment entry	Involve ownership of target market entity by the international company. Feature management control and ownership. <i>(Equity investment)</i>	<ul style="list-style-type: none"> • <i>Sole venture</i> – Or foreign production affiliates, implies full ownership and control by the parent company. May start from scratch a new establishment or by acquisition of a local firm. • <i>Joint venture</i> – Shared ownership and control between parent company and a local partner.

Nakos and Brouthers (2002) argue that the literature on entry strategies for start-up firm lacks consistency. In their inquiry they express that, due to the scarce managerial and financial resources held by the firms, companies may prefer low investment non-equity modes of entry, such as licensing or exporting. On the contrary, other studies argue that these firms may be able to service small niche markets, and by doing so reduce investment risks and use more investment-intensive, equity-based entry modes, such as joint ventures and sole ventures. Furthermore, some scholars suggest that start-up firms may provide highly innovative products or services, consequently preferring equity modes of entry to protect their proprietary technology. Firms with less innovative technology may use non-equity modes in an attempt to obtain more advanced technology resources from foreign partners. As illustrated

by Nakos and Brouthers (2002), no best practice appears to exist for the choice of entry strategy. The nature of the firm, given its resources, is the foundation for the entry mode.

Four theoretical perspectives of entry mode selection are most commonly employed in the literature; transaction cost analysis (TCA), resource-based view, institutional theory, and Dunning eclectic framework (Brouthers & Hennart, 2007). The purpose of this study is not to investigate their individual advantages or disadvantages, neither is it to argue for the most appropriate model to facilitate for this research, but simply shed light on the fact that they exist.

In their study Burgel and Murray (2000) investigate the choice of entry mode in 246 technology based start-up firms, with the purpose of finding the preferable entry mode and the primary reason for this choice. The study was simplified to the choice of selling abroad either by direct export or through distributors. This was done because it was argued that the choice between direct export and the use of distributors was the essentially relevant strategies for technology start-up companies. Further, Burgel and Murray (2000) argue that the restricted market opportunities in many countries may not justify the development expenditures for highly specialized niche technologies unless international expansion is initially considered. This statement is supported by Root (1998) who argues that the diminishing borders between the domestic market and the international market command firms to react to the global economy by expanding their operations to foreign markets. Burgel and Murray (2000) explain that based on this statement, technology-based start-up firm are faced with a challenging dilemma. On one hand, the firm may be forced to venture abroad to help amortize their initial development expenditures and generate enough revenues to finance their ongoing development activities. On the other hand, because many technology-based start-up firms experience negative cash flows during their early years, they may lack the necessary human and financial resources required for effective product commercialization on their own. Burgel and Murray (2000) continue to argue that because of these resource constraints faced by the vast majority of technical start-up firms, identifying customers and providing pre-sale and after-sale support service may be handled easier by local partners. However, the problem with this arrangement is that the revenue is shared with the distributor. For this reason, technology start-up firms, early in the entry mode process are faced with highly strategic trade-offs, due to the fact that the choice of foreign market entry may have profound implications for their cost and revenue generation.

These findings illustrate that the entry mode decision is essentially a trade-off between the resources available at the firm's disposal and the external opportunities given the market conditions. Burgel and Murray (2000) conclude three important findings generated from their study. First, firms that wish to use distributors on foreign markets can benefit from using collaborative relationships in their domestic market first, as they are likely to easier gain learning from managing relationships and intermediaries in the home market. Second, start-up firms engaged in highly customized products should be prepared to commit appropriate resources to their pre-sale and after-sale service strategy given their reliance on direct export. Third, start-ups with limited record of achievements should preferably consider collaboration in order to exploit the track record and reputation of established foreign market intermediaries, since the risk of reluctance from customers to rely on small, untested, foreign suppliers is high.

The studies by Burgel and Murray (2000) and Root (1998) displays similarities with the work of Nakos and Brouthers (2002), who employ a model of large firm entry mode selection namely, Dunning's eclectic framework, for determining start-up choice of entry. Dunning's

framework takes three distinct variables into consideration when determining the mode of entry i.e. ownership, location, and internalization. These variables, in turn, take firm-specific and market-specific factors into account. First, ownership advantage is, according to Dunning (1988, 1993), what differentiates a firm from its competitors. Ownership advantages may be exemplified as firm-specific resources and capabilities that provide a unique advantage to the company. Second, one of the major advantages of expanding internationally is to access a wider market (Dunning, 1993). An international expansion may allow a firm to address existing customers in the foreign market, but most of all to acquire new ones. Location advantages of specific foreign markets can be conceptualized as the market's sales and growth potential, political and economic stability and trade policies. Finally, Nakos and Brouthers (2002) argue, that internalization advantage stems from the firm's decision to integrate new activities performed by the market within the company's structure. These activities range from the decision to establish a local manufacturing base up to the development of a distribution system.

The findings by Nakos and Brouthers (2002) again display that the mode of entry is essentially dependent on the interrelationship between internal and external factors. In terms of ownership structure the study illustrates that firms that produce differentiated products tend to prefer equity mode of entry. Considering location, Nakos and Brouthers (2002) conclude that start-ups tend to prefer equity mode when entering countries with higher market potential. This finding appears to be consistent as previous research suggests that start-up firms have the opportunity to identify and serve smaller niche markets. Finally the study display that start-ups appear to prefer non-equity mode of entry in markets with higher legal restrictions on equity ownership.

Furthermore Westhead et al. (2001) examine whether a resource-based view can be useful in identifying the range of factors that encourage start-ups to enter export markets. The research does not consider the choice of entry mode, but rather the determinants that make a firm exporter or not. However, this is interesting as it provides an important foundation for understanding the internal characteristics of the firm and how this may affect the choice of entry strategy. Westhead et al. (2001) argues that businesses with older principal founders, with a larger resource base, denser information and contact networks, and considerable management know-how are significantly more likely to be exporters. Bloodgood et al. (1996) support the findings of Westhead et al. (2001) arguing that a new venture's ability to enter foreign markets is directly related to its accumulated tangible and intangible resource stocks. The findings of Westhead et al. (2001), Burgel and Murray (2000), Nakos and Brouthers (2002) provide significant insight in order to delineate recommendations for the preferable choice of commercialization strategy and choice of entry mode.

As argued by Burgel and Murray (2000) and Nakos and Brouthers (2002), Root (1998) a company's choice of entry mode for a given product is the net result of several, often conflicting, forces essentially external and internal. Factors such as market, production, and environment are the fundamental external forces, unlikely to be affected by management decisions. Contrasting, how a firm responds to these external factors in choosing the entry mode is characterized by its internal resources (Root, 1998). The influence of each external and internal factor on the choice of entry mode is displayed in Appendix 1.

2.6. Conceptual framework

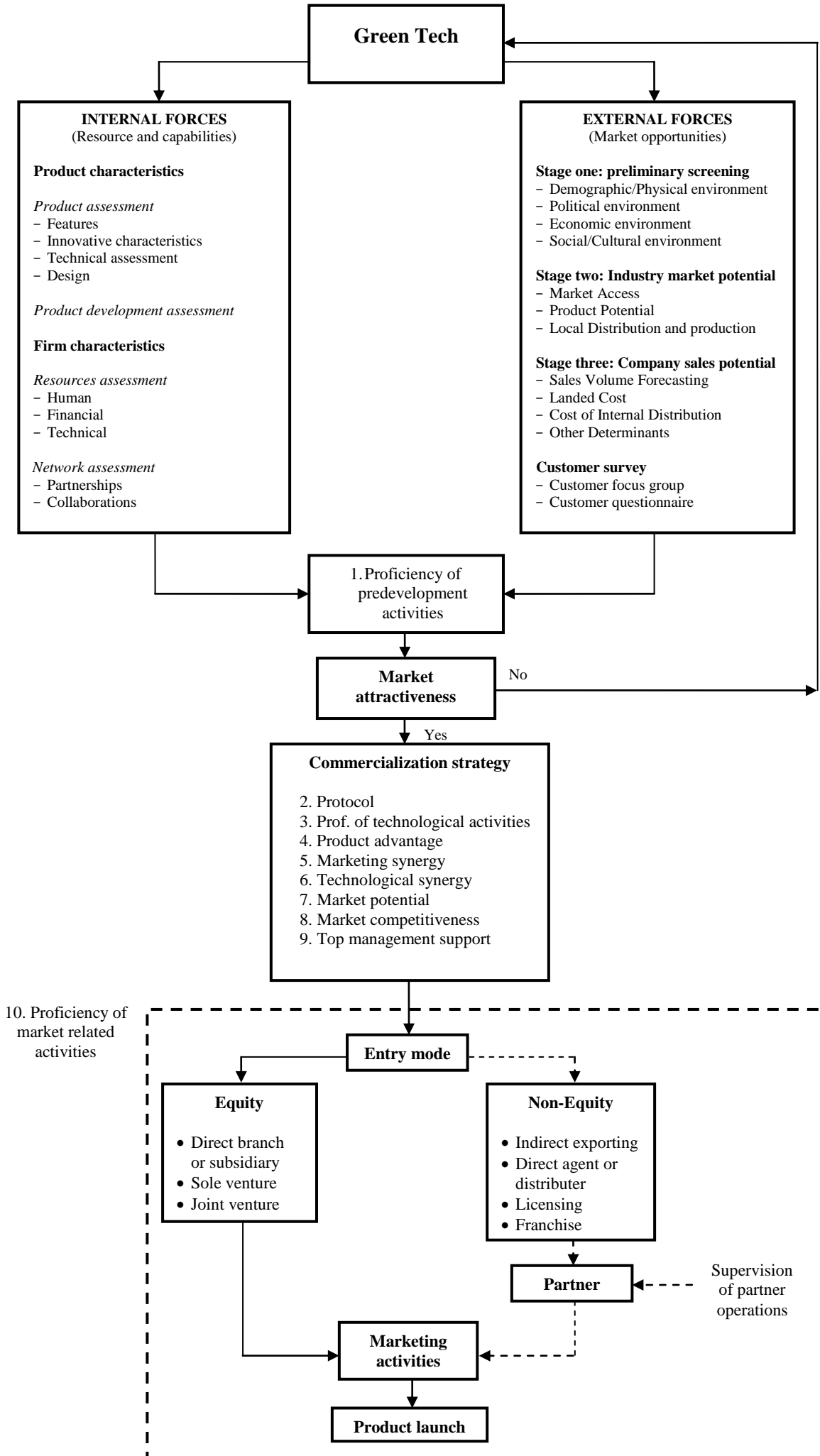
As it has been shown in the literature, successful products are very often linked to a well thought-out strategy, which, in turn, has a contingent relationship with external environment and the internal resource and capabilities (Chandler & Hanks, 2002; Cooper & Kleinschmidt,

1987; Burgel & Murray, 2000; Nakos & Brouthers, 2002; Root, 1998; Westhead et al., 2001; Bloodgood, 1996).

An analysis of the external environment will be performed to attain a clear understanding of the market attractiveness and market potentials as related to the technological product. Based on prior inquiries, internal and external, conclusions and recommendations on what strategy to embark on will be drawn at the end of the paper. The best suitable strategy will be provided by a circle of synergies where all the dynamic forces as explained by Chandler and Hanks (2002), and Cooper and Kleinschmidt (1987) are considered. The proposed framework summarizes the whole process that the authors of this paper will utilize in order to provide recommendations to Green Tech for its commercialization strategy. Based on the previous discussion a framework (figure 2), where the theoretical findings are incorporated in a conceptual structure.

As figure 2 displays, the framework represents a conceptual check-list that can be used by Green Tech's management team to thoroughly consider every aspect that, according to theory, needs to be factored into the overarching commercialization strategy. It can also be noticed that the framework guides straightforwardly managers from idea generation all the way to market launch. In fact, not only has the framework been designed to help Green Tech create an appropriate commercialization strategy, but it also embodies all the elements that need to be taken into consideration in order to increase the successfulness of the product introduction. Through an evaluation of the internal forces i.e. resources, capabilities, background etc. the authors aim to obtain an in-depth understanding of the factors that shapes Green Tech. Subsequently the external forces are provided as to assess the Italian vehicle market and the possible implications that these forces will have on Green Tech. The findings will be processed through the ten success factors provided by Cooper and Kleinschmidt (1987), corroborated by the models proposed by Cavusgil et al. (2003) and Root (1998), in order to draw implications on commercialization and entry activities for Green Tech.

Figure 2

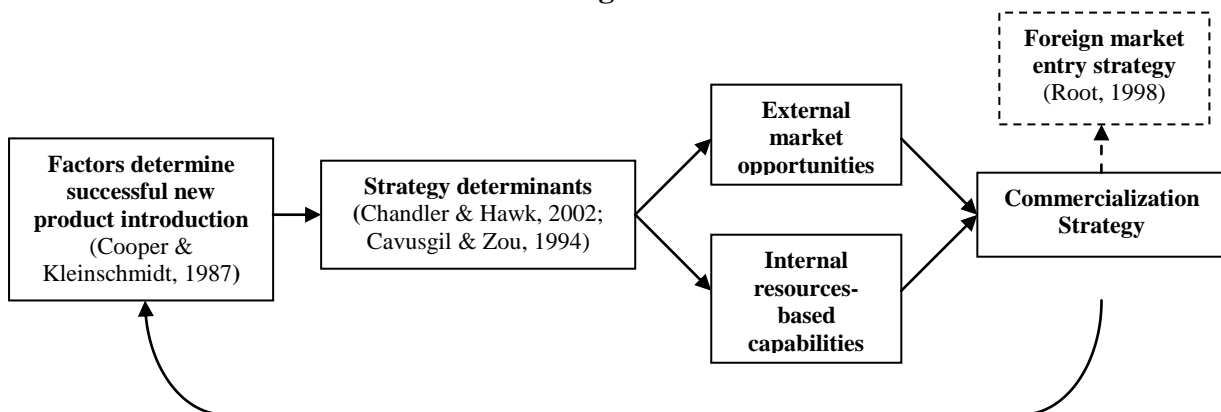


3. RESEARCH METHODOLOGY

The aim of this chapter is to inform the reader of the proposed research methodology. The reasoning behind the chosen research strategy and method as well as the data collection is thoroughly discussed as to give the reader an overview of the performed research.

According to Bryman and Bell (2007) the research methodology entails the methods, practices and procedures that are needed as to outline a procedural approach on the research. The purpose of this chapter is to delineate a conceptual method by which the overall paper is conducted. The process will thereby involve descriptions regarding the research strategy, research method, research design, data collection and data analysis selected in order to augment the validity and reliability of the analysis. The success factors for new product introduction provided by Cooper and Kleinschmidt (1987) constitute for the foundation on which the overarching research is designed. The factors are deemed to determine the successfulness of the commercialization strategy of a new start-up firm. Hence, in order to assess the performance of Green Tech in correspondence to the model, each factor has been fragmented as to evaluate its individual contribution to the overall success of the firm. A retrospective view of the model provided by Cooper and Kleinschmidt (1987) has enabled the authors to develop a conceptual framework, tailored for Green Tech. The proposed framework incorporates additional research with fundamental importance to the outcome of this inquiry, namely, that of Chandler and Hawk (2002), Cavusgil and Zou (1994), and Root (1998). A commercialization strategy is fundamentally affected by two main forces i.e. Internal resource based capabilities and external market opportunities (Chandler & Hawk, 2002; Cavusgil & Zou, 1994). Essential, in the context of foreign market introduction, is the choice of entry strategy. Although sometimes overlapping, the authors of this paper address entry strategies, as a vital element of the commercialization strategy. Figure 3 illustrate the interrelationship between the models and the rational of the overarching inquiry.

Figure 3



3.1. Research strategy

The choice of research strategy is critical in research projects because an altered strategy may jeopardize the overall validity and reliability of the analysis. According to Bryman and Bell (2007) research strategy can be broken down into two distinctive categories that differ from one another on the basis of analysis and data collection. A qualitative approach is opposed to a quantitative, and these two idiosyncratic groups present diverging characteristics.

Although this paper predominantly assume the conformation of a qualitative research, some quantitative methods was utilized in the performance of the market research, in order to generalize the validity of the research on the Italian territory. Primarily, quantitative analytical

tools were used by the authors to process the numerical data retrieved from the market research. Thereby, quantitative data was used to draw implications that present qualitative connotations. Besides the quantitative approach for the market research, the overarching strategy of this paper will showcase qualitative approaches, utilized in both data collection processes and the data analysis.

Due to the qualitative nature of the research the analysis the paper carries inductive conformations, in order for the researchers to be able to immerse themselves in the details of the unfolding data, so as to discover hidden dimensions and interrelations rather than simply testing a hypothesis as it occurs in deductive approach (Bryman & Bell, 2007). An interpretation of the processed data was also performed by the authors of this paper when assessing the attractiveness of the Italian market and the commercialization strategies for Green Tech (Bryman & Bell, 2007).

3.2. Literature review

As the inductive approach implies, the structure of the paper is required to be based on a grounded theoretical foundations (Bryman & Bell, 2007). When performing the literature review the steps as displayed by Pittway et al. (2004) have been followed:

- Define the research objective
- Identify Keywords
- Develop certain search strings and combinations based on keywords
- Expand the search on more than one database
- Summarize the review in order to refine research objective

After cautiously having identified the problem, the researchers performed a literature review in congruence with context of the commercialization topic, using keywords related to start-up commercialization strategies, new product introduction, internationalization strategies, entry strategies, and market research etc. Combinations of the keywords were also utilized in various databases in order to broaden the exploration. Ultimately, the literature review enabled for the development of the conceptual framework illustrated in Figure 2 that allowed the overall research into a clear and refined direction.

3.3. Research design

As the above explanation displays, the underlying research design of this paper was structured as a single case study analysis with a predominant emphasis on the Swedish technological start-up Green Tech. As Bryman and Bell (2007) states a case study is an in depth inquiry of a particular situation rather than a statistical survey of a broader phenomenon. Yin (1984) argues that a case study is an empirical inquiry that focuses on several variables of interest and relies on various sources of evidence with data needed to unite results. It is a method that is used to narrow down a broad field of research into a more confined researchable topic. Although this conformation may bring numerous drawbacks in the external validity of the paper (Bryman & Bell, 2007), the single case study design might be deemed the more appropriate structure due to the clear objectives and purposes that this master thesis is aimed to achieve. This choice was based on the unambiguous instructions the researchers was provided with by the case company i.e. delineate recommendations for a commercialization strategy, given the characteristics of the Italian market. Although the focus of the overall inquiry is confined within Green Tech, due to the nature of the analysis which aims to elucidate unique features on commercialization strategies for the firm, particular attention has also been paid on the external dynamics that the company may very likely interact with. These entail analyses of competitors, customers and external elements that, according to

theory (Chandler & Hanks, 2002; Cooper & Kleinschmidt, 1987; Cavusgil & Zou, 1994; Cavusgil, 1995), induce contingencies in the commercialization strategy. Thereby, even though references and allusions to supplementary case studies and analyses are provided, the overarching focus of the paper has solely been confined within the start-up at issue.

3.4. Research method

According to Bryman and Bell (2007) a research method is simply a technique for collecting data, involving instruments such as self completion questionnaire, structured interviews, or participation interviews.

In the process of collecting data for the research the different approaches vary with the type of research design, which in turn represents a structure supposed to guide the execution of a research method (Bryman & Bell, 2007). Along with the prior reasoning, the intention of this inquiry has been to provide a conceptual framework for the commercialization process of a new product innovation at Green Tech, and as different stages of our framework require different research strategies it will have implications for the research method for each of the containing sections. Concerning the research strategy, Bryman and Bell (2007) introduce the idea of triangulation and explain that it implies that the result of an investigation in one research strategy is cross-checked against the result of using a method associated with the other research strategy. The research has been performed in alignment with this idea and in the following paragraph the intended research method for each of the two main stages of the conceptual framework (figure 2) is provided.

Internal forces

The data collection has been carried out through qualitative interviewing, as the emphasis of this research approach is in the formulation of the interviewees' own perspective (Bryman and Bell, 2007). Interviewees for the intrinsic forces were chosen based on their level of commitment to the firm examined in this inquiry. The CEO, the Chairman of the board and the Purchase manager of Green Tech where therefore interviewed. An overview of the interviewees is presented in table 6.

Table 6

Position	Area of expertise	Previous experience
CEO	Project engineer	Experience from the automotive and the IT-industry.
Chairman of the board	Vehicle development	Vehicle development in several major global automotive companies.
Purchase manager	Purchase and project	Project manager for major supplier in the automotive industry

Semi-structured interviews were undertaken as to assess the internal forces i.e. the resources, skills, experience, and capabilities in disposal at Green Tech and to provide recommendations for future commercialization strategy adoption. It is argued by Bryman and Bell (2007) that structured interviews typically cover a list of questions in an interview schedule and with a possibility to be flexible in the sequence. This process was carried out in order to sift out the various internal nuances of the company.

External forces

The data collection of the extrinsic forces has depended on the specific stage of the market research process. Stage one and two have been performed through desk research via secondary information i.e. documentary sources, international business publications, etc., whereas the third stage requires primary information as outlined by Cavusgil (1985). All three stages of the framework have also been corroborated with primary information, which has been collected through interviews with industry experts.

Interviewees for the extrinsic forces were chosen on the basis of their expertise in the Italian automotive and scooter industry, their knowledge in the emerging industry of the electric vehicle industry, and their commitment to the political environment of the Italian market. An overview of the interviewees is presented in table 7.

Table 7

Position	Area of expertise
Town councilor, Florence	Head of transportation infrastructure in Florence
Town councilor, Milan	Head of transportation infrastructure in Milan
Taxi association manager, Florence	Head of the taxi association in Florence
Automotive expert 1	Head of economic , fiscal and commercial agreements at the Italian association of the automotive industry (ANFIA)
Automotive expert 2	Head of market research at “Quarto Route”

The data gathered in the different steps of the market research framework showcases primarily qualitative connotations, however, many elements, especially in the first two stages of the theoretical framework (Cavusgil, 1985) has also entailed the collection of quantitative information. Starting from a broader perspective, in fact, the market research is designed to sift out deeper aspects of the phenomenon as the data gathering process proceeds through the different elements (Cavusgil, 1985). Thus, while the first stage was performed by reviewing general data concerning the Italian territory, the third stage was executed by discerning the specific characteristics of market niches from the overall society, in order for the authors to be able to analyze the results in relation to the firm’s and product’s features. However, in agreement with Green Tech the third stage was limited to the investigation of just one factor due to lack of substantial data. The third stage solely concerned sales volume forecasting.

In order to fully accomplish the evaluation of the extrinsic forces, a further step constituted by the customer interaction was performed. The data gathering was carried out on the Italian territory through the utilization of both structured interviews and focus group sessions in order to assess the customers’ preferences towards the electric vehicle industry as a whole and towards Green Tech’s product specifically. Customer feedbacks have been gathered without sampling the interviewees. Thus all the Italian citizens were the objectives of the questionnaire regardless of their age, occupation, social class etc., in order to increase the generalizability of the findings. The focus group sessions was, instead, been conducted by sampling individuals that display both assured expertise of the automotive industry and business acumen.

Sample selection

When considering the sample, the choice of target population for the external interviews, as well as for the customer survey and the feedback group session has been sampled based on a geographical sample frame i.e. the inhabitants of largest cities in Italy. This has allowed for a structural allocation of the target population. For the external interviews industry experts and

policy makers was addressed. The customer focus group comprised a diverse range of middle-class income holders. For the customer survey random people were addressed on the streets of Florence. Bryman and Bell (2007) argues qualitative interviewing applies more or less equally as in ethnographic research, which explained to be a combination of convenience sampling and snowball sampling. The most prominent approach sampling method utilized in this research is the convenience sampling, which constitute for a method for manage and delimit a sample that is available to the researchers Bryman and Bell (2007).

Interview guide

Before the execution of the data collection the internal interviews with Green Tech, as well as the external interviews with the industry experts was tried out on a test population as to assure the legitimacy of the research questions. Like Bryman and Bell (2007) argues, it is desirable to conduct a pilot survey as to test the validity of the questions before administrating the interview to a sample. The pilot brought significant implications to the interview guide, which consequentially was reframed as to overcome the shortcomings signaled in the pilot interviews. Additionally, the questions for the customer survey and the focus group questions were correspondingly screened in order to pledge the soundness of the questions (Appendix 4)

3.4.1. Data analysis

The following steps of the proposed conceptual framework are concerned with data analysis. For these sections the authors relied on the commonly used strategy such as grounded theory. Grounded theory is defined as theory that is derived from data, systematically gathered and analyzed through the research process, containing theoretical sampling, coding, theoretical saturation and constant comparison (Bryman & Bell, 2007). As further argue that a central feature of grounded theory is that data collection and analysis proceed simultaneously.

The data gathering process was composed by two distinct steps that ultimately have been combined in order to draw conclusions and recommendations on which strategy that ought to be more suitable for Green Tech to undertake. Firstly, the focus has been on collecting information about the internal resources and capabilities that are at disposal of Green Tech. This entailed an assessment of the product, the product development, the resources, and the networks at Green Tech. Furthermore a classification of the innovative characteristics has been performed in order to confine the scope of the paper on either disruptive or incremental innovation and in order to determine whether or not the overarching commercialization strategies should take customer feedback in consideration or not (Christensen, 1997). The innovation ratios stated by Rice et al. (1998) have enabled the authors to assess whether the product can be categorized as a disruptive or an incremental innovation. At this stage of the process, an assessment of the attractiveness of the Italian market as related to the product was delineated by utilizing the three-staged framework by Cavusgil (1985) and the empirical data gathered in the customer survey and the focus group. The market attractiveness has been determined through the market assessment ranking model provided by Cavusgil et al. (2003).

Furthermore an assessment regarding the entry mode strategies was conducted by utilizing the conceptual framework proposed by Root (1998). The data, collected in the field research was processed and facilitated in the framework. Recommendations concerning the choice of entry mode were accordingly assessed.

3.4.2. External validity

A single case study design frequently implies a limited reliability for the phenomenon of generalization (Bryman & Bell, 2007). Hence, the validity of the findings derived from the

analysis of this paper can solely be confined within Green Tech, due to the fact that a single case study cannot be representative so that it might yield implications that can be applied more generally to other cases. Nevertheless, a certain degree of theoretical generalizability can be found in the analytical section of this paper. Particularly the conceptual framework, as displayed in figure 5, may be externally generalized to other technological start-ups that are about to delineate their commercialization strategy for new innovative products. The finding of this master thesis might also be functionally valuable to newcomers in the automotive industry that are entering the Italian market. However, proving the external validity of the findings does not fall into the overall objective of the paper, thereby this task will be left to future research.

3.4.3. Reliability

The consistency of the research is based primarily on the reliability of the data (Bryman & Bell, 2007). As it has been explicated in the above section, the overarching analysis of the paper has been based on two main data collection processes. The first one, directed towards retrieving information on internal forces within Green Tech, has been carried out by tape-recording the interviews with the interviewees' approval, in order to reduce any biased considerations on the qualitative data. The underlying interviews have been transcribed right after into a table of data, utilized by the authors for the assessment of the internal resources. The second data collection process has been executed in four stages. The first two were carried out by investigating at the most contemporary trend reports regarding the Italian market-place, whereas the third one was performed by tape-recording experts engaged in the automotive industry. The experts were chosen based on their commitment to the automotive industry of the Italian market, in order to augment as likely as possible the reliability of the analytical findings. The interviewees constituted of; town counselors in charge of the city traffic plans, presidents of taxi associations, statisticians and industrial consultants engaged in the Italian automotive industry. The interviews were performed over the phone thereby some of the words and expressions may have been gone lost in translation. However, the numerical data and core considerations regarding the Italian territory were meticulously translated right after the interviews.

The fourth stage of the extrinsic forces was broken down into two distinct sessions which both entailed field research. Customer feedback was retrieved by randomly interviewing Italian citizens. Although the 53 responses do not leave room for generalization of the findings across the whole country, the implications drawn presents a certain degree of reliability. The focus group, instead, was conducted through selected people who have spontaneously been willing to engage in a productive conversation. Thus the data retrieved from these undertakings displays greater weight when it comes to reliability in terms the customers' preferences. However, since all the field interviews and focus group sessions have been performed in Florence, the answers of the interviewees might have been biased because they may have related the usability of the Green Tech's product to their everyday lives, which, in turn, are determined by their geographical dwelling places.

4. EMPIRICAL FINDINGS

The current chapter offers the findings from internal and external forces. The assessment of the resources and capabilities of Green Tech is corroborated by a market research of the Italian territory.

4.1. Internal findings

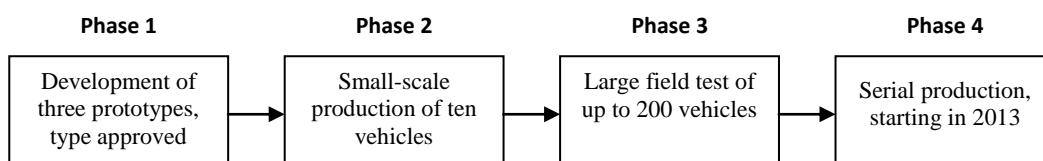
Founded in 2010, Green Tech emerged in an attempt to bring a new innovative transportation solution to the market. It is argued by the CEO that the majority of the daily car usage in Sweden amounts to a range of less than 40 km and in almost all cases one person is occupying the car. With global environmental awareness in the limelight and increasing oil prices making car usage an expensive means of transportation, the founders realized the opportunity for a new vehicle that could substantially reframe the landscape and enter the emerging industry of electric vehicles. One of the interviewees expressed that there is need for electrification in the society as a whole, “From an environmental point of view we need to go electric”. A market in-between the established scooter industry and the saturated automotive industry was recognized as the target market for Green Tech. Weight was argued to be one of the main factors of energy consumption, therefore, as the idea was to provide energy efficient vehicles, the plan was to manufacture the vehicle in composite with a target weight of less than 150 kg. Furthermore it was explained that the efficiency of a combustion powertrain is 25%, whereas the energy efficiency in the electric motors is at least three times better, amounting to almost 70%.

“The capacity of a car does not reflect the real need of the average customer...The car is a tool for all kinds of purposes, both short and long haul routes...Our business idea is to create a solution for 90% of this usage”

CEO, Green Tech

Today, the project is entering a phase where a new, refined concept vehicle is under development. At present the project is partially financed by private equity, regional subsidies, and governmental loans and a financial plan is sketched out for the upcoming years. So far Green Techs vision is fairly undefined and a lack of consistency in the answers was identified. One of the interviewees expressed the vision as the opportunity to provide an ultra light vehicle to the market so as to fulfill the needs of transportation between the two and four wheeled vehicles. Another respondent answered that the vision was to provide transportation solutions for the majority of the transportation needs. Despite the diverse answers a joint goal could be crystallized i.e. to provide a lean, clean, and safe transportation solution for the majority of the daily vehicle usage. As for the mission statement, the replies where also divergent, indicating that the business plan might be inadequately communicated amongst the owners. The long-term strategy is described to be divided into four phases, illustrated in figure 4.

Figure 4



The uniqueness of Green Tech's new product innovation is the fact that it offers a whole new way of manufacturing vehicles, using a sandwich composite body, drawing on the experience from the aerospace and boat industries.

4.1.1. Product characteristics

Considering the measurements and the product technicalities the project is shown to be fairly dynamic. As the project is still in the development phase (phase 1) the target specifications are constantly discussed and evaluated as to end up with a final product that fits the market most properly. It is argued that due to the light construction of the vehicle the energy consumption is positively affected and hence offers several opportunities. One possibility discussed by the company is to attach solar panels to the roof, which would help to generate power to the electric motor, which in turn would increase the driving range. However, this solution is dependent on the cost variable. Another, already decided upon solution is the possibility to recharge the vehicle in an ordinary electric socket, something not obvious for other electric vehicles. It is further explained that the basics for choosing composite for the body is that no other material offers the same combination of strength and light weight. Again weight is argued to be a critical determinant, as more than 80% on the energy consumption of the vehicle is based on weight. Another advantage of using a composite body is that manufacturing costs as well as the tooling costs are fairly low in comparison to a regular aluminum body. As of today Green Tech has filed one patent for a rear bumper technology and is in the process of filing an additional two patents. On the question of whether these patents will offer a competitive advantage a joint answer is that it may scare future competitors, and obviously limit the possibilities of imitation.

Considering the manufacturing of the vehicle, the long term plan is to invest 1 million SEK in a cutting machine (phase 4), with the idea of preparing kits containing the components for the composite body together with the electric motor and its components. The anticipated long-term vision is that these kits should be shipped to local partners in foreign countries that should be able to assemble the vehicles themselves. However, this would require an initial investment in necessary facilities and manufacturing tools for the partner. As argued, the expected long-term target is to locate manufacturing, assembly, sales and after-service under one single roof. However, initially all production and service will be carried out by Green Tech. Today the electric system is bought from a Taiwanese scooter manufacturer, although, there are no intentions to collaborate long-term with the supplier, the agreement is negotiated up until 200 pieces (Phase 3). However, the possibility of a long-term partnership has not been excluded and may evolve depending on whether there are any other suppliers able to customize the production for Green Tech. As of today, Green Tech is collaborating with a Swedish boat manufacturer, supplying bodies up to 200 pieces. After the targeted 200 pieces Green Tech will enter their mass market phase which implies exporting the manufacturing and assembly to local partners.

4.1.2. Firm characteristics

The ownership structure of Green Tech consists of five partners, all with different backgrounds and experiences, although mainly from the automotive industry. Because of the long experience in the industry, and due to the extensive networks, several skilled resources have throughout the development phase been utilized in a so called advisory board. Functioning as a consultancy group, the board has been assigned to bring their long experience from the industry to the company. It is argued that the plan, from inception, has been to utilize external experts throughout the development phase for design, construction, electricity etc. Meanwhile this focus will change as the company enters the fourth phase entailing scaled production. As previously argued, this phase will imply partnerships with

local partners in forging markets, which will require a different labor structure. For the later phases of the commercialization process the most important resources are argued to be skilled marketing and sales representatives with the responsibility to establish the contacts with the foreign partners and find suitable distribution channels for the company.

In the start-up phase Green Tech was entirely financed by stockholder contributions. By 2011 it received an interest free loan from the energy agency to be financed up to type approval. However, subsequent financing has not been decided upon and will have a significant impact on expansion possibilities. Even so, the financial outlook is still positive and the company expects to get enough financial support to realize the anticipated plan and enter full scale production within three years. Green Tech is today relying on an extensive network of highly experienced people in the automotive industry who will support the company with adequate knowledge for development and manufacturing issues, but also with suppliers local and foreign who will come to play a major role in market introduction process.

4.2. External findings

For the extrinsic assessment the market research framework provided by Cavusgil (1985) is utilized. The market research is supported by five interviews with automotive industry experts of the Italian market.

Energy consumed by personal travel, and the resulting CO₂ emissions, depend on the fuel, the vehicle, the distance travelled and the number of passengers travelling together. The amount of fuel consumed also depends on the driving patterns of the household, which in turn depend on urban planning, infrastructure and alternative transportation systems. In many cases, households have few alternatives to private cars for commuting, shopping, visiting etc. According to Eurostat (2010a) European households are considered extremely car dependent. The every-day distances covered progressively increasing leading to a rise in the usage of fuelled transportation forms that, by default, increase the pollution level throughout EU. The increased utilization of vehicles in European households is a phenomenon that, according to Eurostat (2010a) can be rooted in the increasingly expanding urban areas of the cities, which has led to a separation of the residential area from the commercial one. As a result, this occurrence has made walking or cycling less convenient (Eurostat, 2010a). In order to counteract the augmenting air contamination, governmental institutions have adopted measures to reduce emissions of pollutant by promoting regulations, encouraging the improvement and development of new technological solutions (Eurostat, 2010a).

The development of electric vehicles has, thereby, been incited by European authorities, which have adopted policies for provision, incentives and tax exemptions both to developers and end-consumers so as to spur the industry (Eurostat, 2010a). Although efforts have been made, numerous challenges need to be overcome. Primarily it is argued by ACEA (2010a) that the crucial need of having a uniform and user-friendly charging infrastructure is a prerequisite in order to expand the electric vehicle market. A uniform solution will expectantly become standard for all new vehicle types by 2017 (ACEA, 2010a). Furthermore five main challenges are discerned that are crucial for the development of the electric vehicle industry. The factors address that both consumers and authorities are responsible for the future of the automotive industry.

- Customers will have to get used to the specific characteristics of the new technologies such as different driving or recharging requirements.
- The energy sector will have to build a suitable recharging infrastructure.

- National governments need to provide appropriate market incentives.
- The automobile industry is competing to offer attractive electrically chargeable vehicles, while maintaining high safety and comfort standards. One major challenge for the automobile industry will be reducing the cost of the vehicle, particularly the battery system.
- An agreement on the standards and common interfaces e.g. for the vehicle-to-grid infrastructure is needed.

A viable policy framework will set feasible objectives, provide predictability to industry, enable technological progress, and assesses the impact of regulatory measures beforehand. Investments in renewable energies and the necessary recharging and refueling infrastructure are a further prerequisite and require the involvement of several unite parties (AECA, 2010b).

Furthermore, incentives for owning electric vehicles will be needed. The incentives mainly consist of tax reductions and exemptions, as well as, bonus payments for the buyers of electric vehicles. As of today the 17 European countries levy passenger car taxes partially or totally based on the vehicle CO2 emissions or fuel consumption. However, Italy chose not to prolong its one-year fleet renewal scheme which included both CO2-based incentives and incentives for electric vehicles (AECA, 2010c).

4.2.1. Stage one

The purpose of the preliminary screening is to eliminate some foreign markets from further consideration. Cavusgil (1985) argues that an example of such eliminations would be the absence of comparable or linking products and services, a shortage that would hinder the potential for marketing the company's products. When considering the European Union we refer to the 27 member states, whereas the Eurozone concerns the 17 member states of the economic monetary union (EMU).

4.2.1.1. Demographic consideration

Population size, growth and density:

Table 8

Population size, growth, and density			
2009	Population (million)	Growth (From 2008)	Density (People per sq. Km)
EU	498.6	0.4%	119
Eurozone	327.3	0.4%	130
Germany	81.9	-0.3%	235
France	62.6	0.5%	114
UK	61.8	0.7%	254
Italy	60.2	0.6%	203
Spain	45.9	0.9%	91
Sweden	9.3	0.9%	22

According to census performed (Eurostat, 2010b) the Italian population is estimated to roughly 60.2 million inhabitants, making it the fourth most populous country in the European Union (Worldbank). Considering the population growth rate, it can be noted that Italy's population has grown by 0.6%, however this figure has been predominantly influenced by the

migration flows from African and west European countries, which counted for over 300,000 new immigrants that settled in Italy during 2009 (Eurostat 2010b). The density per square kilometer accounts for 203 people, above the average, compared with the EU and Eurozone (Worldbank).

Urban and rural distribution:

Table 9

Urban and rural distribution					
2009	Urban Population	Rural Population	Urban Distribution Growth (from 2008)	Rural Distribution Growth (From 2008)	Population in the biggest cities (% urban Population)
EU	368,578	130,519	1%	0%	15%
Eurozone	240,543	87,233	1%	0%	15%
Germany	60,417	21,537	0%	0%	6%
France	48,579	14,039	1%	0%	21%
UK	55,655	6,170	1%	0%	15%
Italy	41,144	19,149	1%	0%	8%
Spain	35,727	10,516	2%	1%	16%
Sweden	7,863	1,429	1%	0%	16%

As table 9 displays the urban population is more than two times of the rural population. A trend of the population migrations can also be noted in the urban distribution growth, which entails a movement of people from the rural to the urban areas. Considering the percentage of population in the largest cities, it can be noted that the population of Italy is more disseminated than the population of other countries of the European Union.

Climate and weather variations:

Most parts of Italy have a Mediterranean climate with hot dry summers and cool wet winters except the mountain areas to the north which have an Alpine Climate. However, due to the length of the country, weather conditions vary intensively between the North and the South (Eurometeo).

Table 10

Average temperature (C°)												
2009	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Germany	-0.5	0	4	9	14	17	19	18	15	10	5	1
France	3.5	4	8	11	15	18	20	19	17	12	8	4.5
UK	4	4.5	7	9	13	16	18	17	15	11	8	5
Italy	7.5	8.5	11	14	18	22	25	24.5	22	17	13	9.5
Spain	5	6	10	12	16	20	24	23	20	14	9	6
Sweden	-3	-3	-1	4	10	15	18	17	12	7	3	0

Table 11

Average precipitation (mm)												
2009	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Germany	46	40	33	42	49	65	73	69	48	49	46	43
France	56	46	35	42	57	54	59	64	55	50	51	50
UK	53	40	37	38	46	46	56	59	50	57	64	48
Italy	65	65	56	65	51	30	25	17	66	78	96	97
Spain	38	34	45	44	44	27	11	14	31	53	47	48
Sweden	43	30	25	31	34	45	61	76	60	48	53	48

Shipping distance:

In order to assess the shipping and distribution infrastructure of a country several indexes and figures can be utilized. The Liner Shipping Connectivity Index (LSCI) captures how well countries are connected to global shipping networks. It is based on five components of the maritime transport sector i.e. number of ships, container-carrying capacity, maximum vessel size, number of services, and number of companies that deploy container ships in a country's ports. The index generates a value out of 100 for the country (Worldbank). Another index is the Flight Connectivity Index (FCI) in which a value is generated that indicate to which countries one can fly from a given country, based on published schedules of IATA airlines. Domestic flights are not included (Worldbank).

Table 12

Shipping distance		
2009	LSCI	FCI
Germany	91	110
France	75	103
UK	88	105
Italy	60	85
Spain	74	72
Sweden	31	39

Product-significant demographics:

In this section product-specific factors are taken into account. Considerable emphasis has thereby been put on the elements of the Italian infrastructure that are related to the automotive industry. Aspects such as the road density and the number of vehicles that are present in the territory are thereby considered.

Table 13

Product significant demographic				
2009	Km of roads per 100 Km area	Vehicles Per Km of road	Motor vehicle Per 1000 People	Cars Per 1000 People
Germany	180	208	554	502
France	173	39	598	495
UK	172	80	526	462
Italy	184	81	673	596
Spain	132	35	606	486
Sweden	128	11	521	464

Physical distribution and communication networks:

Table 14

Physical distribution and communication networks				
2009	Roads Km (Total Network)	Rail Lines (Total Route Km)	Internet Users (per 100 people)	Cell phone Subscription (per 100 People)
Germany	644,288	33,706	79.5	128
France	951,200	33,778	71.3	95
UK	419,634	16,173	83.2	130
Italy	484,688	16,959	48.5	150
Spain	667,064	15,043	61.2	111
Sweden	574,741	9,946	90.3	123

Natural resources:

In order to assess the natural resources, factors related to the automotive industry are presented.

Table 15

Natural resources		
2009	Total Resources Rents (% of GDP)	CO2 Emissions (metric Tons Per Capita)
Germany	0	9.6
France	0	6
UK	1	8.8
Italy	0	7.7
Spain	0	8
Sweden	1	5.4

Total natural resources rents is the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents as related to the GDP.

4.2.1.2. Political environment

System of government:

Italy has been a democratic republic since June 2, 1946, when the monarchy was abolished by popular referendum. The constitution was promulgated on January 1, 1948.

The Italian state is centralized. The prefect of each of the provinces is appointed by and answerable to the central government. In addition to the provinces, the constitution provides for 20 regions with limited governing powers. Five regions: Sardinia, Sicily, Trentino-Alto Adige, Valle d'Aosta, and Friuli-Venezia Giulia function with special autonomy statutes. The other 15 regions were established in 1970 and vote for regional "councils." The establishment of regional governments throughout Italy has brought some decentralization to the national governmental machinery. Recent governments have devolved further powers to the regions. However, many regional governments, particularly in the north of Italy, are seeking additional powers. The 1948 constitution established a bicameral parliament (Chamber of Deputies and Senate), a separate judiciary, and an executive branch composed of a Council of Ministers (cabinet), headed by the president of the council (prime minister). The president of the republic is elected for 7 years by the parliament sitting jointly with a small number of regional delegates. The president nominates the prime minister, who chooses the other ministers. The Council of Ministers, in practice composed mostly of members of parliament, must retain the confidence of both houses (Governo).

Political stability and continuity:

Until recently, there had been frequent government turnovers (more than 60 and counting) since 1945. The dominance of the Christian Democratic (DC) party during much of the postwar period lent continuity and comparative stability to Italy's political situation. A series of center-left and center-right coalitions have been exchanging the parliament on Italy's political landscape from 1996 until today (Governo).

Government involvement in business:

So far the government has not taken a direct and specific policy, which would encourage the purchase or distribution of electric vehicles. However there are possible local and regional

policies that are based mainly on tax relief. For example, there is an exemption from paying the "ownership tax" on electric or hybrid cars for a number of years from first registration. Tax insurance premiums are also reduced by 50% annually for environmental solutions

Government involvement in communications:

Currently the government does not pursue any information campaign on the electric transportations issue, nor does it promise a change of strategy in the immediate future. However, most of the largest cities in the Italian territory pursue a policy of no-traffic in the historic downtown areas. These restricted districts are closed to any kind of vehicles from 8 am up until 7.30 pm. Deliveries to businesses located in downtown are made in the morning before the time indicated above. The historic downtown areas are then categorized as pedestrian zones where bicycles and electric vehicles solely are allowed to move around at any time of the day.

Attitude toward foreign business (Trade, restrictions, tariffs, non-tariffs barriers and bilateral trade agreements):

There are no obstacles or barriers on the market. Anyone can enter and work in Italy. The tariffs and restrictions are those that are applied to the European Union. (europa.eu)

National economic and developmental priorities:

The developmental prioritizations that the Italian governmental authorities are undertaking are dedicated to reducing public debts and fixing tax evasions. At the moment there are plans concerning the green energy solutions but not as related to the automotive industry. (International Monetary fund) Although subsidies for electric solutions are decided upon a regional basis by each municipality, the national government does not incite the provision. However the plan to provide incentives for environmental solutions is on the agenda for the next financial maneuver (Governo).

All the other countries that are being taken into consideration are providing incentives for the green alternatives such as electric, LPG, and hybrid vehicles. (ACEA, 2010)

4.2.1.3. Economic environment

Overall level of development/inflation:

Table 16

Overall level of development				Currency
2009	GDP (Currency US\$) Billion	GDP per capita (Currency US\$)	GDP per capita growth (Annual %)	Inflation, consumer price (Annual %)
EU	16 374,5	31,457	-4,3%	-
Eurozone	12 443,6	34,096	-4,1%	-
Germany	3 330,0	40,670	-4,7%	0,3%
France	2 649,4	41,051	-2,6%	0,1%
UK	2 174,5	35,165	-6,0%	-0,6%
Italy	2 112,8	35,084	-5,0%	0,8%
Spain	1 460,3	31,774	-3,6%	-0,4%
Sweden	406,1	43,645	-5,1%	-0,3%

Italy was by 2009 the fourth largest country in the European Union in terms of Gross domestic product (GDP), which amounted for 2112.8 billion US\$. The GDP per capita was 31.909 US\$, constituting for a decline by -5% from previous year. The Inflation, measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services.

Income and distribution:

Table 17

Income and distribution							
2009	GNI (Currency US\$) billion (Former GNP)	GNI per capita US\$ (PPP) (Former GNP)	Income share held				
			Highest 20%	Second 20%	Third 20%	Fourth 20%	Lowest 20%
EU	16 305,6	31,288	-	-	-	-	-
Eurozone	12 346,8	33,816	-	-	-	-	-
Germany	3 377,0	36,78	36,9%	13,7%	17,8%	23,1%	8,5%
France	2 671,2	33,93	40,2%	12,6%	12,6%	22,8%	7,2%
UK	2 218,1	37,23	44,0%	11,4%	16,0%	22,5%	6,1%
Italy	2 076,3	31,36	42,0%	12,0%	16,8%	22,8%	6,5%
Spain	1 430,2	31,88	42,0%	12,1%	16,4%	22,5%	7,0%
Sweden	413,4	38,59	36,6%	14,0%	17,6%	22,7%	9,1%

The gross national income (GNI), earlier gross national product (GNP), amounted by 2009 to 2076.3 US\$. The GNI per capita is converted to international dollars using purchasing power parity (PPP) rates. That is, an international dollar has the same purchasing power over GNI as a US dollar has in the United States. The GNI per capital was by 2009 31.36 US\$. The percentage share of income is the share that accrues to subgroups of the population.

Role of foreign trade:

Table 18

Role of foreign trade in the economy			
2009	Import of goods and services (% of GDP)	Export of goods and services (% of GDP)	Current account balance (BOP, current US\$)
Germany	36%	41%	165,470,569,516
France	25%	23%	-51,857,465,293
UK	30%	28%	-27,060,601,907
Italy	24%	24%	-66,198,814,996
Spain	26%	23%	-80,375,052,930
Sweden	42%	49%	31,460,364,996

Import of goods and services represent the value of all goods and other market services received from the rest of the world to the target country. In 2009 the percentage of import of goods and services in Italy was 24%. Included in the measure is the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services (Worldbank). Contrasting, export of goods and services comprise the same key indicators, however in an exporting context. 2009 Italy's export amounted for 24% of the

GDP. The balance of payments (BOP) is measured by the current account balance which refers to the sum of net exports of goods, services, net income, and net current transfers.

Income and expenditure patterns:

Table 19

Disposable income and expenditure patterns				
2009	Net national income per capita US\$ (PPP)*	Real household disposable income (Annual %)*	Real private consumption and expenditure (Annual %)*	Real public consumption and expenditure (Annual %)*
Germany	31 303	-1,0%	-1,0%	2,9%
France	29 157	1,7%	0,6%	2,8%
UK	31 627	1,0%	-3,3%	1,0%
Italy	26 416	-2,9%	-1,7%	0,6%
Spain	26 059	1,9%	-4,2%	3,2%
Sweden	32 544	1,6%	-0,8%	1,8%

* OECD, 2010a

The disposable income is measured by the net national income (NNI), encompassing the income from households, businesses and the government. Further, the annual growth in real household disposable income illustrates that Italy suffered a decline of -2.9% in 2009, the highest among the concerned countries.

4.2.1.4. Social environment

Table 20

2009	Labor force education level				PISA ranking		
	Literacy rate	primary education	secondary education	tertiary education	Mathematical proficiency (Upper/lower)*	Science proficiency (Upper/lower)*	Reading proficiency (Upper/lower)*
Germany	-	17%	59%	24%	13/17	10/15	14/26
France	-	26%	44%	29%	19/28	22/33	14/27
UK	-	22%	46%	32%	23/31	14/19	19/27
Italy	99%	39%	44%	16%	32/36	32/37	27/31
Spain	98%	44%	24%	32%	32/36	32/37	30/35
Sweden	-	16%	54%	30%	21/30	25/34	13/26

* OECD 2010a

When considering the literacy rate all the concerned countries are amongst the most developed countries in the world, hence the literacy rate is perceived as obvious. Although minor, and most likely insignificant, Italy and Spain indicate that literacy rate cannot be taken for granted even within the European Union. Regarding the education, Italy displays the lowest level of tertiary education amongst the target countries. The Program for International Student Assessment (PISA) is a global evaluation of the performance of 15-year old school pupils performed by the OECD. PISA is design as to enable politicians and policy-makers to assess how different country's educational systems compare. On the basis of the samples of students assessed by PISA, it is not always possible to say with confidence which of two countries with similar performance has a higher mean score for the whole population.

However, it is possible to give a range of possible rankings within which each country falls (OECD, 2007).

4.2.2. Stage two

4.2.2.1. Market access

On the Italian market, there are the rules established by the European Union in terms of free movement of goods and free competition. There are no favorable conditions for foreign companies, therefore, any settlement or investments are not encouraged, but neither constrained. The climate is therefore neutral. Thus there are no constraints in terms of import regulations for Swedish businesses. Patents and trademarks that have been filed in the European patent office are then valid throughout the whole country.

Taxation:

As a rule, corporate income tax (IRES) is applicable to all resident companies on income from any source, whether produced in Italy or abroad, i.e. on a world-wide basis. Non-resident companies are subject to IRES only on income earned in Italy. IRES is normally charged on the net of revenues less business costs, except for some non-deductible expenses. Both resident and non-resident companies are subject to regional income tax (IRAP), but only on income arising in Italy. Corporate income tax (IRES) is levied on the world-wide income of companies resident in Italy. The same tax is levied on the income of the permanent establishment in Italy of a foreign company (in this case only the income arising in Italy is taxable). In addition to that a local tax (IRAP) is levied on earned income. IRES is currently levied at a rate of 27.5%. The current rate of IRAP is 3.90% and it is not deductible from for IRES purposes. The gradual elimination of IRAP is envisaged in the near future (Governo).

4.2.2.2. Product potential

The electric vehicle industry is still considered a niche market in Italy. Innovative products have higher appealing potentials in the northern or north-central regions based on a number of factors: more economic potential, the highest propensity to buy, more road congestion, less conservative attitudes. In the south there is less disposable income, plus a higher conservatism. Amongst all the elements valued by potential customers when buying a new vehicle, reliability and dimensions are considered the most important. This is due to the fact that electric vehicles' reliability has been partly discredited by the electric scooters manufactured in Asia, which are the only ones that are present on the market at the moment. The vehicle's dimension is also deemed as one of the most relevant factors by potential customers because of the parking difficulties in the downtown areas of the cities. In terms of infrastructure, there are some key indicators of demand. The Italian territory, in fact, is provided with recharging stations for electric vehicles, which offer free power, available to anyone. The concentration of the free recharging stations is present in the downtown areas of the largest cities of the center-north regions. Although plans to expand this infrastructure in the southern regions are on the agenda, most of the investments have been made in the urban areas of the north because of foreseeable higher potentials. Even though the infrastructure for electric vehicles is mainly spread out in the northern regions, the average distances that people cover daily is longer due to better means of commuting, as opposed to the southern regions where the average commuting time does not go beyond twenty kilometers. Although the buying behavior differs extensively from region to region, the potentials of a new electric vehicle on the Italian market is contingent on the economic efforts that customers are required to make. Italian citizens, in fact, are ready to accept new solutions as long as the financial commitment in terms of purchase and management are comparable with the conventional vehicles that are already on the market. In terms of competitive offerings, there are no leading

companies at the moment that are playing out a significant role in the electric vehicle industry. The market is nearly nonexistent and the prospects for the future are that it will still be a niche market. The main competition may then derive from public transportation since there is a plan outlined by the government to increase the communication and transportation infrastructure. Regarding design, the phenomenon of three wheel vehicles was totally absent and the market showed no interest. Now the situation has changed with the entrance into the market by Gilera-Piaggio three-wheel vehicles that have been well received, especially in metropolitan areas.

4.2.2.3. Local distribution and production

The industrial structure and distribution in Italy is very wide and varied thereby there are not great impediments in terms of transportation and shipping. In terms of manufacture, the labor market is largely versatile and new production skills can be formed quickly. However, due to the low concentration of electric vehicle producers in the Italian territory, the expertise and knowledge is not yet in place throughout the country. Northern regions display a more advanced distribution and production infrastructure as opposed to the southern areas, where the vehicles are usually imported. The headquarters of the main vehicle producers, such as FIAT, Piaggio and Pasquali, are located in the central-north regions, however production plants are equally distributed throughout the entire territory.

4.2.3. Stage three

4.2.3.1. Sales volume forecasting

Along with the above information, the electric vehicle industry is considered a market niche in the Italian territory. Potential customers who may be interested in these new solutions are citizens of the central-northern regions who belong to a moderately wealthy social class. When considering end-consumers, customers can be identified in those people that live in the major Italian metropolitan areas. Particularly, the segment that more likely will be appealed to by electric vehicles is made up of businessmen and executives, with a higher education, within the age-span of 30-60. Similarities can be found with the phenomenon of electric bikes (or pedal assistance), which has seen clientele that was mainly consisted of people living in larger centers, good income and more highly educated, with a predominantly female audience.

When considering the other potential customers, the concentration of customer segments can be detected in the large municipalities with a historic downtown area. Since all the Italian city-centers are closed to traffic in order to prevent the old towns from being exposed to corrosive factors, such as smog and noise-pollution, town councilors are struggling to find transportation solutions for citizens that live in those areas and for tourists who desire to move around the city. Electric vehicles can be an answer to the need of having pedestrian areas in the old-town centers while, at the same time, providing availability of transportation solutions. Other potential customers are also the supply companies that need to deliver goods to other businesses in downtown areas. At the moment deliveries are being made before 8 am every morning, because trucks and supplying vehicles are only allowed until that time. Electric vehicles are instead allowed throughout the day in these restricted areas.

Regarding the competitive pressure in the electric vehicle industry, at the moment there are no companies that have acquired a noteworthy market share in Italy. Electric scooters are being imported from Asian countries, however their presence in the automotive industry is minimal. Pasquali, which is an Italian auto-maker, is commercializing an electric city-car at a price level that is approximately 18.000 euro. Piaggio and Gilera have not yet entered the electric market. However their financial capabilities and their innovative backgrounds can lead to the development of environmental solutions in the upcoming years. If considering the overall

automotive and scooter industry instead, the competitive pressure is deemed extremely high due to the historic and cultural maturity. At the moment, in fact, the Italian automotive market has arrived at a state of market saturation. Undifferentiated growth is finished and car-makers are witnessing the phenomenon of substitution more than anything else, a car or a new bike to replace an old one.

4.2.4. Customer interaction

This section is composed by two sub-sections. These comprise the customers' feedback on the Green Tech's vehicle and a focus group session. In the customer feedback session, the data has been gathered by randomly asking people their preferences when buying a new vehicle, and subsequently by asking them what their preferences towards the Green Tech's vehicle were. The focus group session instead has been carried out with experts and businesspeople in a conversational way. The data that is presented in this section is the result of both a questionnaire and their observations and comments regarding Green Tech's vehicle.

4.2.4.1. Customer feedback

The total amount of respondents in the questionnaire was 53, 20 females and 33 males. The majority were within the age-span of 21-30. Regarding the characteristics that they value at most when buying a new vehicle, speed and capacity are rated with the lowest values. On a Likert scale from 1 to 7 the speed received an average rating of 4 while the capacity received a 5. Age and speed are inversely correlated. Thereby the higher the age the lower the need for speed. Capacity and age are instead directly proportional, thereby the higher the age the higher the need to carry more passengers. If considering the median, recharging time, electric power, design and after-sales service have received a high rating in terms of importance with a score of 6. If considering the mean, instead, recharging time, electric power and design are closer to 5 rather than 6. The importance of these three elements is then not as high as other elements. Characteristics such as range, infrastructure, price and reliability of the vehicle, have instead received the highest value if considering the median. Reliability has also scored a 7 if considering the mean. That means that all the respondents have valued this feature as the most important aspect that they consider when buying an electric vehicle. The overarching findings from the customer survey are displayed in appendix 3.

The second section of the questionnaire was directed towards evaluating the Italian citizens' expectations on the Green Tech's vehicle. They have been asked to indicate figures regarding speed, driving range, recharging time and price in order for them to be suitable for their daily life. According to the median value, the speed that potential customers would want the vehicle to go at is 60 km/h, even though the mean value indicates a slightly higher number. In terms of driving range, the distance that citizens would want the vehicle to cover, in order to fulfill their daily needs, is around 90 km if looking at the median, and 123 if looking at the means. Concerning the recharging time, potential customers would want to be able to recharge the vehicle in 3 hours according to the median and 5 hours and 30 minutes according to the mean. With regard to price, customers would be willing to pay 5.000 euro for the Green Tech's electric vehicle according to the median and a slightly higher price according to the mean.

4.2.4.2. Focus group session

All the considerations below have been made by the members taking part in the focus group when they have been asked about their opinions on the Green Tech's product. The session was not just focused on gathering the customers' preferences but it demanded a certain commitment from the participants to the discussion in order to display and exhibit additional perspectives on the possible commercialization strategies for the company. Regarding the specifics of the vehicles, all the participants agreed that the maximum speed of the vehicle is

more than acceptable due to the fact that it is a vehicle that is drivable in the city. The driving range was expected to be longer in order to fulfill their daily needs. Although 60 km has been deemed to be enough for smaller urban areas, it has been judged to be quite limited if considering larger cities such as Milan and Rome. The recharging time has been deemed adequate, whereas about the price there have been diverging considerations. Some respondents argued that the target price is appropriate since it is comparable with the average price of a scooter. Thereby, even though the Green Tech's vehicle is creating a value proposition that is higher than a regular scooter, the price can be very competitive on the market. On the other hand, some argued that, from a marketing standpoint, the price might be too low. This will provide an image of poor quality and low reliability in the eyes of the potential customers.

End-consumers that have been identified as potential customers belong to upper middle social class, highly educated, working in offices in downtown. Citizens that may be interested in buying this new vehicle are those who have business activities in downtown or at least related to the downtown areas. Environmental awareness is not a leverage that Green Tech can depend upon to create a competitive advantage. People who are buying environmental solutions today are those who necessitate having access to restricted areas of the city. The environmental awareness (even though it is present amongst Italian citizens) is not a strong driver in the buying behavior. Also because there is a common belief that, even though electric vehicles do not pollute directly, they do pollute indirectly because the creation of electricity in Italy is produced through carbon fossil energy sources. Although the end-consumers may be a source of income for Green Tech, the focus group agreed on the fact that it may be difficult to reach out to them because of the dimension of the vehicle, which makes it cumbersome for parking possibilities in the narrow streets of the old towns.

The possible applications of Green Tech's vehicle have been identified to be in market niches. Delivery in downtown areas and all activities concerning transportation in the old-town centers were considered to be the most likely potential applications. Post delivery as well as transportation solutions for tourists and hotels' customers can also be sifted out as potential niches. Taxi applications have not been considered viable because of the limited driving range with a charge.

5. ANALYSIS

Based on the empirical and theoretical findings, this chapter draws managerial implications for the current research.

The overall analysis of the paper will be carried out by looking at the data that has been retrieved in the empirical section. The managerial model proposed in this paper will constitute the overarching guideline for the undertaking of the analysis. Particularly, the interaction between the external and internal forces will be the focus of the underlying analytical section. The inquiry will be guided by the ten factors of success by Cooper and Kleinschmidt (1987), which will lead to an evaluation of the company's potentials as related to the market research. The process will also entail an assessment of the market attractiveness, which will be performed through the utilization of the framework by Cavusgil (2003), and an appraisal of the entry mode that is best suitable for Green Tech, which will be carried out by making use of the framework by Root (1998). The former managerial model (Cavusgil, 2003) will be integrated in the proficiency of predevelopment activities factor that, according to the Cooper and Kleinschmidt (1987), entails an assessment of the attractiveness of the market from a macro level. Whereas, the latter model proposed by Root (1998) will be included in the Proficiency of market related activities factor, which is associated with the commercialization activities concerning the market entry and marketing operations (Cooper & Kleinschmidt, 1987). The overarching analytical process will then be outlined as it follows:

- An assessment of all the success factors by Cooper and Kleinschmidt (1987) as they apply to both company and market data.
- Assessment of the attractiveness of the Italian market on a macro-level, as compared to the other countries that have been taken into consideration in the empirical section. The data which has been gathered in the first stage of the market research will be processed into the framework by Cavusgil (2003). The weights and the dimensions will be gauged by the authors in order to make the process suitable for Green Tech's product.
- An assessment of the entry mode strategies (Root, 1998)

The undertaking above will provide adequate managerial implications to assess whether or not to enter the Italian market, how to enter it and what elements will be needed in order to enter it successfully.

5.1. Proficiency of predevelopment activities

In this paragraph findings from the market research will be presented along with a line of reasoning for the choice of foreign target market.

As argued by Cooper and Kleinschmidt (1987), all the activities that occur prior to product development are the most critical steps of the new product process, entailing up-front activities such as initial screening, preliminary market assessment, market studies, and definition of market needs. As prior arguments elucidate, Green Tech is planning to enter a market in between the two saturated industries of motorbikes and cars. An electric vehicle that could fulfill the needs of the vast majority of the daily transportation usage, with regards to range is now under development. Although this vehicle may succeed in attracting the end consumers, the initiation of the project has not been grounded on any of the elements that, according to Cooper and Kleinschmidt (1987), have an essential impact on the project

success. For this reason a predominant part of this paper has been allocated to the execution of a market research, performed in an attempt to provide grounded arguments for the choice of target market. In mutual agreement with the decision makers at Green Tech, the Italian territory was chosen as the target research.

In the first stage of the market research i.e. the preliminary market assessment, six countries – Italy, Germany, France, Spain, the United Kingdom, and Sweden – have been taken into consideration. The countries, except for Sweden, are the largest European countries in terms of GDP contribution. The Swedish market was included as it is the domestic market of Green Tech, but also based on its importance for future sales. The model proposed by Cavusgil et al. (2003) has been utilized to assess the attractiveness of the Italian market in an objective manner, as opposed to the other potential target markets. Seven macro dimensions, which are deemed most essential both by Green Tech and the authors have been considered (table 21). Each dimension comprises several sub-factors that represent the components of the preliminary market assessment (Cavusgil, 1985), and are the dynamics upon which the assessment has been carried out. Each country was assigned a value on a scale from 1 to 6 – 6 being the highest and 1 being the lowest – based on its result for each sub-factor. The scores were subsequently weighed in terms of importance in accordance with Green Techs prioritization and finally a scaled final value was calculated (Cavusgil et. al., 2003). The results were expressed on a scale from 1 to 100 for each country (Appendix 2). The final country ranking is displayed in table 22. This target market assessment is argued to be in accordance with the findings from Brouthers and Nakos (2005) who argue that the more systematic a firm's international market selection is, the better the firm will perform. The result of the market research is deemed to reduce uncertainty, pinpoint solutions, and determine an appropriate market strategy for Green Tech.

The findings from the market research illustrate that the Italian market is the least attractive market, considering the seven weighed dimensions (table 21). Multiple explanations for this result can be drawn from the market research. Market intensity and market purchasing power have been considered the most important dimensions, consequently assigned the highest weights. Considering these two dimensions, Italy scored lowest in both of these crucial dimension.

With regards to market intensity, Italy shows the lowest percentage of urban population. However, although a lower portion of the Italian population is living in the inner cities, the number of people in the largest cities amounted by 2009 to 41.1 million, making Italy's urban areas the fourth most populous in the European Union. Italy scored low due to the low percentage of inhabitants in the cities, however this score can be misinterpreted as the urban population of Italy is more than four times as large as that of Sweden. Even so, Sweden scored 5 on percentage of urban population whereas Italy scored 1. Moreover, of all the concerned countries Italy, together with the U.K. displayed a GDP per capita decline of -5%, respectively, -6%, both scoring lower than the overall European Union and the Eurozone countries aggregated annual growth. As for the level of development, expressed in GDP per capita, that primarily is driven by productivity, these figures indicate that Italy by 2009 was facing a period of declining production of goods and services.

Table 21

Dimension	Weight	Measures
Market size	2/25	<i>Population</i>
		<i>Urban population</i>
		<i>Rural population</i>
Market intensity	6/25	<i>% of urban population</i>
		<i>Level of development GDP/capita</i>
		<i>Economic growth (GNI/capita)</i>
Market purchasing capacity	5/25	<i>Per capita income</i>
		<i>Disposable income</i>
		<i>Income share held by highest 20%</i>
		<i>Inflation</i>
Role of foreign trade	2/25	<i>Import</i>
		<i>Balance of payment</i>
Education	3/25	<i>Literacy rate (tertiary education)</i>
		<i>Product significant demographics</i>
Market infrastructure	5/25	<i>Shipping</i>
		<i>Physical distribution</i>
Environment	2/25	<i>Climate</i>
		<i>Natural resources</i>

When considering Italy's market purchasing power, the general level of prices, measured by the inflation displayed a percentage increase of 0.8%, highest of all the concerned countries, indicating that the purchasing power of customers was weakened. Furthermore, Italy displayed poor results on each of the sub-measures within this dimension, except for the income share held by the highest 20%. The Percentage share of income is the share that accrues to certain subgroups of the population. It is shown that 42% of the income share is held by 20% of the wealthiest part of the population. The indication is that the wealthiest half of the population is representative.

Although Italy demonstrates poor results in the macro analysis, primarily on the vital dimensions, the continuing stages of the Cavusgil framework (1985) i.e. industry market potential, and company's sales potential, incorporating the customer focus group and customer survey, illustrate a different scenario. The findings present a promising outlook for Green Tech for several reasons, partially because of the acceptance towards electric vehicles, the high density of scooters and the no-traffic zones in the inner cities. Hence, solely relying on the preliminary screening would provide a deceptive target market assessment. These findings will be further elaborated on in the subsequent paragraph.

The preliminary market screening suggests that the United Kingdom is the most preferable target country, followed by Germany and France. Hence, even though the purpose of this paper is deemed to thoroughly examine the Italian market potential, the results indicate that there are other markets that may offer more beneficial conditions for Green Tech from a macro perspective.

Table 22

	Market size	Market intensity	Market purchasing capacity	Role of foreign trade	Education	Market infrastructure	Environment	Overall weighted market potential
	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank
Germany	1	4	3	1	5	1	2	2
France	2	3	4	2	4	2	3	3
United Kingdom	3	2	1	3	1	2	4	1
Italy	3	6	6	5	6	4	1	6
Spain	4	5	5	4	2	3	2	5
Sweden	5	1	2	1	3	1	5	4

Management recommendations:

As the preliminary market assessment displays, a firm may jeopardize its future operations if the choice of target market is based on ad hoc, non-rational decisions. A systematic market survey can discern more attractive markets from others. However as argued, basing the choice of target market on the preliminary market screening will most likely result in a misinterpreted market assessment. The preliminary market assessment has to be substantiated, hence, the second and third stage of the Cavusgil (1985) framework is vital in order to make grounded judgments of the attractiveness of a market and sift out potential niches for the organization.

5.2. Protocol

Cooper and Kleinschmidt (1987) define Protocol as the layout of the project or product strategy prior to the product or project development and argue that it has a positive correlation with the successful commercialization of the product. Green Tech was originally established as a result of changing environmental conditions and as a reaction to the high consumption of combustion engine vehicles. The value proposition of the start-up resides in a vision entailing to seek out a market opportunity in between the two-wheeled scooter and the four-wheeled automobiles by initiating the development of a new innovative electric transportation solution. This opportunity is supported by the reasoning of Porter (1980) who argues that new start-up firms should aim for industries in disequilibrium, such as the electric vehicle industry. Green Tech is determined to target this market niche and provide a three-wheeled electric vehicle that can fulfill the transportation need for more than 90% of the daily usage, in terms of range. The vehicle is characterized by design and simplicity i.e. no unnecessary details that will increase the price or weight, but a product that draws the attention of the customers. Hence, the product concept and its target industry in terms of market position are fairly well defined by Green Tech. However, what is less defined is the target niche in which the vehicle may have the best possibility to succeed. Furthermore the customer segment is not well defined, nor have the customer's needs been considered to a reasonable extent in order to provide an appealing product to the end-consumers. Consequently, Green Tech has discovered an opportunity to enter the saturated automotive industry, but they have not based their vision on a demand from the market, but rather on an opportunity to create a market demand. This action is in congruence with the arguments for disruptive innovation. Within this topic of research it is argued that, although customers are important, they do not constitute the core values upon which the competitive advantage of the organization needs to be built. This is because a disruptive innovation, not necessarily, fulfills old customers' needs but it rather triggers new ones. Thus, relying on customer input and adjusting the product based on these customers requirements would reflect what customers want today, but not necessary what they want tomorrow (Christensen, 1997). However, as it will be argued in the product advantage section, the product under inquiry does not qualify as a disruptive innovation according to the measurements provided by Rice et al. (1998). Therefore it should be considered a shortcoming that the target country, customer segment, and the customer demand were not initially assessed.

Accordingly, Green Tech displays a fairly inconsistent strategy. As argued by Chandler and Hawks (2002) an appraisal of the market's characteristics needs to be carried out in order to sift out the opportunities and challenges that start-ups on the verge of entering an industry may encounter. The market research executed in this paper is deemed to be utilized as a means for assessing the potential of the Italian market. Although the findings of the market research indicate that the Italian market, from a macro perspective, is less favorable than the other concerned countries, several micro factors are considered to make the Italian territory a

favorable market despite its fairly poor ranking. The most prominent factors are the vast acceptance of the electric vehicle industry, and the widespread usage of scooters, whose users are considered to be potential future customers.

Management recommendations:

To enable for a successful commercialization strategy adoption Green Tech has to sift out a market niche i.e. find the target customers segment, and possibly customize the product according to the customers' needs. The market research displays that the Italian market may be a suitable market for a product introduction for several reasons such as acceptance for electric vehicles and long practice of scooters. However, the means for how to appeal to these customers should be the core dimension upon which Green Tech's strategy needs to be outlined.

5.3. Proficiency of technological activities

As argued by Cooper and Kleinschmidt (1987), this factor highlights management of the R&D phase, the product development process, and the production *per se*. When considering Green Tech it is unmistakable that they can be deemed proficient in their technological activities. The company consists of a range of people with long experience from the automotive industry and with extensive experience from product development in various industries. Hence, the appropriate resources are argued to be in place so as to successfully manage the technological activities. Regarding the preliminary technical assessment, it was found throughout the interviews that all the elements of the vehicle were carefully well thought-out in order to fulfill the overall vision of the company, which is based on providing a lean, clean and safe vehicle. The most distinct evidence was the choice of using a sandwich composite body in order to get an as light vehicle as possible. Weight was argued to be one of the major factors for high consumption, hence, by reducing the weight, Green Tech could extend the driving range of the vehicle. As the company is still in the development phase the choice of electric components has not yet been decided, however Green Tech has established a collaborative partnership with a Taiwanese electric scooter company, which is manufacturing its own components. The partnership enables Green Tech to test the efficiency and reliability of the system i.e. electric motors, brakes, and instrument panel etc. in their vehicle. Furthermore, as they chose to utilize a low weight, by engaging in a boat building technique with a sandwich composite body, they could rely on a smaller battery but still extract sufficient efficiency from the electric motors.

Considering the product development process, Green Tech demonstrates a structured process where they just recently entered a stage in which the final design is being delineated. The work, up until this stage, has been characterized by product feature specific evaluations such as test of electric motor, test of breaks, test of suspension, and evaluation of design. The reason for this in-house testing has been to transfer the insights onto the new and refined final version of the vehicle. Although the product development phase is proficiently performed and carefully monitored, criticism can be directed to Green Tech for not having performed sufficient up-front customer and market research. Even though an opportunity to penetrate a new market niche is discovered, the success of the project is in the end judged on whether the product appeals to the customers or not. However, the market research and customer feedback gathered in this inquiry indicate that there may be a promising future for electric vehicle on the Italian market.

Finally, the internal interviews revealed that the choice of production is not yet decided. The staged process (figure 4) displays that the production will be carried out in three phases i.e. small scale production of 10 vehicles, test production of 200 pieces, and finally full scale

production. However it is not described how this is planned to be carried out. It is evident then that the choice of production will depend of the choice of partnerships with manufacturing firms that, in the long run, will result into an essential issue that still needs to be addressed. The interviews witnessed that franchising agreements have been considered a possible commercialization solution with the intention to allocate the production to an external partner, the franchisee, to whom the components will be sent from the head office located in Sweden.

Management recommendations

From a technological standpoint the franchising strategy that Green Tech intends to undertake can be considered a viable option considering the simplicity of the overall mounting process. The franchisee would then be able to assemble the product without consistent supervision of the technological process. The sustainability of this type of commercialization strategy, from a pure technological standpoint, can thereby be deemed high. However, when considering the result of the interviews, finding a franchisee that is willing to invest in a manufacturing site, invest in molding machineries, and employ a sales organization does not appear feasible. Hence, establishing a franchise strategy may not be a viable short-term option. Regarding the technological activities, as mentioned in the section above, Green Tech is not entirely independent. The electric motor and the battery pack are, in fact, supplied by an external Taiwanese scooter manufacturer, which, at the moment, can be assessed as a crucial partner for the undertaking of the overarching technological activities. Although the Asian partner is involved in the Green Tech's project as an external collaborator, a need to work under a partnership agreement with the Taiwanese company may be needed in order to assure supplies of technologies for the moment when the mass production will be up and running.

5.4. Product advantage

As Cooper (1984) argues, product advantage is a crucial driver for the profitability of an organization. This factor is deemed as the ability to match customers' needs by providing them with a product that presents elements of superiority in terms of quality, design and value proposition (Bennett & Cooper, 1984; Cooper, 1984). Through the market research and, particularly, the customer survey and group focus, numerous constituents regarding the Green Tech product's advantage have been identified for the Italian market. As it has been outlined in the empirical section, the electric vehicle industry is still considered a niche market in the overarching automotive industry due to the limited applications that have been witnessed so far. The belief that this situation might change in the upcoming years is strongly spread out throughout the overall population, however the need to engage in environmental solutions for the automotive industry in Italy is still feeble. Thus the foreseeable future for electric vehicles is still deemed to be confined within certain market niches in the Italian territory. The environmental awareness of the Italian population can thereby not be considered the only factor upon which Green Tech should compete on in order to create a competitive advantage and provide a sustainable value proposition in the eyes of the customers.

Specifically, Green Tech product has been associated as an alternative to two-wheeler solutions because of the driving range and the potential applications that it could provide on the market. Although it has been ascertained that the vehicle under inquiry offers unique benefits to customers as compared to scooter, such as the higher passenger capacity, the coverage for weather conditions and the lower maintenance costs due to the fact that it is powered by electricity, these features are not valued by end-consumers as highly as the driving range and the design. Since it is a new concept of vehicle and historically the Italian population has been conservative, potential customers are concerned to act as prime movers in the market unless the product is in fashion. Additionally, Green Tech's product is planned to

be sold for a price that is twice as expensive as conventional scooters with limitations concerning the driving range and parking capabilities. These factors can consequently be considered disadvantages for the company because of the increased financial commitment of the customers and the other hindrances that the vehicle entails. The simplistic values that Green Tech is planning to compete on may not resemble the cultural buying behaviors on the Italian territory. Potential customers, in fact, would be willing to pay a higher price for a product that is more refined. If, on the other hand, the product has the sole purpose of taking people from a place A to a place B, the value proposition of Green Tech would not be as competitive as conventional scooters on the Italian market due to the higher price of the electric vehicle, which, from a marketing standpoint, decreases the overall value of the product (Aaker, 2007). Furthermore, the intellectual property protecting measurements that Green Tech is filing are not assessed to provide a competitive advantage over upcoming or existing competitors. Refinements and adjustments in terms of design and, possibly, in terms of driving range would then be needed in order to reach out to a customer base constituted by the end-consumers.

An agreeable consensus upon the potential application of the product has instead been found across all the interviews performed for the market research and the focus group. As explained in the empirical section, a considerable majority of the largest Italian cities present a downtown area that is limited to traffic circulation. These districts are thereby open solely to pedestrians, bikes and environmental vehicles such as the electric ones. Hence, this restriction imposed by the governmental institution can be leveraged by Green Tech as a competitive advantage over the other means of transportation. Particularly, businesses such as stores and travel agencies can find in Green Tech vehicles a resource that can be utilized to improve their daily operations. Deliveries are, at the moment, being made primarily in the early morning before office hours creating traffic congestion that may, sometimes, result in shoddy service. The electric vehicle developed by Green Tech can thereby solve these structural problems by offering additional possibilities for delivery companies that may be able to spread out their supplying operations throughout the whole daytime, thereby providing better service to customers while managing their work-force in a more homogenous manner. A further advantage of the electric vehicle can be detected in the increasing needs for municipalities and tourist agencies to expand the traffic circulation plan in the inner-city. Momentarily the moving capabilities, provided by the municipality to citizens and tourists, do not go beyond public transportations, which have not been deemed properly suitable for the numbers of people that require moving around the city. Green Tech's product can thereby create supplementary opportunities for municipalities, travel agencies and hotels that aim to provide a sustainable means of transportations across the downtown areas of the city, in line with the governmental regulations.

Although the values upon which Green Tech is planning to compete do not seem to constitute the main drivers for success in the Italian territory, it is not excludable that end-consumers are still not aware of the problems that need to be fulfilled. According to Christensen (1997), in fact, a disruptive innovation that fulfills old needs and triggers new ones is not being accepted instantly by end-users. Thus customers' feedbacks and customers' opinions should not be considered as important as those that are referred to incremental innovations. Additional arguments, regarding whether or not the electric vehicles can be considered a disruptive technology, are provided by Christensen (1997). He noticed that the trajectory of technological improvement of the electric vehicles is growing with a faster pace than the trajectory of performance improvement demanded on the market. Thereby, according to the author, the electric-powered industry may be considered a disruptive innovation. However, Christensen (1997) also argues that, although the technology is disruptive because of future

projections, the products cannot be considered disruptive up until the moment when they are able to be competitive in the mainstream automotive market. Thus, if the pace of improvement of the technology will be the same, the electric vehicle industry will be categorized as disruptive technology, since it will be able to compete with the conventional combustion engines. However, for the time being, the electrified vehicles are not a disruptive technology because of their lower performances as compared to the demand in the mainstream market (Christensen, 1997). With regards to the product under inquiry and referring to the assessment ratios by Rice et al. (1998) it can be stated that Green Tech's vehicle does not present five to ten times improvement in performance as compared to existing products nor does it provide completely novel performance on the market as compared to the refined Pasquali, the less refined Asian and the conventional combustion vehicles. From these two particular standpoints then the product appears to fall into the incremental innovation category. It is however unfeasible to assess whether the three-wheeler presents 30% to 50% reduction in production cost due to the fact that the production process is not yet in place and the estimates are still undefined. However it may be deemed unlikely to witness a reduction by 30% in production cost at Green Tech as compared to the production cost of regular combustion engine vehicle, that are already on the market. Thereby, it can be concluded that Green Tech is entering a potential disruptive industry with a sustainable innovative product.

Management recommendations:

From the indications that have been retrieved from the market study, customers' needs should be the core dimension around which Green Tech should build its competitive advantage. Furthermore, as tested by Cooper and Kleinschmidt (1987), product advantage is deemed one of the factors that have the highest correlation with product success. Thereby, a proficiency in the operations regarding the company's product is required in order to create a competitive advantage that is considered one of the main drivers for success.

5.5. Marketing synergy

According to Cooper and Kleinschmidt (1986) a good fit between the marketing, sales force, and distribution needs of the product and the firm's marketing resources and skills can improve the possibility of successfulness of a new product. Although at the actual state of the operations Green Tech is not engaged in marketing practices, numerous elements need to be thought out before starting the commercialization process. Particularly, marketing operations, sales force and distribution channels are required to be aligned with the customer segment that Green Tech plans to target. As it has been noticed throughout the interviews with the industry experts, people that might be interested in the electric vehicle industry very likely belong to an upper-middle class, with a high literacy rate and a greater purchasing power than the average citizens. Thereby, due to the low price sensitivity of this customer segment, pricing, promotion and distribution strategies should be delineated accordingly. Moreover, as outlined in the group focus sessions, marketing might be considered one of the crucial factors upon which the company should base its competitive advantage. The price and especially the promotional strategy have been deemed to be the most important factors for the successfulness of the vehicle on the Italian market. When considering end-consumers, in fact, the target price that Green Tech is planning to sell the product for should be aligned with their preferences. It has also been noticed that simplicity, which is one of the core values of the vehicle, is not an appealing characteristic for the wealthy target segment that might be interested in purchasing the vehicle. Refinements in terms of design, along with the customers' preferences, can thereby be rewarded by a higher selling price. If, on the other hand, the vehicle displays too simplistic features and it does not differentiate itself from the

competitors' offerings, a comparison with existing scooters would instantly be made and the possibility that it will not be accepted by end-consumers may consistently increase due to the higher price. Thereby, opportunities of customization, such as Smart and Mini are offering, should be provided to the end consumers in order to create a unique value proposition for each individual, attract a larger customer base and differentiate the price strategy.

As pointed out by Green Tech itself, in a subsequent phase of the product development, additional human resources are required to be acquired. These will be primarily constituents of the marketing and sales personnel due to the lack of such resources amongst the current employees and collaborators. Especially, when assessing the personnel background and expertise, missing competences in terms of marketing and promotional skills can be detected.

Management recommendations:

In order to maximize the value proposition of a certain product in the eyes of the customers, a marketing strategy that combines elements of the market preferences and the internal capabilities of the firm should be outlined (Aaker, 2007). The marketing capabilities that are held by Green Tech at the moment present some voids that need to be filled. Thereby, additional employees, such as marketing managers, should be hired by the start-up in order to define beforehand the most suitable customer segments in each country that the company is planning to enter. This would then trigger repercussions on both promotions and distribution strategies that, in turn, might have an incidence on product development activities.

5.6. Technological synergy

Cooper and Kleinschmidt (1987) argue that the impact of technological synergy closely parallels that of marketing synergy. It was further argued that a good fit between the external opportunities and the internal technological resources increases the likelihood of new product success. An overall synergy between the management team, the market opportunities, and the resources at the company's disposal is found to be an important determinant for success (Peters & Waterman, 1982).

Both the customer survey and the customer focus group indicated that the Italian customers consider product design as one of the main factors that would determine a potential purchase of an electric vehicle. In the customers survey product design scored among the highest of all the concerned factors (median=6/7, $\sigma=1.62$). Apart from design, reliability was considered as the most important factor determining a purchase of an electric vehicle (median=7/7, $\sigma=0.89$), Appendix 3. These measures point out that the factors that are deemed to be the most important can also be considered the ones that influence the buying behavior of the Italian customer. The findings will have important implications on the product development activities at Green Tech.

Green Tech displays a diverse set of skills and resources with regard to product development. As the number of employees is limited, Green Tech relies on their extensive network that brings in the necessary resources needed for each step of the development process. By doing so, they can utilize the proper expertise for each specific assignment. Since technological synergy implies a good fit between the market needs and the firm's internal capabilities one can argue that Green Tech has the proper resources in place so as to respond the market demand. Consequently, the question is rather if they are willing to adjust the product to the customers' needs or if they will stick to their initial plan, to provide standard, off the shelf products.

As previously argued, the Italian customers valued design and reliability as two of the most vital factors when deciding to purchase an electrical vehicle. In the focus group session it was discussed that the product would increase in attractiveness if possibilities of customization were provided. It was argued that the customers would find the product more appealing if Green Tech would provide the opportunity for personal adjustments. This option would place the company in a position where the financial strategy would have to be reconsidered, as customization would increase the production costs. However, if a change in demand were to occur, the internal interviews have revealed that Green Tech would have the right skills and resources to respond to this alteration and thereby attract the Italian customers. The same line of reasoning goes for reliability. The Italian customers argued that a reliable vehicle would be a necessity for a purchasing decision. Hence, Green Tech should focus on developing a consistent electrical system that is considered reliable in the eyes of the customers.

Management recommendations:

As the Italian customers value design as one of the major factors that would determine a purchase, Green Tech ought to consider whether simplicity is the suitable strategy so as to attract customers, or if the option of customization should be provided. If the latter option is considered too costly a refined version might be a feasible alternative, which should be modified in accordance to the customers' preferences. Along with that it has been detected through the focus group that Italian end-consumers are willing to pay a higher price for a more refined vehicle, which does not imply a mass customization strategy.

5.7. Market potential

According to Abell and Hammond (1979), market characteristics and market attractiveness are important dimensions assisting the resource allocation process for the development of the new product. Factors such as market size, growth rate and market need level are factors that contribute to success. When developing a new product, in fact, target markets should be identified beforehand in order to gather insights and needs that might have to be fulfilled (Cooper & Kleinschmidt, 1986).

As Cooper and Kleinschmidt (1986) states, in order to thoroughly evaluate market size, growth and customers' needs a detailed market research is required to be performed. For this reason this section draws on data retrieved for the second and third stage Cavusgil (1985) framework, corroborated by both customer feedback and group focus session. Even though the Italian electric vehicle industry is still deemed to be confined in a micro market, an assessment of the size, growth and needs of this specific niche should be carried out in order to collect evident estimates on the product's sales potentials. As it has been gathered in the internal interviews, Green Tech's focus of the operations is directed towards the product development process, lacking an emphasis on external dynamics of the market. Although the Swedish start-up has begun its new concept of vehicle because of a market study, the data that was at the disposal of the company was not based on a thorough market analysis. Even though the target markets have been identified by Green Tech on a country basis, the sub-market size, the possible growth potentials and the specific needs have not been sifted out before starting the product development process. This approach is deemed viable when in presence of a disruptive innovation that, according to Christensen (1997), does not need to be based on customers' preferences and market potentials because it generates a new market from scratch within an existing industry. However, as explained previously, the product that is being developed by Green Tech does not appear to be categorized as a disruptive innovation, thereby external factors need to be taken into account as drivers for the product development process and as indicators for product potentials.

Although from a macro analysis Italy has been found to be the least attractive for Green Tech's vehicle, this does not imply a priori that the market does not present advantageous opportunities for the Swedish start-up (Papadopoulos, 1998). Particularly, from the findings of the interviews, it can be detected that the Italian market is extremely attractive for an electric vehicle such as Green Tech's. Primarily this is due to specific needs that Italian citizens require to be fulfilled and to a certain level of acceptance for electric vehicle that is already in place. As outlined in the empirical section, although the infrastructure for environmental transportation solutions is not entirely spread out through the whole territory, numerous cities of the north-central regions have already taken on a policy that encourages electric vehicles adoptions by installing recharging stations across the downtown areas of the major cities. These recharging stations provide free power and free parking spots to end-users. Additionally, since the traffic circulation in the old-town areas is not allowed, Green Tech can leverage this situation and insert its product in a market niche that has not yet been exploited. When considering the reachable market size for Green Tech then, the study can be confined within the downtown areas of cities in the northern-central regions that display a historic inner-town, where the infrastructure for electric vehicles is already in place and where authorities are encouraging the circulation of the environmental alternative. Although the growth of the electric vehicle industry might be slowed down by the decision of the Italian government to provide no incentives for reducing the financial commitment of the end-users, certain tax-exemptions, such as the ownership tax and the reduction by 50% of the insurance premium, which have been considered decisive factors for the customer buying behavior in the focus group session, are still offered to end-users. The potential of the Italian market can thereby be deemed high for the specific Green Tech's vehicle. This declaration can also be related to the fact that Italian people are used, more than any other country in Europe, to driving two-wheelers rather than four wheelers and to the fact that historic city-centers are extensively spread out throughout the territory, which makes the size of the potential market considerably large.

Management recommendations:

Although the macro analysis displays low potentials for the Italian market, it can be noticed that there are still uncontaminated market segments that can be deemed attractive for the product under inquiry. Even though a preliminary screening is fundamental to identify possible target markets, a more thorough analysis of the micro factors and customers' preferences is required in order to sift out certain niches that are still uncontaminated in the automotive industry. Thereby, the United Kingdom, which has resulted in the more attractive country for Green Tech according to the Cavusgil model, does not necessarily constitute the market with the highest potentials amongst the ones considered. A closer interaction with the target market is therefore needed at Green Tech in order to be able take advantage of the market potentials residing in niches and eventually co-create a value proposition process.

5.8. Market competitiveness

Although it has been proven that superiority in terms of quality and innovation over competitors' products is more important than the actual competitiveness on the market, it can be stated that the successfulness of a product is inversely correlated to the degree of competition in the territory (Maidique & Zirger, 1983). As explained by Aaker (2007) the overall competitiveness for a specific product can be broken down into three sub-levels that correspond to the direct competitors, indirect competitors and tertiary or substitute products. When considering the degree of competition for an electric vehicle on the Italian territory, several players belonging to the overarching automotive industry need to be taken into account. Regarding the direct competitors, it has been ascertained by all the interviewees that

the electric vehicle industry is considered a micro-market, still uncontaminated by noteworthy players. Although a small amount of electric vehicles is starting to be present in the downtown areas of the cities, the market share that they comprise is not significant. The Pasquali car, due to its high price, is targeting a limited customer segment, which is constituted of upper-middle class citizens living primarily in the northern regions. Additional Asian electric scooters can be deemed as direct competitors of Green Tech because of the reduced price, however their incidence on the automotive market share is so low as to be deemed unquantifiable. Thereby the level of direct competition is assessed to be close to zero when considering the limited traffic areas in the city.

The second level of competitiveness is represented by those players who belong to the same industry but, for certain specific characteristics, fulfill customers' needs in a diverse mode. These are constituted by the scooter and car industries on the Italian market. When taking into account combustion engine solutions the degree of competition can be deemed extremely high due to the maturity of both two and four wheeled segments. As explained in the empirical section, the undifferentiated growth in the Italian automotive industry is finished, leading to a phenomenon of substitution more than anything else. Furthermore, the saturation of the market has led to a fierce price competition that has resulted in decreasing financial commitments for end-consumers. From an indirect competition standpoint then Green Tech is put against major players such as Piaggio and Aprilia that present a profound knowledge of the market. Additionally, the value proposition provided by combustion engines can be deemed higher than the Green Tech three-wheeler because of lower price, the less problematic driving range, the well-defined design and the extremely branched-out distribution channels, all elements that lead to a higher value, in terms of a greater quality-to-price ratio (Aaker, 2007).

The third level of competition is instead constituted by substitute products that not necessarily belong to the same industry. As relate to Green Tech's vehicle, the tertiary competitors can be identified in public transportation facilities, bikes and pedestrians. Although public means of transportation are deemed to be of higher quality in the Northern regions, the majority of the cities do not provide an efficient infrastructure. A similar statement can be made for the bikes, which are not as widespread as other European countries due to a lack of bike lines around the cities. In terms of pedestrian, it can be noticed that the competition can be deemed very low in the outskirts as opposed the downtown areas of the major cities where the competition represented by walking people is very high. However, as it has been found out through the interviews with the town councilors, solutions in terms of transportation for pedestrians in the inner city are needed. Thereby the overall level of competitiveness on a tertiary level can be considered low.

Management recommendations:

Since the Italian automotive market appears to be highly competitive, an avoidance of the secondary competitors comes into view as the only option for a start-up such as Green Tech. Furthermore, due to the nearly nonexistent direct competition, a sustainable strategy that allows the company to exploit an uncontaminated market niche such as the downtown area may be the most suitable solution for both avoiding competition coming from combustion engine vehicles and providing a further alternative to pedestrians.

5.9. Top management support

Cooper and Kleinschmidt (1987) hypothesized that there was a greater likelihood of success when the top management team supported the product from the development stage throughout the launch process. However, the findings revealed that this factor does not present significant

correlation with product success. Even so, when examining Green Tech it became obvious that the management team was thoroughly committed to the product development process. In the interviews with Green Tech the owner and the major stakeholders strongly expressed their devotion to the project, and the future potential of this new vehicle. However, questions related to the long-term perspective, the market launch phase, received somewhat varying answers. Even though there was no indication of lacking future commitment, the interviews revealed that the future strategy was fairly diffuse. The reason for this can be argued to be the robust commitment to the development phase as an indicator to the fact that the commitment is expressed step-wise, as the project move throughout the process. However, this indication testifies that the long-term strategy is still under construction and thereby undefined. The strong devotion of the management team is also expressed by the fact that all members of the company would be willing to relocate if the international operations would require a closer interaction with foreign partners.

Another signal of the top management commitment to the project is represented by the financial operations of the start-up, which for the greater part of the process has been financed by stockholder contributions. Although it can be assessed that top management support activities are proficient within Green Tech, this factor can be deemed of a lower importance in the correlation with the successfulness of the product. As argued by Cooper and Kleinschmidt (1987), in fact, there is a relatively weak relation between new product success and top management support, showing that, in most of the cases, failure projects had almost as much top management commitment and involvement as did the successes.

Although this factor may be of minor usage as to measure the success potential of Green Tech, commitment is seen as a cornerstone in the new product development. Commitment can be expressed in various forms, both in terms of time and financial resources, and they are both as important for the project process. It can then be concluded that throughout the case study Green Tech was found to be fully committed to the project, both to the ongoing development process and to the future market launch activities. This commitment is considered a necessity as to manage the process from idea to market launch.

Management recommendations:

Although prior inquiries argue that top management support has a minor affect on the product success, commitment in the day-to-day activities is still essential for the product development process. As the project progresses the commitment will play an important role, and as Root (1998) argues, there has to be a control system in place for monitoring the process. This will also have a significant implication depending on the choice of entry mode (Table 23). Depending on the entry strategy, a strong commitment of the management team for the supervision and support for the partner's operations is also expected to be required (Figure 1).

5.10. Proficiency of market related activities

The proficiency of market related activities is one of the factors that present the highest correlation with the successfulness of new product introduction. This dimension comprises all actions that are related to market survey, market potential, promotion and advertizing that should take a predominant part of time before the commercialization strategy is outlined (Cooper & Kleinschmidt, 1987). In this section the various factors that need to be taken into consideration for the actual entry strategy mode are discussed. The outcome deriving from this analysis is then processed in the framework for assessing entry mode strategy proposed by Root (1998), table 23.

As explained in the theoretical section market entry modes are the resulting conclusion of the overall commercialization process that needs to be undertaken by an organization in order to maximize the success of a new product. Even though the market potentials, the customer segments and the factors to compete on have been assessed in the previous phases, a well thought-out entry mode strategy might provide a competitive advantage to the company. Although the resource-based capabilities can be deemed as one of the core dimensions upon which the entry strategy decisions need to be based, the characteristics of the market that a company is planning to enter are as important (Root, 1998). According to the framework (table 23) outlined by Root (1998) then external dynamics of the foreign country are required to be evaluated in conjunction with the internal dynamics of the home country and the internal characteristics of the firm.

Table 23

	Generally Favors:				
	Indirect and Agent/ Distributor Exporting	Licensing	Branch/ Subsidiary exporting	Equity investment/ product	Service contracts
External Factors (Foreign country):					
Low sales potential	X (CM)	X (CM)			
High sales potential			X	X	
Atomistic competition	X (CM)		X (CM)		
Oligopolistic competition				X	
Poor marketing infrastructure			X		
Good marketing infrastructure	X (CM)				
Low production cost				X	
High production cost	X (CM)		X (CM)		
Restrictive import policies		X		X	X
Liberal import policies	X (CM)		X (CM)		
Restrictive investment policies	X	X	X		X
Liberal investment policies				X	
Small geographical distance	X (CM)		X (CM)		
Great geographical distance		X		X	X
Dynamic economy				X	
Stagnant economy	X (CM)	X (CM)			X (CM)
Restrictive exchange controls	X	X			X
Liberal exchange controls				X	
Small culture distance			X (CM)	X (CM)	
Great culture distance	X	X			X
Low political risk			X (CM)	X (CM)	
High political risk	X	X			X
External factors (Home country):					
Large market				X	
Small market	X (CM)		X (CM)		
Atomistic competition	X (CM)		X (CM)		
Oligopolistic competition				X	
Low production cost	X		X		
High production cost		X (CM)		X (CM)	X (CM)
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		X (CM)			

products					
Low product adaptation	X (CM)				
High product adaptation		X	X	X	
Limited resources	X (CM)	X (CM)			
Substantial resources			X	X	
Low commitment	X	X			X
High commitment			X (CM)	X (CM)	

Specifically, as related to the Italian market, all the factors that are assessed in the framework are derived from the data that has been gathered throughout the market research on both a macro and a micro level. The outcome of the underlying evaluation would result in a straightforward indication of the most suitable entry strategy for the specific product in the Italian market (table 23). A list of the various factors is provided below with an explanation of the rationale of the decisions:

External factors (Foreign country)

Sales potential: The sale potential is the expected sales of a product in a given market for a specified period. The share of the total market that a firm can reasonably expect to attain in a given market. Based on the findings from the market research, there is an indication that the potential sales are confined primarily within business customers that are engaged in downtown activities. Establishing business-to-business solutions primarily in the downtown areas of the largest cities appears then the most viable option for Green Tech, since the product, according to findings from the focus group and the customer survey, may find a hard time appealing to the end customers if the designs is not refined. The customer base would thereby be limited within businesses that operate in downtown areas. Although it has been assessed in the previous section that market potential can be deemed high on an absolute level, the sales potential of Green Tech can be considered low on a relative level, since the target customer base initially was constituted by the overall Italian population.

Competition: As explained previously, the competition in the electric vehicle industry is closed to zero. However, when considering the three levels of competitors it can be noticed that the overall automotive industry constitutes an atomistic competition due to the maturity and saturation of the market.

Marketing infrastructure: Italy constitutes the fourth largest European country in terms of overall level of GDP. In terms of communication infrastructure it can be noted that Italy scored higher than all the other countries concerned in the analysis. Although a distinction between northern and southern regions needs to be pointed out, the overall level of marketing infrastructure can be considered quite elevated.

Production cost: A good indicator of the production cost can be found in the GDP per capita because it exemplifies both the wealth and cost of labor in a country. Although Sweden presents a higher GDP per capita than Italy, the gap between the two countries is not noteworthy in order to assess that the production cost is low in Italy. Thereby production cost in the Italian territory can be deemed high.

Import policies:	Since Italy is part of the European community the import policies across EU are liberal.
Investment policies:	Also, because of the liberalization, investments in Italy can freely be made by foreign entities. However, foreign firms are subjected to the Italian tax regulation.
Geographical distance:	Although Italy is located in the south of Europe and Sweden in the north, the distance between the two countries is considered low due to the fact that they both belong to the EU. Flight Connectivity Index and Shipping linear coefficient index are also quite high as compared to developing countries, thereby the connection between the countries is deemed elevated.
Economy:	Italy has not grown in the past five years, thereby the economy can be deemed stagnant.
Exchange controls:	There are no relevant banning policies for the trading of foreign currency or local currency. Thereby the exchange control can be deemed liberal.
Exchange rate:	During the last year there has been a depreciation of the Euro against the Swedish Krona, however, since it is not yet known when Green Tech will enter the Italian market, this factor would not be considered for the analysis at this stage of the operations.
Culture:	Cultural differences are assessed to be low. Although languages, political and social environment have historically been diverse, the constraints and barriers between the two countries are nonexistent. Across the interviews with automotive experts and especially in the customer interaction performed in the field research, it has been noted how Italy is well receptive for the Scandinavian countries.
Political risk:	Although, there have been frequent political turnovers in the Italian parliament, the risk of default for the country can be considered low as compared to other economies across the globe.

External factors (Home country)

Market Size:	The Swedish market can be considered a small market as compared to the Italian market, both in terms of population and import and export activities.
Competition:	As well as the Italian market, the Swedish automotive industry constitutes an atomistic competition for Green Tech.
Product cost:	The Swedish GDP per capita is the highest amongst the six countries that have been taken into consideration. Thus, the production cost is assessed to be high.

Export promotion: The Swedish economy is extremely contingent on export policies. This can be noted by the fact that 49% of the overall GDP comes from exporting activities. Thereby the judgment for export promotion is assessed to be strong.

Internal factors (Green Tech)

Type of product: Amongst all the possible options, the product, due to the elevated R&D capabilities that are required, is considered to be a technology-intense product. The internal interviews with the management team have shown how the core resource-based capabilities are focused on the development and refinement of the technology. This has also been confirmed by the amount of resources that, both from a financial and consultancy standpoint, have been needed and will be needed by the firm solely for the development of the whole technology.

Product adaptation: Although minor modifications in accordance with the customers' responses and feedbacks will be brought onto the vehicle, the management team appears not to be willing to adapt the vehicles in order to meet the needs of specific customers. The product adaptation is thereby considered low.

Limited resources: What stood out from the internal interviews is that both financially and from a human resource point of view, the company displays limited resources at its disposal.

Commitment: The commitment of the management team is considered to be extremely high. Their attentiveness, willingness and time allocation is entirely dedicated to the project. From the interviews it has also been noted that their enthusiasm for the jobs is extremely elevated and their motivation to travel throughout the globe, in order to take advantage of their extensive network, is prominent.

According to Root (1998) then, the resulting outcome of the assessment of the factors, provided in the table 23, indicates the most viable entry mode on a market for a specific product. By looking at the ranking that each dimension has scored, it can be concluded that non-equity mode is the most suitable entry strategy for Green Tech in the Italian market. When processing the data in the framework exporting through indirect agent or distributor appears to be the most feasible predilection scoring twelve preferences, however, as exemplified by Root (1998), licensing, branch or subsidiary exporting and service contract are grouped in the same category. Thereby, the aggregated value of those entry strategies results in 16 preferences, making it the preferable option amongst the ones listed in the framework. Along this line of reasoning then, the choice of Green Tech to undertake a franchising strategy for their international expansion can be considered appropriate. This approach can also be evaluated as the most suitable method for supervision activities that non-equity mode entails (Root, 1998).

Management recommendations:

As outlined by Green Tech in the internal interviews, a non-equity mode is argued to be the correct entry strategy for the Italian market. This line of reasoning is aligned with the findings by Burgel and Murray (2000), who argued that the preferred mode of entry for the majority of technology-based start up firms is characterized by relatively low resource commitments and is directed towards license agreements rather than foreign production. Although the franchising strategy that Green Tech is planning to embark upon appears to be a suitable entry mode for the international markets, such as Italy, some considerations should be made. Franchising operations imply that an external entrepreneur (the franchisee) is willing to make a considerable up-front investment in the business so as to guarantee the exclusive license to commercialize the product for a certain period of time and in a certain geographic area (Root, 1998). However, closing a deal with a franchisee that, according to internal interviews consists of substantial equity investments, might consequently be difficult due to the lack of track record of Green Tech. As addressed in the internal interviews Green Tech will initiate its commercial operations on the domestic Swedish market. If the market realization is found successful Green Tech might, after a certain amount of time and if the business is economically sustainable, decide to enter the Italian market through franchising. This scenario would provide adequate time to develop a track record which plausibly could result in the possibility to tie up franchising agreements with potential foreign investors. However, even so, Green Tech still endangers the risk of failure due to the uncertainty of whether a possible Swedish market success is equivalent to an Italian. Hence, it is argued that a franchise entry strategy may be a viable long-term option, however, it is not regarded as a feasible choice for a primary market entry strategy.

Thus, two alternative options are instead assessed as more preferable for an Italian market introduction, namely licensing agreement or direct exporting through an agent or distributor. These options would entail that Green Tech ties partnerships with established Italian industry actors. It would further make Burgel and Murray's (2000) reasoning valid as they argue that start-up firms with limited record of achievements should preferably consider collaboration in order to exploit the track record and reputation from established foreign market intermediaries, since the risk of reluctance from customers to rely on small, untested, foreign suppliers is high. There is an important distinction between the two alternative entry suggestions that require further discussion. A direct agent or distributor agreement implies that the company utilizes a target country middleman to commercialize the product. This implies that the production is allocated outside the target country and the product is consequentially transferred into it. Licensing on the other hand, allows a foreign market entity the right to utilize the companies industrial property i.e. its patents, know-how, trademark etc. in return for a royalty, making this strategy a more sophisticated alternative. Both options entail non-equity investments and are assessed appropriate for an Italian market introduction. However as Green Tech is keen to be established as an international actor on a long-term horizon, the more appropriate entry mode is argued to be licensing. It is also worth mentioning that a close interaction with the foreign partner ought to be set up in order to frequently supervise the licensee's activities (Root, 1998). This would make Green Tech an active licensor, involved in its partners' operations.

6. CONCLUSION

The current chapter has the underlying purpose to address the research question that has guided the overall process of the paper. Findings from the empirical section and results from the analysis are also presented in order to take up the managerial implications that have been derived. Future research proposals on the overarching topic of this paper are ultimately exhibited.

The primary objective of the present inquiry is directed towards answering the following research question:

How can Green Tech successfully delineate a commercialization strategy appropriate for the Italian market?

As theory has showcased, the factors that present the highest correlation with successful product introduction are product advantage, proficiency of predevelopment activities and protocol. Product advantage entails superiority in terms of innovation and enhanced fulfillment of customers' preferences. Proficiency of predevelopment activities emphasize the necessity of up-front activities, such as initial screening and in-depth market research. Finally, protocol highlights the importance of indentifying target markets, customer segments and customers' needs. This paper has displayed that Green Tech presents inconsistencies in the concerned elements, triggering plausible repercussions on the overall successfulness of the product introduction. Thereby, recommendations on how to overcome these discrepancies have been addressed in order for Green Tech to successfully commercialize its product on the Italian market.

Green Tech is a Swedish start-up that has initiated its operations to generate a new concept of electric vehicle. The underlying goal of the company is focused on creating a new sub-market in the automotive industry through the development of an environmental three wheeler. Although the vehicle is still in the initial phase of the development process, strategies that entail commercialization activities need to be outlined. Even though the company is running its operations in Sweden, additional countries have been deemed as the priorities for its international expansions. In this paper, the Italian market was chosen as a pilot market for delineating a managerial model that would enable Green Tech to outline further commercialization strategies for the remaining target markets.

Findings retrieved from the literature review showcase several approaches on the topic of commercialization. However the underlying method to draw a successful strategy that minimizes the likelihood of product default appeared to be based on two main pillars constituted by internal and external forces. Internal forces can be related to resource-based capabilities at disposal of the firm whereas the external forces are constituted by the external environment and the actors that interact within it. For this specific case, the internal forces are then represented by an assessment of the internal capabilities at Green Tech while the external forces are epitomized by the Italian market research. A conceptual framework, which summarizes the underlying commercialization activities that Green Tech needs to undertake before launching its product on the market, was also generated. The managerial model comprises a series of sequential steps that, according to theory, impinge on the overarching operations of the firm in order to maximize the potentials of its business objective. Although the two pillars, upon which managerial considerations are based, were composed by pure empirical undertakings, subsequent stages were necessitated in order to embrace the overarching activities that the concept of commercialization entails. Subsequent to the

assessment of the internal and external forces, the managerial process, developed in the paper, guides Green Tech through an analytical path of ten factors that represent the managerial considerations stemming from the interaction of internal and external findings. An assessment of the market attractiveness as related to the specific product was also included in the procedure. Ultimately, the overall commercialization model entails an evaluation of the best suitable entry mode strategy for the company in a specific market. Although commercialization activities are frequently associated with the actual strategy that solely enables an organization to start generating revenue, it was noticed that the procedural method for defining commercialization activities is deeply rooted in the way that the overall product development process applies to external dynamics. This resulted, at the end, with an appraisal of the most appropriate entry strategy for the organization.

Although commercialization strategies are product and market specific, the overall purpose of the current paper was focused on the Swedish start-up Green Tech and the Italian market as the contingent external forces. The company was processed in the managerial model, as described above, which resulted in a progression of recommendations on commercialization strategies for the Italian market, concluded with most viable entry mode. Particularly, the empirical findings have displayed that, even though the Italian territory has scored lowest on the market attractiveness assessment from a macro perspective, the country under inquiry denotes elevated market potentials for Green Tech's vehicle. From a more micro standpoint, in fact, an extremely high receptivity for electric vehicles was noted. Furthermore, the infrastructure for the circulation of environmental means of transportation, which is constituted primarily by the recharging stations spread out across the inner cities, were found to be already in place in most of the central-north territory. Nonetheless, governmental authorities in the larger municipalities i.e. Milan, Rome and Florence are amongst them, pursue a policy of no-traffic in the downtown areas in order to preserve the historic centers. Pedestrians and environmental vehicles are thereby the only means of transportation allowed at any time of the day. Such occurrence was deemed to be a competitive advantage for Green Tech. By exploiting this niche in the Italian market, Green Tech is able to appeal to an extensive customers-base. Although the vehicle has been developed for end-consumers, the empirical findings of the field research have demonstrated that design and reliability, considered the two major factors that influence the buying behavior of the Italian potential customers, have were not deemed as appealing as the existing products on the market.

Even though the product can be considered innovative, an assessment of the degree of innovation was carried out in this paper. This has revealed that the vehicle developed by Green Tech appears to fall into the category of sustainable innovation. However some of the measurements could not be completed due to the fact that the production process is not yet initiated. The type of innovation, as explained by the academia, is a crucial factor for the commercialization activities of a firm. Primarily, if in presence of a sustainable innovation, the fulfillment of the customers' preferences should be one of the core drivers for the activities of the organization, whereas, when in presence of a disruptive innovation, new customers' needs are triggered. The focal attention of the latter is thus put on the technology *per se*.

Two underlying managerial implications have been derived from the analysis of the findings. The company has developed a product that in terms of technical feature does not entirely appeal to the Italian end-consumers. However, the vehicle is assessed to largely find its potential applications in a market niche constituted by the downtown areas of the larger cities in the central-northern regions of the Italian territory. Particularly, it has been sifted out that supplying firms would make a great use of the product provided by Green Tech due to the

limitation imposed by governmental regulations that allow deliveries in the no-traffic zone solely at certain predetermined time span in the early morning or in the late night. The electric three-wheeler would instead be able to access the downtown areas at anytime of the day, making deliveries possible when needed. Generally, it has been noted that all businesses located in downtown areas would benefit from an introduction of the vehicle on the market. A business-to-business approach appears then to be the most suitable for the Swedish company. Potential customers would then be consisted by any type of business that carries out activities in the no-traffic zones. The second alternative instead is more oriented to pure development activities. Since Green Tech is still in the development process phase and the design of its product has not yet been fully defined, the Swedish start-up might consider refining the underlying design in order to meet customers' preferences and needs. This alternative, although more costly, would allow the organization to expand the customer-base including also the end-consumers. However, it is worth pointing out that, even though the end-consumers may be attracted by a more refined vehicle, the main customer segment would still belong to a category of citizens that live in downtown areas or have activities related to it. The main reason of this customer behavior can be related to the fact that the environmental awareness on the Italian territory is not a factor on which a competitive advantage of a firm can be based. The competitive advantage of Green Tech's product over existing vehicles resides thereby in the possibility to access downtown at anytime of the day.

Regarding the pure entry strategies for the Italian market, non-equity modes have been assessed as the most suitable for the Swedish start-up. The franchising strategy that Green Tech is planning to undertake when expanding internationally has been evaluated as a viable commercialization option, however solely on a long-term basis. This is due to Green Tech's lack of track record that will be needed in order to attract foreign investors. If Green Tech is then pursuing franchising activities, a positive track-record on the domestic market would be necessitated before engaging in international activities with foreign entrepreneurs. However this may result to be a risky decision, since it is yet to be tested whether the product is endowed with as successful potentials on the Swedish market as on the Italian territory. Thus, two supplementary alternatives, that have been assessed to be the most viable for the commercialization of the vehicle, reside in the direct exporting through agents or distributors and licensing agreement. Although these two strategies are similar to franchising, they do not require an as high financial commitment from the entrepreneur as the franchising agreements. This would additionally imply that the commercialization strategy on the Italian market has a lower degree of dependence on the successfulness of the vehicle on the domestic market. Furthermore, due to the limited record of achievements, Green Tech should engage in collaborations with established foreign market intermediaries in order to utilize their reputation and track record, and minimize the risk for customers to rely on unproven suppliers. Although direct exporting through agents and licensing agreements have been assessed as the most suitable entry mode in the Italian territory, the latter appears to be preferable because of Green Tech's willingness to establish long-term agreements and the closer supervision activities that this strategy entails.

6.1. Managerial implications

From the empirical, theoretical and, primarily analytical undertakings of this paper, numerous managerial recommendations, regarding commercialization activities at Green Tech, can be drawn. Although the current inquiry has predominantly focused on the commercialization strategies concerning the Italian territory, the underlying implications that have been derived from the overall investigation can be utilized by the management team of the company as a guideline for the future product introduction across all the targeted markets:

- *Sift out the target markets on a deeper level.* Although the overall concept for starting Green Tech has been based on a market study, a more thorough analysis of the dynamics of the market should have been taken into consideration. Target markets have been identified on a macro level however, as the current paper testifies, macro analyses do not exemplify the real potentials of a market. An assessment of the micro factors as related to the product success should then have been the starting point of the company's operations.
- *Identify target segments and niche markets.* Although Green Tech has identified the target markets on a country basis, customers' segments and niche markets for the application of the vehicle have not yet been sifted out. Especially in such a saturated industry as the automotive, from a commercialization standpoint, it is imperative for the company to have clear targets and profitable objectives.
- *Closer interactions with potential customer.* Even though the product has been developed for the overall European market, it is worth pointing out that due to cultural, economical, political and environmental factors, customers' segments and preferences differ from country to country. Particularly, if not in presence of a disruptive innovation, customers' feedbacks and needs play out a crucial role for the successfulness of the product. Since Green Tech is not willing to adjust its vehicle for each country, an extensive market research of the concerned target countries should be performed in order to cluster their preferences and, by default, maximize the customer base. A closer interaction with the customers would thereby bring implications into the product development process of the company.
- *Marketing Support.* Although it has been recognized by Green Tech itself that a consistent lack of marketing skills is present in the organization, the company plans to undertake employment operations in a subsequent phase. However, as it has been noted, marketing activities imply a maximization of the value proposition of the product in the eyes of the customers, which very likely results in a higher product success. These, in turn, bring about several repercussions on product development process. Thereby, employments or closer collaborations with marketing managers would be required in order to establish a systematic interaction between internal and external dynamics.
- *Value proposition acceptance.* As the empirical findings of the Italian market have testified, simplicity, security and environmental awareness, values upon which Green Tech is planning to build its competitive advantage, are not unanimously assessed as drivers for the customers buying behavior. Thus, Green Tech should be able to seek out additional factors that might constitute a unique leverage for the value proposition process of the company. The instance of the Italian market, where the competitive advantage of the organization is constituted by governmental restrictions, can be considered an example of value proposition activities upon which future commercialization strategies should be based.
- *Top Management Support.* Although the commitment of the management team has been assessed to be highly elevated, the success of a product presents a low correlation with top management support. Thereby, managerial and technological proficiency, even with the support of external consultants, should be the overarching focus of the company's operations.

- *Network Exploitation.* Due to the long experience of the management team in the industry, Green Tech is endowed with extensive potential resources constituted by the extensive network. Although the company has made use of it in order to proficiently carry out the activities, a close interaction with external players may lay down the basis of a competitive advantage that Green Tech could utilize for the successful commercialization of its product.

6.2. Future research proposal

When dealing with commercialization activities, it has been noticed that the academia has pointed out a lack of consistency in the definition of the topic. Primarily, discernments of the various aspects that commercialization activities entail can be deemed quite vague and unclear. The managerial model (figure, 2), that has been delineated in this paper, attempts to summarize all the different elements of commercialization strategies in a single framework. The aim is to guide managers through a series of steps that range from an idea generation stage up until market launch. Primarily, the framework has been created around the theory of the ten factors by Cooper and Kleinschmidt (1987) which have been corroborated by resource-based capabilities view (Chandler and Hawks, market attractiveness assessment (Cavusgil, 2003) and entry mode strategies (Root, 1998) in order to specifically tweak the model for Green Tech.

Although the current paper has addressed the topic from a holistic standpoint, considering the numerous activities that need to be taken in account for commercialization strategy, some of the considerations are company and market-specific. Moreover, the ten factors, as explained by Cooper and Kleinschmidt (1987), reveal a correlation between success and managerial activities that is solely applicable for technology-driven firms. Non-technological firms seem to have been left out by the academia. Thereby the validity of the conceptual framework is yet to be tested in an external contextual environment. A need for further exploration of the model proposed in this paper requires then to be undertaken by future scholars.

The current paper did not aim to seek out other factors that are contingent on the success of new product introduction, nor did it intend to create a model universally applicable. Future research is thereby needed in both proving the validity of the framework for all the technology-driven firms, outside Green Tech's context, and investigating new factors that present a strong correlation to success for non-technological firms.

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APPENDIX 1

Entry strategy assessment (Root, 1998).

	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	

APPENDIX 2

Market attractiveness assessment (Cavusgil et al. 2003).

Dimensionion	Variabels	Germany	France	UK	Italy	Spain	Sweden	Weights
Market size	<i>Population</i>	6	5	4	3	2	1	1
	<i>Urban population</i>	6	4	5	3	2	1	4
	<i>Rural population</i>	6	4	2	5	3	1	1
Market intensity	<i>% of urban population</i>	2	3	6	1	4	5	6
	<i>Development, GDP/capita</i>	4	5	3	2	1	6	5
								5,5
Market purchasing capacity	<i>Economic growth (GNI/cap)</i>	4	3	5	1	2	6	5
	<i>Per capita income</i>	5	3	4	2	1	6	6
	<i>Disposable income</i>	6	5	4	2	1	3	7
	<i>- Income share held by highest 20%</i>	2	3	6	5	4	1	5
	<i>Inflation</i>	2	3	6	1	5	4	3
								5,2
Role of foreign trade	<i>Role of foreign trade (import)</i>	5	2	4	1	3	6	2
	<i>BOP</i>	6	3	4	2	1	5	2
								2
Education	<i>Literacy rate (tertiary education)</i>	2	3	6	1	5	4	3
								3
Market infrastructure	<i>Product significant demographics</i>	5	4	2	6	3	1	6
	<i>Shipping</i>	6	4	5	2	3	1	3
	<i>Physical distribution</i>	4	6	1	2	5	3	6
								5
Environment	<i>Climate</i>	3	5	2	6	4	1	3
	<i>Natural resources</i>	6	3	2	4	5	1	1
								2
								Sum: 24,7

APPENDIX 3

Customer feedback response (Findings form market survey).

Population			
Factor	Average	Median	Standard Deviation
Speed	4.26	4	1.47
Range	6.26	7	0.94
Recharging Time	5.42	6	1.62
Infrastructure	6.42	7	0.91
Electricity	5.40	6	1.60
Capacity	4.66	5	1.49
Design	5.83	6	1.62
Price	6.02	7	1.51
After-sale Service	6.11	6	0.93
Reliability	6.51	7	0.89
Speed	64.91 Km/h	60 Km/h	24.41
Driving Range	123.40 Km	90 Km	212.51
Recharging Time	5.42 h	3 h	11.31
Price	5.700 €	5.000 €	2.65

APPENDIX 4

Interview guide - Internal interviews

General firm information

1. Origin of Green Tech
2. Company strategy
3. Vision
4. Mission
5. Value offering

Product characteristics

1. Product specifications
 - a. *Measures*
 - b. *Technicalities*
 - c. *Patents*
2. Manufacturing
 - a. *Strategy for manufacturing*
 - b. *Location of assembly*
 - c. *Logistical considerations*
 - d. *Dimensions: Cost, Time*
3. Customer considerations
 - a. *Critical performance measures for customers*
 - b. *Customization*

Firm characteristics

1. Human resources
 - a. *Number of employees*
 - b. *Background and expertise of employees*
 - c. *Relocation considerations in case of foreign market introduction*
 - d. *Need for new expertise?*
2. Financial resources
 - a. *Capital structure*
 - b. *Financing*
 - c. *Long-term financial plans*
 - d. *Dependency of external financing*
3. Networks
 - a. *Partnership, collaborations, suppliers*

Interview guide - External interviews

Political environment

1. Constrains for new technologies
2. Availability of governmental incentives
3. Government communication and support of emerging technologies

Economic environment

1. Role of foreign organizations in Italy
2. Differences and similarities between Scandinavia countries and the south European
3. Growth and future opportunities for the automotive industry

Social and Cultural environment

1. Changes in education levels
2. Environmental awareness

Market access

1. Legal requirements for foreign organizations I Italy
 - a. *Investments*
 - b. *Taxations*
 - c. *Repatriation*
 - d. *Employment*
 - e. *Code of law*
2. Customer acceptance

Product potential

1. Factors influencing customer decision-making when purchasing electric vehicle
2. Customers' preferences towards tree wheeled vehicles
3. Are the Italian customers ready to accept the electric vehicles as substitutes to conventional ones?
4. Difference in customers' references between different Italian counties
5. What is the value proposition of electric vehicles

Local distribution and production

1. Drawbacks or opportunities in terms of transportation facilities in Italy
2. Availability of expertise and manpower in Italy as related to the electric vehicle industry

Sales volume forecasting

1. Is the Italian market prepared for an electric vehicle breakthrough?
2. Customers' willingness to purchase electric vehicles at this point in time
3. Customers' preferences towards electric vehicles
4. Competitive pressure in the electric vehicle industry in Italy at this point
5. More favorable customer segments
6. The importance of promotional strategies for Italian customers

Interview guide - Focus group questionnaire

Design

1. Considering the features and design of the vehicle, does the product fulfill your personal preferences?

Answer on a scale from 1 to 7, where 1 indicates that you find it far from your personal preferences and 7 that it exceeds your personal preferences.

Side	1	2	3	4	5	6	7
Rear	1	2	3	4	5	6	7
Front	1	2	3	4	5	6	7

2. Considering the design, do you think that the interior fulfils your personal preferences?

Specifications

3. Considering that you were in the decision of buying this vehicle, what would you consider suitable in terms of specifications such as:

Price	_____	<i>Euro</i>
Speed	_____	<i>Km/h</i>
Driving range	_____	<i>Km</i>
Recharging time	_____	<i>Hours</i>

4. Consider that you were in the decision of buying an electric scooter, how important would you consider the following factors?

Answer on a scale from 1 to 7, where 1 indicates that you find the factor not important and 7 that you finds the factor very important.

Speed	1	2	3	4	5	6	7
Driving range	1	2	3	4	5	6	7
Rechargeable time	1	2	3	4	5	6	7
Availability of recharging stations	1	2	3	4	5	6	7
Electric-powered	1	2	3	4	5	6	7
Vehicle storage capacity	1	2	3	4	5	6	7
Design	1	2	3	4	5	6	7
Price	1	2	3	4	5	6	7
After-sales service	1	2	3	4	5	6	7
reliability	1	2	3	4	5	6	7
Government incentives	1	2	3	4	5	6	7

5. To keep the cost at a reasonable level throughout the life of the vehicle is simplicity. Do you find that positive or negative?

Answer on a scale from 1 to 7, where 1 indicates that you find it negative and 7 that you find it very positive.

1 2 3 4 5 6 7

- Would you be willing to pay a higher price if the technicalities were more refined?

Answer on a scale from 1 to 7, where 1 indicates that you are not willing and 7 that you are highly willing.

1 2 3 4 5 6 7

6. Considering your daily life, what use would you make of this vehicle?

Go to work (go to school)

Shopping

None

Other _____

7. Besides being a city car, what kind of use do you think the vehicle can have?

Golf car

Taxi

Vehicle for elders

Handicap vehicle

Ape-type of working vehicle

Other _____

8. Do you consider this vehicle to have a future in the market?

Yes

No

-
9. Considering the technicalities of the vehicle, would you at this point in time be willing to buy the vehicle, given the price, range, design, and market conditions? (*Explain the conditions*)

Interview guide - Customer questionnaire

Age -20 21-30 31-40 41-50 51-60 60-

Gender Male Female

Occupation

Consider that you were in the decision of buying an electric scooter, how important would do you consider the following factors?

Answer on a scale from 1 to 7, where 1 indicates that you find the factor not important and 7 that you finds the factor very important.

Speed	1	2	3	4	5	6	7
Driving range	1	2	3	4	5	6	7
Rechargeable time	1	2	3	4	5	6	7
Availability of recharging stations (<i>infrastructure</i>)	1	2	3	4	5	6	7
Electric-powered	1	2	3	4	5	6	7
Vehicle storage capacity	1	2	3	4	5	6	7
Design	1	2	3	4	5	6	7
Price	1	2	3	4	5	6	7
After-sales service	1	2	3	4	5	6	7
reliability	1	2	3	4	5	6	7
Safety	1	2	3	4	5	6	7
Government incentives	1	2	3	4	5	6	7

Considering that you were in the decision of buying this vehicle (*show pictures*), what would you consider suitable in terms of specifications such as:

Price _____ *Euro*
 Speed _____ *Km/h*
 Driving range _____ *Km*
 Recharging time _____ *Hours*