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Developing Competitive Marketing and Sales Strategy for HS-Eden

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Abstract

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Start-ups are faced with variety of challenges and uncertainty therefore comprehensive marketing and sales strategy must be in place to make sure that limited resources are spend wisely in order to minimize uncertainty and pave a path that would lead to successful business. HS Eden is a new-start-up venture created in Lappeenranta University of Technology with an ambition to develop AMB systems for commercial use. The aim of this study was to build a marketing and sales strategy to help HS-Eden to attract new customers. HS-Eden as a start-up company would benefit greatly implementing this strategy to create a solid customer base utilizing marketing and sales tools provided in this report.

A relevant literature has been reviewed in conjunction with the survey to form a credible marketing strategy that might give HS-Eden a competitive edge to compete on the global AMB market.

Based on the findings from this research, university based Start-up's face many hurdles and only few of them can manage to succeed in the highly volatile market environment. Great product combined with great marketing provides a solid foundation for the start-up to succeed. The outcome of this research reveals that HS-Eden has the potential to succeed, but success is however depends upon the way the HS-Eden product meet customer demands. Therefore comprehensive marketing strategy must be developed to provide necessary structure to connect to the market and meet these demands.

Keywords: AMB's, sales, marketing, strategy, pricing, sales channels

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1 Introduction

Start-up companies face numerous challenges at the commencement stages, therefore a comprehensive business strategy must be developed so that a start-ups can start on a solid base. Today the business world has become very uncertain; customer's behaviors are changing constantly, economic circumstances are unpredictable, technology is developing in a fast pace and competition is fierce. HS-Eden as a start-up business needs to carefully plan ahead its marketing and sales strategy to be able to achieve its objectives.

HS-Eden is a startup company that was created by the Lappeenranta University of Technology as a result of long term research on an industrial product, specifically active magnetic bearings technology.

Participating in this project for over a year in the marketing research level, has revealed that the HS-Eden product has the potential to succeed but there is a need to develop a marketing and sales strategy that will enable HS-Eden to seize potential opportunities. Therefore this thesis project aims at developing marketing and sales strategy to assist HS-Eden to start the business successfully. The topic chosen for thesis is Developing a Competitive Marketing and Sales Strategy for HS-Eden.

The significance of this study, HS-Eden company profile, and the aims and objectives are discussed below. This provides a superficial overview towards the importance of conducting a marketing strategy research for HS-Eden.

1.1 Background of the study

Start-ups are demonstrated as the human institutions fostered to specifically bring newer products and services into the market under conditions of immense uncertainty (Kuratko and Audretsch 2009, p. 15). In the sustainment of any start-up company, the role of entrepreneurs and significance of entrepreneurship is well-defined (Rode and Vallaster 2005, p. 122). Generation of wealth,

prosperity, and a sustainable economic growth mainly for the start-up companies mainly relies upon the policy makers (Hechavarria and Reynolds 2009, p. 418). Besides, the disrupting incumbent technological, radical technological designs, and social regimes have an important role in realizing the advances.

According to Bauer (2013, p.22), entrepreneurs in the start-ups are responsible for securing all the defined benefits and preventing the scalable challenges through implementation of repeatable and accessible business models in markets to assure that higher growth potential is established since the very beginning of the start-up. This is because start-ups are subjected to face extreme uncertainty; this confronts them with a wider variety of challenges.

The marketing strategy and approach of a company is of critical importance to enable the start-up to endure these challenges. The success of marketing strategies is dependent upon how the environment in which the company operates is perceived. The decisions regarding sales and marketing have a direct influence upon determining the performance of new ventures and therefore pave a path towards further developments.

1.1 HS-Eden Profile

HS-Eden (High Speed Electronic Drives Engineering) was a joint project of Lappeenranta University of Technology and Saimaa University of Applied Sciences that was aiming to create suitable condition for a start-up company that will provide advanced active magnetic bearing technology. Active magnetic bearings are at the development phase and a team of qualified engineers and professors from Lappeenranta University of Technology have been working together to finalize the product. The team from Saimaa University has been researching the market to identify potential customers and competitors, learn more about bearing market in general with the main purpose to build strong foundation for HS-Eden to compete and succeed in the highly competitive bearing market.

1.1.1 Company background

After 40 years of research and development, the Lappeenranta University of Technology (LUT) has laid a basis for the company that deals in AMB systems. HS Eden is a new-start-up initiated in 2013 with an ambition to develop AMB systems for commercial use. The HS-Eden is a joint project of Lappeenranta University of Technology and Saimaa University of Applied Sciences. The aim of the HS-Eden project is to create conditions for a start-up company. My responsibility is to search market opportunities worldwide with the main focus in United Kingdom and countries around since I am located in London, and to develop marketing strategy for HS-Eden. The HS-Eden team has received substantial funding from Tekes, the Finnish Funding Agency for Technology and Innovation to commercialize advanced AMB (active magnetic bearing) technologies developed at the Lappeenranta University of Technology.

An early focus of the two year HS-Eden project has been to work with industry leaders in key markets to understand their current status and needs related to AMB bearing systems. This has led to refinement of HS-Eden AMB technologies and the development of a first family of product systems.

Finally, the foundation and structure for the HS-Eden company will be built based on advanced AMB technologies and a set of progressive business and product development processes.

1.1.2 Market Focus

HS-Eden has embarked upon the journey to conquer the market of mechanical structures. However, the idea of introducing levitating mechanical structures is not a new one and dates back to 1842 when it was first introduced by a scientist named Samuel Eranshaw. However, since the very beginning, marketing for mechanical structures is considered to be an impossible endeavor. Indeed, the idea has developed over the decades to form a modern version of marketing for rotating active magnetic bearing systems (Schweitz 2009 p. 12.)

1.1.3 HS-Eden Product Offering

HS-Eden active magnetic bearing technology is resulting from years of long-term research at Lappeenranta University of Technology. AMBs use magnetic fields to levitate and position moving components without physical contact. They permit relative motion with very low friction and no mechanical wear, enabling nearly unlimited speeds. AMBs operate quietly, offer improved machine service life, and do not require lubrication. HS-Eden offers the most advanced AMB solution including configuring and monitoring. It will add value to the customer who can benefit in three areas:

- **Technical value** – Increase speed and hence productivity.

Since AMB's support unlimited speed for electric drives, the customer can benefit greatly by utilizing this high speed in production to increase productivity.

- **Business value** – Decrease costs

Even though initial costs are higher, in the long run the cost of running AMB's is lower compared to conventional bearings since there is no need for lubrication and no maintenance is required.

- **Personal value** – Improve work life balance.

HS-Eden also offers remote controlling and monitoring of the system, so the customers do not have to be tied up to the manufacturing plant, for instance to monitor the behavior of the AMB system.

1.1.4 Strength

However, the idea for levitating mechanical structures is long standing; researches regarding active magnetic bearings (AMB) have risen over the decades because of an increased demand in the industry for high speed technology innovations. According to Hynynen (2011 p. 9), the AMB systems offer suitable solutions for many industries that deal in large or medium high speed machinery. Introduction of AMB products may prove to be advantageous for a

start-up as they offer competitive advantages against the traditional fluid film bearings. They are easy to operate and offer adjustable stiffness and damping which has made them a priority option for industrial applications and use (Schweitzer, 2009, p. 4).

1.1.5 Target customers

Since, the AMBs can be used in vast industrial applications, HS Eden has the opportunity to target industries operating in different application areas such as manufacturing industries, gas production and gas turbines, underwater compressors, energy productions in flywheels, plant generators, medical industry (artificial heart pumps), vacuuming and clean-room systems, turbo molecular vacuum pumps, and semiconductor industry for chip manufacturing. Thus, the high demand and applications of the provided product has given HS Eden a competitive edge to sustain marketing in different industries. This entails that HS-Eden may viably form a substantial base of customers.

1.2 Major challenges related to AMBs

Despite the fact that AMB offers great advantages and application, there also exist some significant disadvantages as the cost is high for the investors and if not marketed well, there is a great possibility that the company may drain its economic resources. Dealing with AMBs require higher designing and standardization levels and knowledge from various engineering fields such as control and software, electronic, mechanical which must be integrated to differentiate them from the conventional oil film bearings (Swanson et al. 2008, p. 21).

This implies that the reliability measure for technology requires improvements. This is because whenever new machinery is introduced as a major commercial offering other than theoretical concepts, it must be proved that it stands more reliable and economical than the pre-existing ones. This factor needs to be underpinned as the major characteristic feature within the marketing strategy to promote as a feasible, yet an innovative option that can significantly re-define or refine the business processes for companies which opt to use.

1.3 Significance of the study

Start-up companies face numerous challenges at the commencement stages therefore a comprehensive business strategy must be developed so the start-ups can start on a solid base. Today the business world has become very uncertain; customer's behaviors are changing constantly, economic circumstances are unpredictable, technology is developing in a fast pace and competition is fierce. HS-Eden as a start-up business needs to carefully plan ahead its marketing and sales strategy to be able to achieve its objectives.

The outcome of the market research divulge promising results for HS-Eden to succeed in the global AMB market, but without a strategic marketing and sales plan it almost impossible to penetrate in a very demanding yet volatile AMB market.

1.4 Aims and objectives

The aim of this thesis is to deduce a suitable marketing strategy that may help HS-Eden to gain the global pace for technology offerings. The major study objectives include:

- to analyze the major challenges that start-up companies usually face
- to analyze the company's position in external environment
- to analyze the potential customer and base and their views regarding AMB products
- to critically evaluate the present marketing strategies of HS Eden against the consumer needs and demands
- to integrate the findings into a comprehensive sales and marketing strategy.

2 Literature review

Different concepts are considered and discussed relevant for the formation of a sales and marketing strategy for HS Eden. This section will help to provide insights towards the potential marketing strategy depictions and their prospective implications for deducing a marketing strategy for HS Eden.

2.1 Significance of technology based start-ups

According to Fagerberg et al. (2000 p. 393), the ability of companies to exploit technological opportunities is greatly important to expand the business pool for the nations and enables them to stay competitive within the global economy through projected growth in the economy. Curree and Thurik (2003 p. 438) have recognized entrepreneurship as the driving force behind the economic growth whereas the inception of new enterprises as the key element to encourage a real value economy through creating jobs.

According to Eurostat (2008), there were two million jobs estimates within the 15 member states created as a result of new enterprise in 2005. Ries (2008) has described start-up as a modern term associated with the early phases of entrepreneurship. Start-ups are conceived as companies trying to gain measurable profit through undertaking market possibilities. However, Ries has argued that most of these start-ups fail due to the lack of market development and credible market strategies.

The fact that new ventures and start-ups are of critical importance in the global economy is well-acknowledged by both the practitioners and researchers (Zahra et al. 2000, p. 521). According to Christopher (2007 p. 49), the increased growth of new ventures in the business eco-sphere has not only resulted in piling up of newer products and services, but has provoked a significant competition among the pre-existing players. This implies that start-ups have the tendency to tremor the substantially formed basis of former businesses if they are equipped with tremendous sales and marketing strategies. Li & Atuahene-Gima (2001, p.1124) have viewed development of the new ventures as both a revitalization tool for the developed companies as well as a potential driving force that

promotes emerging markets. It has also been suggested in the literature that emerging markets serve as a richer landscape that allow new ventures to exploit potential opportunities to capitalize their growth (Li and Miller 2006, p. 11). However, it is also well-established that without profound marketing and sales solutions, start-ups may not vigorously use the opportunities to sustain their operations.

2.2 Credibility of university based start-ups

Marketing for high-technology products in the B2B markets is highly expensive. According to Simula et al. (2010 p. 6), the commercialization of new technology includes similar elements as projected in general product commercialization. The commercialization of a new technology most commonly includes the same elements as the commercialization of a product. Contrastingly, there is not even a single theory that can be followed to mitigate persisting uncertainty factors that may prove to be highly ruinous for the project.

According to Shane (2004 p. 79), start-ups that are inspired from university projects hold greater essence of creating new and innovative things and therefore is considered as the most credible commercialization that can drive the humanity towards greatness. This is because it underpins the latest research over technologies and the aspirations shared by new and emerging talent. Such commercial projects are also deemed reliable as the major contributor to improve local and economic development.

Shane (2004 p. 64) has shed light towards different reasons as why such projects are likely to bring economic prosperity for the nation. Firstly, the start-ups deal with innovative products that veer from the traditional solutions and the new innovations brings more satisfaction to the user needs and demands. The major perspective is either to eliminate or simplify the pre-existing solutions. This implies that research based technology start-ups provide greater economic diversification and make the economy to shift its focus from the old industries towards newer horizons.

According to Vohora et al. (2004 p. 149), such projects are beneficial due to their tendency of generating newer products and services that eventually leads to render innovation solutions for different industries and breaks the competition through fostering blue ocean strategies. It has been acknowledged that the demand and greater demands for the prospective products and services is subsequent to the degree of innovativeness they offer with greater considerations of consumers needs and wants (Smits 2002, p. 864). In other words, the solution enabled by higher technology based upon university research are able to truly satisfy the customers that normally remain unsatisfied or in a quest to find relevant solutions.

Secondly, the start-ups can viably improve local economy through generating jobs particularly for the highly educated people. The pathway that HS-Eden has followed by bringing the research into a market solution is potential to induce investments for technology development. The major notion behind the venture is based upon broadening the advances for AMB technology into practical use. Vohor et al. (2004 p. 174) has narrated such endeavors as spin-offs which often are considered a great place of opportunity for investors to further the development and commercialization of high-tech university research as compared to other established companies.

Thirdly the university start-ups are more capable to spawn R&D as Delmar and Shane (2002 p. 13) have highlighted that university ventures exhibit higher research and development potencies compared to other start-up companies. This, therefore, forms the value for HS Eden to further generate technical advances within the same industry.

The fourth and final way is the highly localized economic impact which means that the spinoffs created from university research are also important contributors to the local economy in financial terms. In other words, the business opportunities that are generated from commercialized university technology are directly related to the enhancement of economic growth. This can be explained by the locality of hiring employees, sourcing of supplies, production sites and so on, thus having a strong effect on the local economy.

According to Lowe (2002 p. 09) the new technology companies tend to cluster together having an even deeper impact on the economy. Mostly companies generated from university research will contribute more to the local economy than other firms as they will gain more from the services already well known to them (Shane 2002 p. 123).

There have been three major reasons narrated in the literature why the university oriented technology based start-ups offer stronger economic impact as compared to other start-ups or established firms.

- Firstly, high-tech university based spin-offs are inspired from laboratory researches. University researchers therefore can refer to these laboratories at any instance to improve the innovations and therefore are able to generate a higher degree of technological research (Powers 2003, p. 28).
- Secondly, the geographic locations permit entrepreneurs and marketers to remain affiliated with the university (Arora et al. 2004, p. 7).
- Thirdly, mostly the place of operation identified offers greater opportunities for remaining intact with the university culture which is embedded with higher research and development.

Furthermore, start-ups such like HS-Eden are identified to bring a highly localized economic impact. Their financial contribution towards the local economy is well-determined. The business opportunities generated from university research based start-ups are remarkable to enhance economic growth. In view of Lowe (2002 p. 12), the new technology companies intend to make a meaningful cluster together to create a deeper economic impact. Most of such companies tend to contribute to local economy through the innovativeness of their services which is not such magnificent in other companies.

2.3 Reasons for start-up failures

A study of Swedish firms has revealed that more than 32% of the start-ups founded in 2005 failed tremendously before 2008 (Ekonomifakt 2012). A similar level of failures has also been reported in US-based start-ups (Shane 2003).

According to Zimmerman and Zeitz (2002), only a handful of start-ups manage to sustain their positions within the highly volatile market environment whereas the other start-ups simply lag behind and eventually get closed due to market failures. According to Zimmerman and Zeitz, higher start-up failures rates have been reported from both developed and developing countries. This higher failure rate corresponds to resource wastage and drainage of substantial academic efforts which are devoted to identify the factors that may create and promote new ventures and economic success.

Blank (2005) has identified the decision making for start-ups as a relatively young research area. There have been some studies which have focused upon the significance and different aspects of decision making for start-ups Cooper and Vladkovits 2010; Ries 2011; Sims, 2011; Furr and Ahlstrom 2011; Maurya, 2012; Blank and Dorf 2012.

According to Ries (2011), there are many reasons that cause start-ups to fail, but one of the most common and a persistent reason for failure is the **lack of customer input**. It is commonly acknowledged that the founders often falls in love with their products and starts to believe in them so much thus they turn their attention off from the marketing prospects as well as turn ignorant to recognize the significance of customer inputs and how the product might behave in the real world.

The worst thing happens if the founders ignore inputs that are contradictory to their ideas about what the customer really wants (Blank 2005). This consequently results in the risk of overspending of resources used for development of product or service which are ultimately ignored by consumers (Blank and Dorf 2012).

According to Blank and Dorf (2012), introduction of new products in the market is by far the most expensive demand-creation challenge because there is nothing to compare the product against. According to Blank and Dorf, new markets are those that do not have customers yet and also for which it is difficult to project that what the product can actually do or why the customers should buy it. Therefore, obtaining feedback and the creation of demand proves to be a challenging process since the product is unknown for the consumers as well as the market identified is unknown.

McEwen (2013, p. 264) has highlighted the scope of environmental problems in the world and how it affects the emerging companies. According to McEwen, the rationale of environmental problems being faced from around the world, makes it clear that the past strategies have significantly failed to cope with these challenges and therefore the start-ups are highly vulnerable to face environmental degradation.

According to Cohen and Winn (2007, p. 34), there is a greater need to pay attentions towards enhancing the role of entrepreneurs for resolving environmental problems. It has also been agreed by scholars that preservation of ecosystems from getting infected with company processes can be acquired through an enhanced role of entrepreneurs (Dean and McMullen 2007, p. 52).

2.4 Commercialization and innovation

Commercialization is referred as the planning and execution of a product or technology into the market. It is also referred as the actions performed to develop a product idea which can appeal to customers and appear to be a credible product that is easy to buy as well as easy to sell. However, the sales and marketing strategy forms a major trouble for start-ups because sometimes even the greatest product idea may not bring profit to the organization without a successful marketing strategy. Commercialization forms a natural part of the process, which brings good economic results if the idea is followed with significant strategies (Simula et al. 2010, p. 8).

Teece (1986) has defined innovation as the characteristic of a product that may bring new value to the target markets. However, it is also true that value generated from the new product does not solely rely upon the technology itself, but must contain the potential to get integrated with the existing technologies in a meaningful way that may appeal to customers.

Furthermore, innovation is termed as the use of new business models for marketing a new product or technology. Radical innovation is perceived as introducing a product or technology which is completely new to the market. It is also note worthy that the commercialization may not be carried out solely by the university but also it is wise to use external expertise.

2.5 Lean start-up methodology

Literature has focused upon the significance of Lean Start-up Methodology (LSM), which is referred to as a mind-set and a business approach aimed to change the ways through which companies develop and launch new products (Ries 2011; Furr and Ahstrom 2011, p. 08; Blank and Dorf 2012 p. 21). LSM is a start-up method that helps companies to validate learning and acquiring new scientific entrepreneurship approaches through conducting iterative product tests based upon customer feedback. LSM helps start-ups to develop a deeper understanding of how a product or service can be shaped to better meet the needs and demands of the potential customer base without wasting the resources. This, therefore, helps provide a shorter and safer road to minimize the market risks (Blank and Dorf 2012). Contrarily, according to Ries (20011), the philosophy of LSM is something more than just merely focusing upon customer interaction as it makes the start-up venture realize the value of reviewing different parts of the business plan including business models and sales channels, to ensure the success of the entire lean start-up process.

According to Ries (20011), the philosophy of LSM is inspired from the ideas of lean production which is sometimes also referred to as lean manufacturing. Lean manufacturing considers waste as any expenditure of resources other than for value creation at the customer end, which is why the lean manufacturing concepts advocate for immediate quality control checkpoints for an instant

identification of any mistakes or imperfections that likely may occur during assembling to minimize the time spent in the development of substandard products. For a similar reason, lean management focuses on maintaining close connection with the suppliers and stakeholders to better understand the desires, needs, and demands of the consumers (Womack et al. 2007).

Reviewing of LSM for HS-Eden is significant to consider as LSM was originally developed for high-tech firms, but however has been expanded to apply to individual teams and companies looking around for marketing new products and services. The very essence of LSM philosophy is oriented to greatly serve marketing purposes of start-ups dealing in high-tech solution. As mentioned in the New York Times, the concept of Lean Start-up has widely been consumed by entrepreneurs around the world (NYTimes, 2011). This has consequently resulted in the propagation concept to global market areas (Roush, 2011). According to Ewel (2012), in 2012, there were Lean Start-up meetings 100 different cities of 17 countries as well as offered an online discussion forum for over 5500 members.

2.6 Traditional marketing view practiced before LSM

Traditionally, the discussion about bringing new products and services into the market and profit generation was limited to product development. The conventional models of product development is practically limited to the fact that an entrepreneur identifies an opportunity, creates a new product or service based upon the identified opportunity and brings it into the market (Blank 2005, p. 5; Furr and Ahlstrom 2011, p. 22). Since then, several amendments have been made to this model, but the foundation has remained the same.

According to Furr and Ahlstrom (2011, p. 12), the general processes that entrepreneurs utilize to start their businesses acquire features similar to the traditional product development process. It follows the general paradigm that starts with the identification of an opportunity and is followed by the development of a product, acquirement of capital, and improvements to the initial product.

The final stage is the placement of the product in the market which seems to be a highly daunting process. Besides, founders are generally overwhelmed to keep their focus upon the market sizing and activities based upon early customer interviews. Within this process, customers are seldom involved in the development process until the very end of the processes when a considerable amount of capital has already been invested. This creates a breach in the marketing process (Blank 2005; Furr and Ahlstrom 2011, Ries, 2011.)

The process of product development can reliably make sense for the established firms that require no substantial capital to spend, but it does not favor start-ups as they have only limited financial resources (Furr and Ahlstrom 2012 p. 5). According to Blank and Dorf (2012 p. 05), start-ups are characterized with higher degree of uncertainty which exhibits a critical mission for entrepreneurs to manage these uncertainties.

2.7 Significance of consumer's perspective in developing a sales strategy

According to Skok (2010), acquiring a substantial customer base requires a variety of sales, marketing, and support steps with the major goal of converting the prospective customers into the paying ones. This is why the sales process is often considered as a funnel which involves different steps. The very first step to initiate a selling process is prospecting, which is referred to as the identification of qualified potential customers. Approaching the right potential customers is of crucial importance to generate sales flow and increase prospective effectiveness in a faster way to boost sales.

There are different measures to qualify the prospects including financial ability, special needs, volume of business, location, and growth possibilities. However, for sales people, referrals serve as the best source to lead. The referrals may include customers, suppliers, dealers, web or social networks, and noncompeting salespeople. These prospects can viably be searched over trade journals, newspapers, phone or web directories and tracked down by telephone and email. (Kotler and Armstrong 2012; Blythe 2005.)

The second method is pre-approach to promote sales. The sales team requires learning about the organizations and buyers as much as possible before contacting the prospects. Gathering of information from the potential buyers helps the sales team to develop possible problem solving to promote sales. (Blythe 2005.)

According to Kotler and Amrstrong (2012), it is significant for the sales teams of companies to gather user oriented data from different points of information, such as online resources and talks with the acquaintances and others, to extend valuable assets of information. This constitutes a point where sales teams and managers are required to determine the best approach method.

The major objective of the approach step is to pave a good and understanding relationship. This can be significantly achieved through asking key questions that are in line with the customer's demands or otherwise attract the buyer's attention. However, whether it is any stage, keeping view and listening to customers is always essential. (Kotler and Armstrong, 2012, p. 79.)

Presentation of ideas to the customer before getting into the market is significant. This is defined as the customer solution approach. A buyer always shows interest in knowing how the offerings add value to their business. Listening the buyer's concerns and responses towards the product and services helps the sales team to deliberately plan the ideas. However, in today's environment that is substantially information-loaded, customers require richer presentation experiences. (Kotler and Armstrong 2012, p. 92.)

The objections and concerns raised by customers' during presentation and through surveys represent their psychological concerns that are often unspoken and therefore provide logical pointers for the sales managers to construct a strategy that is ultimately compelling and desirable for the identified customer base.

This implies those consumers are potential sources for companies to depict the reasons of buying and incorporating customer ideas into the sales strategy.

Likewise, the consumer follow-up allows companies to elevate their satisfaction levels and continue to enjoy significant market relations.

2.8 Marketing and sales development

According to Kotler et al. (2003 p. 87), there are eight different steps significant for introducing a new product or technology. The first step is the main idea and how it differs from the other pre-existing areas. The next step is to extend the understanding about how the development of the idea may prove to be an objective view-point. The third major step is of product testing and accumulation of product components to be tested. A marketing strategy comes at the fourth step which veers the focus off from the product and concentrates on the potential customers and markets. Successful formation and implementation of a marketing strategy determines the company's profitability and therefore provides valid reasons for furthering the strategies.

2.9 Understanding B2B markets

B2B markets are different compared to consumer markets. Since HS-Eden potential customers are business enterprises one has to understand how the B2B market works and how it differs from the consumer market. Harrison et al.(n.d) claim that there are 10 key factors that make B2B markets special and different to consumer markets.

1. B2B Markets have a more complex decision making unit

Ordering products of low value and low risk (such as the ubiquitous paper clip) may well be the responsibility of the office junior. However, the purchase of a new plant that is vital to a business may involve a large team who make their decision over a protracted period. Each member of the team will have different interests and motivations making decision unit much more complex. For instance, buyers seek a good financial deal. Production managers want high throughput. Health and safety executives want low risk.

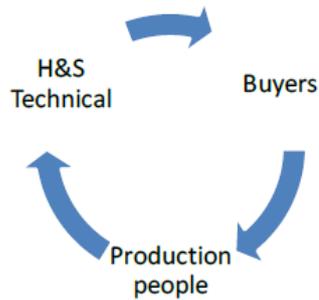


Figure 1: A typical decision making units in B2B environment (Harrison et al. n.d)

2. B2B Buyers are more 'rational'

Consumers are less well-informed, less accountable to others and far more susceptible to whims, indulgences, recklessness and showing off than is the case at the work place. Consumer buy whatever they want and do not think about ROI, but when one you purchases for the company they always have to think also about the profit. (Harrison et al. n.d.)

3. B2B products are often more complex

Purchasing a power plant for instance, requires qualified experts. Most of the industrial products have specific requirements. No one would buy HS-Eden's AMB's because they look nice. These AMB's will have to be integrated into an electric motor; therefore the host of technical issues would need to be considered before making buying decision. (Harrison et al. n.d.)

4. Limited number of buying units in B2B markets

Almost all B2B markets exhibit a customer distribution that confirms the Pareto Principle or 80:20 rule. A small number of customers dominate a sales ledger. (Harrison et al. n.d.)

5. B2B Markets have fewer behavioral and needs-based segments

Since a target audience in the B2B market is small, this is one reason why B2B have few segments. Also the behavioral and needs based segments that emerge in B2B markets are frequently similar across industries. (Harrison et al. n.d.)

6. Personal relationships are more important in B2B markets

A small customer base that buys regularly from the B2B supplier is relatively easy to talk to. Sales and technical representatives visit the customer and hence build personal relationships and trust develops. (Harrison et al. n.d.)

7. B2B buyers are longer-term buyers

Long-term purchases are much more common in B2B than B2C, because capital machinery, components and continually used consumables are prevalent. (Harrison et al. n.d.)

8. B2B Markets drive innovation less than consumer markets

Most of the innovation is driven by the consumer markets. B2B companies have the luxury of responding to trends rather than seeking to predict or even drive them. (Harrison et al. n.d.)

9. Consumer markets rely far more on packaging

In B2B markets a product is judged based on technical criteria rather than appearance and therefore packaging is less important. (Harrison et al. n.d.)

10. Sub-brands are less effective in B2B markets

In B2B markets the target audience is small and buyers place more emphasis on relationships than brands when it comes to making the purchasing decision.

A review of different studies suggests that the university research based start-ups hold the greatest potential to compete in the market, but there are numerous studies that render start-ups vulnerable when facing market failures. It has

also been identified that the product quality and design alone do not create success, unless they are followed by a credible sales and marketing strategy because the product alone may not create a difference unless it is bought and utilized by the consumers. Therefore, a credible marketing strategy is the one that appeals to consumers and respects their feasibility.

3 Methodology

There may be different methodologies available to undertake the research. According to Gerhardt (2004), selecting the most appropriate methodology is a daunting process. Moreover, methodology does also impact the credibility of results. Therefore, it is one of the greatest challenges for the researcher to adopt a suitable research methodology.

This chapter includes details about and justifications for choosing the prospective methodological designs. The chapter explains the major research approach and the rationale for choosing a method appropriate for HS Eden. Besides, the chapter includes other relevant details relating to research design, data collection strategies, data analysis, and sampling strategy. At the end of the chapter a summary is provided of all the methodological choices made to meet the study objectives.

3.1 Research design

Research design is referred as the set of choices that a researcher makes for data collection and analysis. According to Mojahed (2005 p. 3), all research approaches fall under two broad categories: the qualitative and quantitative. However, which of these approaches holds the greatest merit has been a matter of debate for several decades. After considering the different research design policies and implications, a qualitative research design has been chosen to conduct the study.

Creswell (2009 p. 4) has demonstrated qualitative research designs as highly valuable for researches particularly when the nature of study is exploratory. A qualitative research design enables the researcher to make inquiries and rele-

vantly capture people's perceptions regarding the product. Therefore, the qualitative study design would help to base the marketing strategy for HS Eden upon the rational evidences gained from potential B2B customers and their interests in purchasing AMB products.

The selection of the qualitative research design seems to be highly appropriate as it would help to attain the study aims and loopholes in the current marketing strategy of HS Eden in the light of B2B market experiences and preferences for the AMB products. According to Marshall and Rossman (2014 p. 2), qualitative studies are highly non-preemptive in nature which is why they stand to be an appropriate choice for researches where the expansion of present data research is required.

3.2 Data collection

The different data collection tools used in qualitative research surveys include semi-structured interviews, participant observation, in-depth interviews, questionnaire, and purposive sampling. The present study includes both primary and secondary sources of data collection.

3.2.1 Primary Data

Boslaugh (2007 p. 2) has defined primary data as data that the researcher collects by himself through identified means. Collection can be conducted either through experimentation or surveys based upon a questionnaire or interviews. The present study collected primary data with the help of semi-structured interviews.

Cohen (2006, p. 30) has described semi-structured interviews as the best study option which the researcher can take to interview someone who might not be available in a second chance. Semi-structured interviews are formal in nature and are often followed by an interview guide enlisted with important questions or the key areas that are required to be explored. The interviewer keeps the guide at the time of interview, but is not limited to ask the questions listed. The researcher has the freedom to take topical trajectories in the conversation where necessary. The present study has involved in the interviews B2B con-

sumers from different business sectors where AMBs may be a significant solution aside from traditional practices.

3.2.2 Secondary data

Boslaugh (2007 p. 3) has described secondary data as the data based upon findings originally drawn from other researchers upon the similar topic. According to Healy and Perry (2000 p. 119), the use of secondary data is significant in the qualitative researches as it helps to understand the research gaps as well as validate the findings. The secondary data for HS-Eden's marketing strategy is retrieved through conducting internal and external marketing analysis from the given sources.

Furthermore, the current marketing strategy of HS-Eden was analyzed in light of the literature based upon B2B marketing strategies. With this, the study has intended to highlight the major strategy gaps with respect to the market position of HS Eden which require to be solved. Likewise, the findings retrieved from the survey were also analyzed in light of the literature and integrated to form a rationale for a modified marketing strategy that may give a competitive advantage to HS Eden. The major sources used for conducting an environmental analysis included industrial/corporate/ government reports and studies particularly based upon British start-ups.

3.3 Sampling

Sampling is defined as the differentiation of target population and collection of research samples from them. Since it is virtually impossible to consider all the potential B2B customers, a sample size helps to focus the study upon a specific volume of population. According Gummesson (2006 p. 168), the extent of how far the results are generalizable mainly depends upon the sample sizes. For this study a sample size $n=10$ was chosen representing different industries. From each industry two B2B consumers were been interviewed. The industries included gas turbine, underwater compressors, medical, semi-conductor, and energy production industries operating in the UK. All these industries exhibit great

marketing potentials for AMBs and may become HS-Eden's potential customers.

3.4 Data analysis

According to Bowen (2009 p. 28) there may be different techniques available for data analysis. For instance, the data retrieved can be analyzed on the basis of grounded theories through thematic analysis or content analysis. In the present study the interviews were transcribed into meaningful data streams and themes based upon the challenges retrieved from the market analysis. Interviews were recorded and transcribed manually into the relevant themes. A suitable sales and marketing strategy was suggested based upon the findings.

3.5 Ethical Considerations

Ethics is of particular importance especially when the study involves human subjects. Since the study includes an interview, consent was reached with the study participants. Participants were reported about the study aims and objects as well implications to their industries. Anonymity was assured and it was guaranteed that except for the industry and designation nothing would be revealed. Permission was also taken to record the interviews and it was ensured that the given information would not be used for any academic or professional purposes that contradict or infringe the research and privacy policies.

A qualitative research design was chosen as it allows the researchers to conduct both primary and secondary research at the same time. In order to integrate consumer feedback, the market position of HS Eden and theoretical underpinning, qualitative research design proved to be a relevant choice.

4 Global market analysis results

This chapter includes findings based upon corporate and governmental reports regarding the needs of key market players for the AMB bearing systems. The

analysis of global market opportunities will help to develop a marketing strategic plan for the AMBs to help the company gain a competitive advantage.

4.1 Global outlook

Global demand for bearings will rise 7.8 percent yearly to \$96 billion in 2016. The Asia/Pacific region will post the fastest gains and account for more than half of the world total. Un-mounted ball bearings will remain the bestselling type, followed closely by un-mounted roller bearings, which will experience the fastest sales gains. (Freedonia Group n.d).

4.2 Potential competitors- company profiles

4.2.1 SKF

SKF is one major global leader that has sustained the market for bearings for over 100 years. The major strength of SKF is its sustainability and life period as well as the range of mechanical products. SKF's range of products is the broadest within the industry that covers all the rotating machines. SKF has solutions for all machines that run on rolling bearing elements for a typical refinery or a chemical plant. Besides, SKF is also well known to respond to new challenges in the market innovation. It is one of the leading providers of motor and machine tests and monitoring equipment for industrial maintenance. In particular, the test instruments and bearings that SKF produces are frequently considered a standard for organization maintenance and motor testing. SKF covers huge shares in the global market and therefore stands to be a great competitor for HS-Eden. (SKF 2014.)



Figure 2. Market reach and sustainability for the SKF (Smithanik and Mazzei 2012)

4.2.2 Barden Corporation (UK)

Another important provider of AMB bearings is Barden Corporation (UK) Ltd based in Plymouth. Barden Corporation has now become a part of the Schaeffler Group. Over the past 30 years, it has been playing an expert role for emergency bearing sizes for AMBs. A strength of the company is its competitive engineering team with special competencies in vacuum pump bearings and energy bearings. Besides, Barden Corporation constitutes a single source supplier for many European users of magnetic bearings. Barden was also amongst the ten organizations that conducted the European-funded research project named MAGFLY between 2002 and 2007. The project specifically focused upon the AMBs design for aero engines and civil aircrafts (Barden Corporation 2016).

4.2.3 HB Bearings

HB Bearings is a specialized bearing manufacturer and provider of bearings based in United Kingdom. However, the company supplies in low volume, but it has sustained a great market position for the last 44 years and has grown as one of the leading manufacturers that covers the whole Europe. The main strengths of the company are their product range and development and a well-established customer base. Overall, it is a renowned and trusted bearing provider in Europe. (HB Bearings. 2016).

4.2.4 JTEKT

JTEKT is a renowned name particularly in the automotive and aircraft industry. However, it provides advanced bearings to general industries by applying high quality technology. The major prospects of the product offering include low torque and high quality. Besides, the marketing strategy also reveals the products are sustainable and environment friendly particularly for moving applications in wind power generation and high speed rail roads. The bearings manufactured are also in vehicles and state of the art engineering in different industries. One significant factor that highlights JTEKT among the competitors is that it provides total manufacturing systems and machine tools. Therefore, it has been a viable provider for world's industries worldwide. The major supplies include oil seals, drive shafts, and bearings. (JETK 2016.)

4.2.5 SIEMENS

Siemens has created reliable bearing applications to assist UK train operators and commuters. The company has brought the solution to the different challenges that operators and engineers face to network trains in interurban and suburb traffic. Company has fostered the concept of in-board bearings that is much more compact and lighter compared to the out-board bearings and carries significant operational advantages for the semiconductor industry. (Siemens 2011.) Therefore, with its product offering, Siemens dominates the automotive and semiconductor markets in the UK as well as globally.

4.3 Potential global competitors/customers

The following table highlights HS-Eden's major potential global customers and competitors.

Company	Local office	Product Line	AMB use	Customer/ Competitor
Aero Compressors, INC. (USA) Distributer http://www.aerocompressor.com/		Sullair Rotary Screw Compressors Sullair Vacuum Systems Champion Piston Compressors Compressed Air Dryers and Filters Services and Repair Compressed Air Systems Analysis	No	?
A-1 Air Compressor Corp. (USA) http://www.a1air.com/		Air Compressors Compressed Air Dryers Air Receiver Tanks Vacuum Pumps Blowers Air Compressor Filters	lubricant-free aerodynamic bearings http://www.aerzenusa.com/Products/Turbo-Blowers	?
Aerzen Maschinenfabrik GmbH (Germany) http://eng-de.aerzen.com/		blowers compressors rotary lobe compressors gas meters turbo blowers	Yes (Hoffman's Innovation) http://www.cabptest.com/sites/default/files/CABP_2011_09SeptOct_LR.pdf	?
Acmevac Ltd (India) http://www.acmevac.com/index.htm		Liquid ring vacuum pumps Rotary high vacuum pumps Direct drive high vacuum pumps rotary vacuum pumps Turbine blowers Diaphragm vacuum pumps	oil-free Diaphragm Vacuum pumps/compressors http://www.acmevac.com/diaphragm.htm	?
Accurate Air Engineering Inc. (USA) http://www.accurateair.com/		Air compressors Rotary screw compressors Reciprocating compressors Centrifugal compressors Oil free compressors Air dryers Blowers	No	?

<p>Air Compressor Supply, Inc (USA)</p> <p>Manufacturer and Distributor</p> <p>http://www.aircompressorsupplyinc.com/</p>		<p>Air Compressors and Rotary Screw Compressors Air Treatment and Filtration Products and Services Air Systems & Installation Rotary Blowers & Pumps Centrifugal Oil Free Air Compressors Oil-Free Air Compressors, Gas Compressors, & Air Boosters Oil Free Rotary Screw Air Compressors Oil Free Scroll Air Compressors</p>	<p>Yes Hitachi, Gardner Denver, Kaeser products</p>	<p>?</p>
<p>Air Squared, INC (USA)</p> <p>http://airsquared.com/</p>		<p>Compressors (advanced in scroll technology) Vacuum Pumps Expanders Hydrogen Recirculation</p>	<p>No</p>	<p>?</p>
<p>Agilent Technologies (USA)</p> <p>http://www.home.agilent.com/agilent/home.jsp</p>	<p>Agilent Technologies Finland Oy Panorama Tower Hevosenkäki 3 02600 Espoo Suomi +358 (0)10 855 2465</p>	<p>- oil lubricated vacuum pumps - oil free dry scroll pumps - high and ultra-high vacuum pumps</p>	<p>No</p>	<p>?</p>
<p>ALL – STAR INC. (USA)</p> <p>http://www.all-star-usa.com/index.html</p>		<p>Turbo Blowers Regenerative blowers and vacuum pumps Rotary vane pumps and compressors rocking piston pumps and compressors maxi-aeration VFD and controls</p>	<p>No</p>	<p>?</p>
<p>Alup-Kompressoren BV (Netherlands)</p> <p>http://www.alup.com/us/?from_lang_sel=yes</p>	<p>Sami Suokas Business Manager Finland & Baltic States Customer Center Tel: +358 (0)20 718 9207 e-mail: sami.suokas</p>	<p>Screw Compressors Piston Compressors</p>	<p>No</p>	<p>?</p>

	@alup.com			
American Compressor Company (USA) http://americancompressor.com/		Industrial fans industrial blowers rotary positive blowers standard compressors reconditioned blowers high – pressure air and gas compressors	No	?
Anver Corporation (USA) http://www.anver.com/		Suction Cups, Vacuum Cups, Vacuum Pumps, Vacuum Lifters, Vacuum Lifts, Vacuum System Components and Vacuum Lifting Equipment for All Applications	No	?
Ariel Corporation (USA) http://www.arielcorp.com/		Reciprocating Compressors Rotary Compressors Process Compressors	No	?
Atlas Copco (Sweden) http://www.atlascopco.com/us/		Air and gas compressors, Air and gas treatment, Airline Accessories, Air motors, Assembly solutions, Assembly tools, Compaction Equipment, Concrete Equipment, Demolition equipment, Drill rigs and rock drills, Drilling Tools, Energy recovery solutions, Expanders, Generators, Ground and rock reinforcement tools, Grouting equipment, Hoists & Trolleys, Light towers, Loading and haulage equipment, Material removal tools, Milling equipment, Mobile crushers and screeners, Paving equipment, Portable compressors, Pumps, Underground ventilation systems	Yes http://www.atlascopco-gap.com/download_file.php?id=457	?
Barber-Nichols, INC (USA) http://www.barber-nichols.com/		Compressors and Fans Heat Engines Electric Power Products Pumps Rocket Engine Turbo pumps Turbines	Yes http://www.barber-nichols.com/services/design	?
BPA (UK) http://www.bpauk.com		Vacuum pumps Blowers	No	?

/pages/home				
Bristol Compressors Intl (USA) http://www.bristolcompressors.com/		hermetic compressors	No	?
Burckhardt Compression AG (Switzerland) http://www.burckhardtcompression.com/		Compressors (reciprocating compressors) Compressors valves components	No	?
Busch LLC (USA) http://www.buschusa.com/	Busch Vakuumtechnik Oy Sinikellontie 4 01300 Vantaa Phone +358 (0)9 7746060 Fax +358 (0)9 7746066 in-fo@busch.fi www.busch.fi	Rotary vane vacuum pumps side channel blowers dry screw vacuum pumps liquid ring vacuum pumps dry claw vacuum pumps and compressors scroll vacuum pumps dry pressure vacuum pumps roots pumps		?
Cryostar France SA (France) http://cryostar.com/		Centrifugal pumps Centrifugal compressors Oil break turbines Compressor loaded turbines Recovery turbines Turbo machines (Magnetic bearing turbo generator) - Power output: 300 kW - Speed: 30 000 rpm	Yes http://www.cryostar.com/web/pressure-let-down-station.php	?
Ekomak Endustriyel Kompresor Ve Makina San.Tic.As (Turkey) http://www.ekomak.com.tr/index.php?dil=en		Screw Compressors Dryers variable speed compressors turbo air compressors vacuum compressors oil-free screw compressors	No	?
Edwards Ltd (UK) http://www.edwardsvacuum.com/	TECALEMIT FLOW OY Tiilitie 6 A 4	Semiconductor Pumps Dry vacuum pumps Liquid ring pumps	Yes https://www.edwardsvacuum.com/	?

cuum.com/	01720 Vantaa +358 (0)29 006 280 asiakaspalvelu@tecaflow.fi		m.com/search/Re-sults.aspx?q=active%20magnetic%20bearings	
EBARA Corp. (Japan) http://www.ebara.com/en/		Pumps Compressors Chillers and cooling towers Blowers	Yes https://www.ebara.com/en/company/rd/jihou/195_en.html	?
Elgi Equipments LTD (India) http://www.elgi.com/		Rotary screw compressors Reciprocating compressors Railway compressors New generation compressors <ul style="list-style-type: none">• Vayu Air Compressor (Oil-Flooded)• Vayu Air Compressor (Oil-Free)	No	?
Enerflex LTD (Canada) http://www.enerflex.com/		<u>Natural Gas Processing</u> - Inlet Separation/Filtration, Molecular Sieve, TEG Dehydration, Cryogenic Gas Plant, Amine Sweetening, HC Liquids Fractionation, LPG Extraction <u>Heavy Oil Processing</u> - SAGD Modules, Evaporator and Crystallizer Units, Water Processing Modules <u>Carbon Dioxide Processing Refrigeration</u> - Fuel Gas Compression, Landfill / Digester Gas Processing, Hydrogen Systems	No	?
CompAir Inc. (USA) http://www.compair.com/default.aspx	Comtec (Finland) Oy Sulankuja 3 04300 Tuusula Finland Tel: +358-9-239-31-44	Compressed air filters Rotary screw air compressors Oil free compressors oil-less rotary screw compressors Reavell High Pressure Piston Compressors	Yes http://www.compair.com/Products/OilFreeRotaryScrews.aspx	?

	Fax: +358-9-239-31-45	Standard Piston Compressors Oil-free and Oil-lubricated		
FS-Curtis Air Compressors (USA) http://us.fscurtis.com/		Reciprocating Air Compressors Rotary Screw Air Compressors Oil Free Screw Compressors SR Series Compressors Vacuum Pumps Air Treatment Toledo Products Genuine Parts	No	?
Gajjar Compressors PVT. LTD (India) http://www.aircompressorindia.com/		Reciprocating Piston Air Compressors Lubricated and Non-lubricated Water Cooled air compressor Screw Compressors Reciprocating Dry Vacuum Pumps Oil Free Dental Compressor Air Dryer	No	?
Gardner Denver (USA) http://www.gardnerdenver.com/	<i>Etu-Hankkion katu 9 33700 Tampere Finland Tel: +358-205-44-141 Fax: +358-205-44-3900 in-fo.tampere@gardnerdenver.com</i>	Blowers, Compressors, Dry-Break Couplings, Ejectors, Fueling Systems, Loading Arms, Priming Valves, Pumps, Safety Access Equipment, Storage Tank Equipment, Tank Truck Equipment, Transmissions & PTOs, Vacuum Pumps & Systems, Water Jetting	Yes http://www.weftec.org/gardnerdenver/	Competitor
GE Nuovo Pignone (Italy) www.gepower.com/nuovopignone Phone: +390554238280 Fax: +390554232163		Steam Turbines Centrifugal Compressors Reciprocating Compressors Pumps Control and Safety Valves Electrical Generators Electric Motors Air Coolers	Yes http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCkQFjAA&url=http%3A%2F%2Fwww.ge-ener-gy.com%2Fcontent%2Fmulti	Maybe

			me-dia%2F_files%2Fdownloads%2FGE_ICL_012313-WEb.pdf&ei=S6BUonBGenV4wSk_IHYCg&usg=AFQjCNFG7aZbkHEt1WUVy8d7EdPYzd2OPg&sig2=W0G7I-MmPd3WqteoPZAxUw&bvm=bv.56146854.d.bGE	
Gebr. Becker GmbH & Company (Germany) http://www.becker-international.com/index.php?id=1&lang=002&func=&list=&shop_obj=&shop_index=		Vacuum pumps - Oil – free rotary vane pumps Compressors - Oil – free compressors Pneumatic equipment	No	?
Havayar Air Compressor MFG (Iran) www.havayar.com		Screw Compressors Turbo Compressors High-pressured air compressors Oxygen Compressors Air dryers	No	?
Hitachi Ltd. (Japan) http://www.hitachi.com/		Power systems IT systems Railway systems Construction machinery Automotive systems	Yes http://www.hitachi.com/products/si/compressor/radial/magnetic.html	?
Howden Group Ltd (UK) http://www.howden.com/en/default.aspx?d=n Phone: +441418852890 Fax: +441418852890		Axial Fans Centrifugal Fans Cooling Fans Compressors Blowers Rotary Heat Exchangers Other Products	Planning to use http://www.howden.com/en/products/blowers/submergedblowers/default.htm They have been planning since 2009 to replace oil bearings with	Maybe

			active magnetic bearings and it seems that now they do have capability to design blowers utilizing AMB's	
Israel Compressor Industries Ltd. (Israel) http://www.compressors.co.il/		Oil-injected screw compressors Oil-free screw compressors Compressed air dryers Compressed air filters Piston type air pumps and compressors	No	?
Javac PTY Ltd. (Australia) http://www.javac.com.au/		Liquid Ring Pumps Oil Free Rotary Pumps Side Channel Blowers Rotary Vane Vacuum Oil Diffusion Pumps Roots Vacuum Pumps Rotary Piston Pumps Turbo molecular Pumps Cryopumps Diaphragm Pumps Liquid Pumps Dry Vacuum Pumps Dry Compressing Screw Pumps Turbo Stream Blowers	No	?
Josef Mehrer GmbH & Co http://www.mehrer.de/1/startseite/		Oil-free piston compressors Oil-free screw compressors	No	?
Kaeser Kompressoren GmbH (Germany) http://www.kaeser.com/		screw compressors, Mobil air portable compressors, oil-less reciprocating compressors, Omega rotary lobe blowers, vacuum packages, refrigerated and desiccant dryers, filters, condensate management systems	No	?
Kawasaki Heavy Industries LTD (Japan) http://www.khi.co.jp/english/		Machinery, Infrastructure, Industrial, Environmental & Recycling Facilities and Equipment, Hydraulic Components, Industrial Robots, Energy and Power Plants, Ships, Rolling Stock, Leisure & Power Products, Aerospace	Yes http://www.khi.co.jp/machinery/product_upload_pdf/pdf_machinery_A6_01.pdf	?

Maine Air Power Inc. (USA) http://www.maineairpower.com/		Reciprocating compressors Rotary Screw Compressors (oil flooded and oil-free) Dryers & filtration	No	?
Man Diesel & Turbo SE (Germany) http://www.mandieselturbo.com/0000002/Home.html		Turbo machinery Compressors Turbines Turbochargers	Yes http://www.mandieselturbo.com/web/viewers/news/template04.aspx?aid=18760&sid=1183	?
Mecos (Switzerland) http://www.mecos.com/en/		Bearings Sensors Control Units Integrated Systems Firmware Software Tools Services	Yes http://www.mecos.com/en/	Competitor
Mitsubishi Heavy Industries Ltd. (Japan) http://www.mhi.co.jp/en/		Machinery (medium and small size engines) Power plants Wind turbines	Yes http://www.mhi.co.jp/en/technology/review/abstracte-42-4-194.html	?
MTU Aero Engines (Germany) https://www.mtu.de/en/		Aircraft engines Industrial Gas turbines	Yes http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCKQFjAA&url=http%3A%2F%2Fwww.mtu.de%2Fen%2Ftechnologies%2Fengineering_news%2Fothers%2FBecker_Magnetic_Bearings_en.pdf&ei=w_GBUvHXN_oaF4ATH7oDgDQ&usg=AFQjCNHazAD-WSa84_wXCUeB16qqj6EWjqw&sig2=pkGp	?

			R9MdReFuAYT PDIrH6A&bvm =bv.56146854, d.bGE	
Oerlikon Leybold Vacuum GmbH (Germany) http://www.oerlikon.com/leyboldvacuum/en/	Oerlikon Vacuum Finland Tiilenlyöjän- kuja 9b 01720 Van- taa Tel: + 358 44 765 5853	Vacuum pumps Turbo Radial Blowers Vacuum systems Vacuum gauges leak detecting instruments	Yes <a href="http://www.id
ealvac.com/fil
es/ManualsII/
OerlikonLeybo
IdTurbovac340
UsersManual
_2.pdf">http://www.id ealvac.com/fil es/ManualsII/ OerlikonLeybo IdTurbovac340 UsersManual _2.pdf <a href="http://www.p
v-
maga-
zine.com/new
s/details/beitr
ag/oerlikon-
leybold-
vacuum-
introduces-
turbovac-
magintegra_1
00004180/#ax
zz2fE9vicJM">http://www.p v- maga- zine.com/new s/details/beitr ag/oerlikon- leybold- vacuum- introduces- turbovac- magintegra_1 00004180/#ax zz2fE9vicJM	?
Pfeiffer Vacuum GmbH (Germany) http://www.pfeiffer-vacuum.com/	SV Vacuumservi ce Oy, Sales Agency Hel- sinki Street: P.O. BOX 182 (Elimäenk 29C) FI-00510 +358-9-774 55 30	Rotary Vane Pumps, Dia- phragm Pumps, Piston Pumps, Screw Pumps, Mul- ti-stage Roots Pumps, Roots Pumps, Side Channel Pumps, Rotary Piston Pumps, Turbopumps, Pumping Stations, Meas- urement, Analysis Equip- ment, Leak Detectors, Con- tamination Management Solutions,, System Technol- ogy, Vacuum Chambers, Components, Valves, Feedthroughs, Manipula- tors	Yes (Turbo pumps) <a href="http://www.pf
eiffer-
vacu-
um.com/prod
ucts/turbopu
mps/magnetic
ally-
levitat-
ed/container.a
ction">http://www.pf eiffer- vacu- um.com/prod ucts/turbopu mps/magnetic ally- levitat- ed/container.a ction	?
PIAB AB (Sweden) http://www.piab.com/		Suction cups / grippers Vacuum pumps / genera- tors Vacuum cartridges / inte- gration Combined pump & gripper piSAVE Optimizing controls Vacuum conveyors for powder & bulk	No	?
Pneumofore spA (Italy)		Vacuum pumps	No	?

http://www.pneumofore.com/		Air compressors		
Quincy Compressor (USA) http://www.quincycompressor.com/		Rotary Screw Compressors Reciprocating/Piston Air Treatment Parts & Fluids Natural Gas Vacuum Pumps Air System Piping	No	?
Sanden Corporation (Japan) http://www.sanden.co.jp/english/		Automotive systems: Compressor, The heat exchanger for engines, The heat exchanger for air-conditioning Vending systems Retail store systems Living and environment systems	No	?
Siad Impanti Spa (Italy) http://www.siadmi.com/?lang=en		API618 Reciprocating Compressors for all types of gases Standard Compressors (PET) for bottling industry Air Separation Units for production of industrial gases Welding Cutting and Handling Technologies Systems for Automation, Supervision and Energy Distribution	No	?
SKF (Sweden) http://www.skf.com/group/splash/index.html		Ball bearings Roller bearings Bearing accessories Engineered products Track runner bearings High-/super-precision bearings	Yes http://www.skf.com/us/system/SearchResult.html?search=ac-tive+magnetic+bearings	?
Sterling Sihi GmbH (Germany) http://www.sterlingsihi.com/cms/en/home.html		Vacuum pumps Liquid pumps Engineered systems	No	?
Sundyne Corporation (USA) http://www.sundyne.com/		Pumps and compressors	No	?
Tamrotor Compressors		Compressed air plants,	No	?

AS (Norway) http://www.tmc.no/		compressed air filters. Compressed air tools and compressed air dryers. Non-oil compressors Boosters Screw compressors Vane compressors Blowers		
Tecumseh Products Company (USA) http://www.tecumseh.com/en/europe		Reciprocating Compressors Rotary Compressors Scroll Compressors Condensing Units	No	?
Travaini Pumps (USA) http://www.travaini.com/		Liquid Ring Vacuum Pumps & Compressors Dynaseal(tm) Systems Liquid Ring Systems Rotary Vane Pumps & Sys- tems Centrifugal Heat Transfer Pumps	No	?

Table 1 HS-Eden potential competitors/customers

4.4 Regional overview

The largest producer of global magnetic bearings is North America. Yet, the Asia Pacific market and countries including Japan and China are expected to make tremendous growth during the coming years.

4.4.1 US bearing market growth

US demand is expected to rise 4.4% annually through 2017. Ball, roller, and plain bearing demand in the US are forecast to increase by 4.4 percent per year to \$12.9 billion in 2017. This will be a notable improvement from the growth registered during the 2007 to 2012 period. Market advances will be supported by improved conditions in motor vehicle manufacturing, the largest market for bearings. The trend toward “in-sourcing” US durable goods manufacturing will create opportunities in a variety of markets. (Reportsreports 2016.)

❖ **Engine, turbine & power transmission market to grow the fastest**

The engine, turbine, and power transmission equipment market will experience the fastest growth, bolstered by continued growth in the wind energy segment. The automotive market will not be far behind, outpacing overall bearing demand gains. Bearing manufacturers will benefit from a particularly strong growth in heavy truck and bus production, as these vehicles utilize more bearings (both in unit and dollar terms) than passenger cars. (Freedonia Group 2016.)

❖ **Roller bearings to offer best growth opportunities**

Roller bearing demand is expected to continue to outpace other product types, supported by sales of higher value, including technologically advanced bearings. Roller bearings will continue to be the largest product segment, comprising over 40 percent of demand in 2017. (Freedonia Group 2016.)

❖ **OEM bearing applications to outpace MRO uses**

The demand for bearings in OEM applications will outpace the industry average, due to ongoing growth in US durable goods output. Many durable goods manufacturers are building or upgrading production facilities in the US, boosting demand for components such as bearings. Increased production of machinery will stimulate gains, since these industries are heavy users of more advanced, high value bearing products. (Freedonia Group 2016.)

❖ **Bearing shipments from US plants to track demand**

Bearing shipments from US plants are forecast to increase by 4.3 percent annually to \$12 billion in 2017, approximating demand growth. Industry output will be stimulated by growth in several key domestic bearing-using industries (e.g., motor vehicles and machinery) and by rising demand in a number of export markets. However, intense competition from bearing suppliers in lower cost countries is expected to hold back price increases. Both imports and exports will post steady gains through 2017, and the US will remain a net importer. (Freedonia Group 2016.)

4.5 Market analysis – compressors and vacuum pumps

4.5.1 Middle East

The market estimation for 2018 according to the Global Strategic Business Report for compressors and vacuum pumps is \$258.4 million.

Suppliers	Product	End users
Samsung Techwin	Industrial air compressors	Shaybah plant
Atlas Copco	Turbo compressors	Sepco III Al Arab constructing company
Hitachi LTD	Compressors	Saudi Aramco (oil company)
Mitsubishi MCO	Steam Turbines and Compressors	Whole Middle East market

Table 2. Middle East key players in the compressor and vacuum pump industry

4.5.2 Asia Pacific

The market evaluation for Asia Pacific according to A Global Strategic Business Report for compressors and vacuum pumps (2012) for 2018 is estimated \$900.7 million

	Suppliers	Product	End users
China	Sanden	Piston compressors	Food manufacturers
Market	Nannjing Aotecar	Diaphragm compressors	pharmaceuticals
	Denso	Screw compressors	mining companies
	Visteon	Sliding vane compressors	nuclear plants
	Valeo	Turbo compressors	gas, chemicals and petro-

	Delphi Panasonic		chemicals companies
India Market	Atlas Copco ELGI Equipments Limited Ingersoll-Rand	oil-injected compressors Air compressors, air dryers, air filters and air receivers.	Pulp and paper industry Mining, construction, oil&gas, textile, electric&electronic industries etc.
Australia	Mitsubishi	Power Generation Compressors(application in liquefied natural gas	Royal Dutch Shell

Table 3. Asia-Pacific providers of compressor and vacuum pumps

4.5.3 Europe

The Global Strategic Business Report for compressors and vacuum pumps (2012) estimates European market for 2018 \$3.3 billion. Increasing demand for oil-free compressors is forecasted.

Countries	Key players
UK	Sterling Fluids Systems LTD
Germany	Siemens AG
France	Valeo SA
Italy	ABAC Aria Compressa SpA
Spain	Cubigel Compressors S.A
	Huayi LTD
Russia	HMS Group
	RusTurboMash
	Siemens AG

Table 4. Key players in European compressor market

4.5.4 USA

A Global Strategic Business Report for compressors and vacuum pumps(2012) estimates USA market for 2018 \$5billion.

The main key players in the USA compressor and vacuum pump technology are:

- Delphi Automotive LLP
- Dresser-Rand CO.

4.5.5 Canada

Canadian compressor and vacuum pump market is estimated to reach \$283.6million according A Global Strategic Business Report for compressors and vacuum pumps(2012).

The main key players in the Canadian market are:

- Calsonic Kansei Corp.
- DMW Corporation
- Ebara Corporation
- Kobe Steel

Global Market perspective for compressors and vacuum pumps

	2012	2013	2014	2015	2016	2017	2018
USA	3900	4100	4300	4461	4672	4871	5000
Canada	224	231	241	252	263	273	283
Japan	308	320	335	353	371	389	407
Europe	2577	2625	2705	2818	2960	3123	3300
Middle East	189	198	2010	222	234	246	258
Asia-Pacific	604	639	683	736	789	844	900
Latin America	278	292	310	329	350	370	390

This is market estimation taken from A Global Strategic Business Report for compressors and vacuum pumps. Data on the table is in US\$ Million

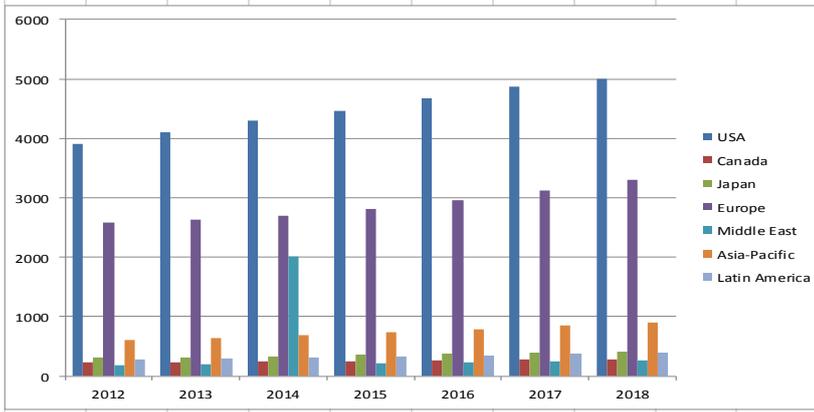


Figure 3. The global market perspectives for compressors and vacuum pumps

4.6 Market opportunities

The global industry of downstream hydrocarbons is facing a dramatic change. Refineries and chemical plants in North America are reconfiguring their systems to show greater conformity with the changing feedstock compositions. Besides, Middle East poses a great need for AMB bearings as there is an impulse to invest tremendously to comply with new technological capacities for oil and gas, whereas Europe intends to reduce the capacities. Likewise, countries including China, India, and Brazil are making significant investments to improve their technological basis in order to align their production paradigms with the growing economies. However, each of these create their own set of requirements and issues, but they may also have many requirements in common. Since they are intended to shift their technological paradigms; there are several market opportunities for HS-Eden. HS-Eden may likely to target these countries to substantially expand its market approach and customer base.

China is projected to pose the strongest gains for the national market in terms of dollars. China is by far projected to place almost half of the demand for addi-

tional magnetic bearing products by 2018. The motor vehicle industry in the country is making tremendous progress and supports the GDP growth through making significant investments in manufacturing output and vehicle sales.

HS-Eden may find great opportunities in the Chinese market, particularly in the motor vehicle industry. Contrarily, India is relatively smaller, but hereby holds a large bearing market. The bearing market in India is expected to further expand on an annual basis. Therefore, India may also be a target market for HS-Eden. Some smaller markets for bearing reported are Iran, Turkey, Indonesia, Thailand, and Malaysia, which are projected to record healthy sales advances for magnetic bearings.

One of the strongest market performances for magnetic bearings is represented by the US market among any other developed nation. Bearings in the US play a significant part in accelerating economic growth through enhancing product outputs that are technologically durable. Contrastingly, the sales of bearing products within the Western Europe and Japan are forecasted to be limited and the market gains from these areas are projected to remain below the world average level.

4.7 HS-Eden target marketing and positioning

4.7.1 Geographical target

HS-Eden has not set any geographical limitations. End users that would benefit from high speed machinery are the automotive Industry, chemicals industry, industrial & manufacturing, oil & gas, petrochemicals and other industries. The target segment of HS-Eden is compressor and vacuum pumps manufacturers and these manufacturers are scattered around the globe. HS-Eden marketing research is based on the A Global Strategic Business Report for compressors and vacuum pumps and according to the report the demand for compressors and vacuum pumps is constantly growing. The report anticipates a steady market growth from 2012 to 2018. Below is the estimated demand for 2018:

- Middle East \$258.4 million
- Asia-Pacific \$900.7 million

- Europe \$3.3 billion
- USA \$5 billion
- Canada \$283.6 million
- Latin America \$390 million

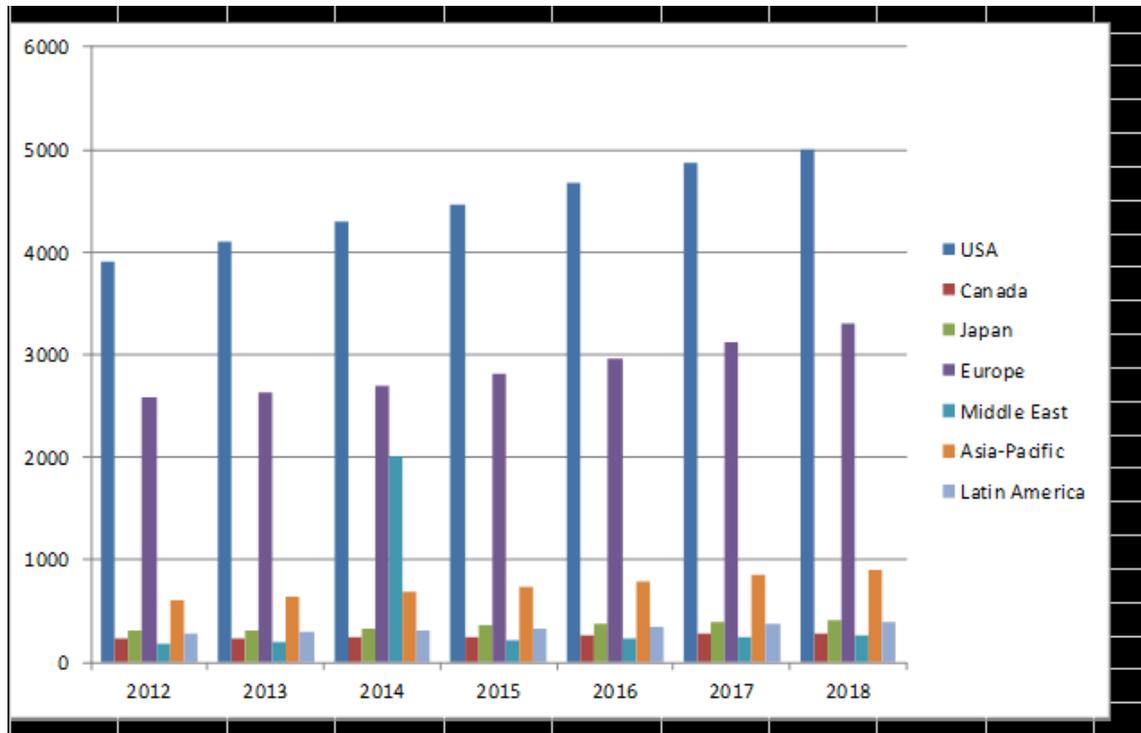


Figure 4. Global market estimation for compressor and vacuum pumps in US \$ million.

4.8 Target segment

A comprehensive market research including a visit to the Birmingham Conference and Exhibition helped to identify new market opportunities beside compressor and vacuum pump manufacturers. Electric motor manufacturers are another segment that HS-Eden has to explore. They buy different components including bearings from different suppliers, so there is a huge opportunity for HS-Eden to tap into this segment.

Distributors are another target segment that HS-Eden should divert its focus on including bearing manufacturers since some of these bearings manufacturers do not have the expertise in active magnetic bearing technology. They mainly

produce conventional bearings therefore HS-Eden can either create joint development of AMB technology or simply sell to them. HS-Eden potential customers are business enterprises, and therefore a B2B approach is required. Business-to-business marketing is about meeting the needs of other businesses, though ultimately the demand for the products made by these businesses is likely to be driven by customers in their homes (Harrison et al., p. 02).

4.9 Positioning

Before developing a marketing and sales strategy every organization needs to analyze the marketing environment that it is going to operate in to define how the organization stands against competitors. HS-Eden is a start-up company that needs to fundamentally analyze its competitive strength and position of the business in the AMB market. Porter's Five Forces Model certainly is a good tool for assessing and evaluating the competitive strength and position of a business organisation. This theory is based on the concept that there are five forces that determine the competitive intensity and attractiveness of a market. The following chapter describes how these forces affect the HS-Eden market.

4.9.1 Analyzing HS-Eden positioning using Porter's 5 forces model

Threat of new entry (weak)

- A long research and development process.
- High quality engineering and design is required.

Supplier power (weak)

- Many suppliers.
- Not many components needed.

Buyer power (strong)

- Buyers have very specific requests for AMB's.
- Buyers can easily choose alternative options.
- Buyers are price sensitive.

Threat of substitutes (weak)

- Other types of bearings are available but do not support the same speed.
- Alternative bearings cost less but they require lubrication and maintenance.

Competitive Rivalry (strong)

- Not many but strong competitors
- Customers are loyal to their brands
- Threat of being acquired by a competitor

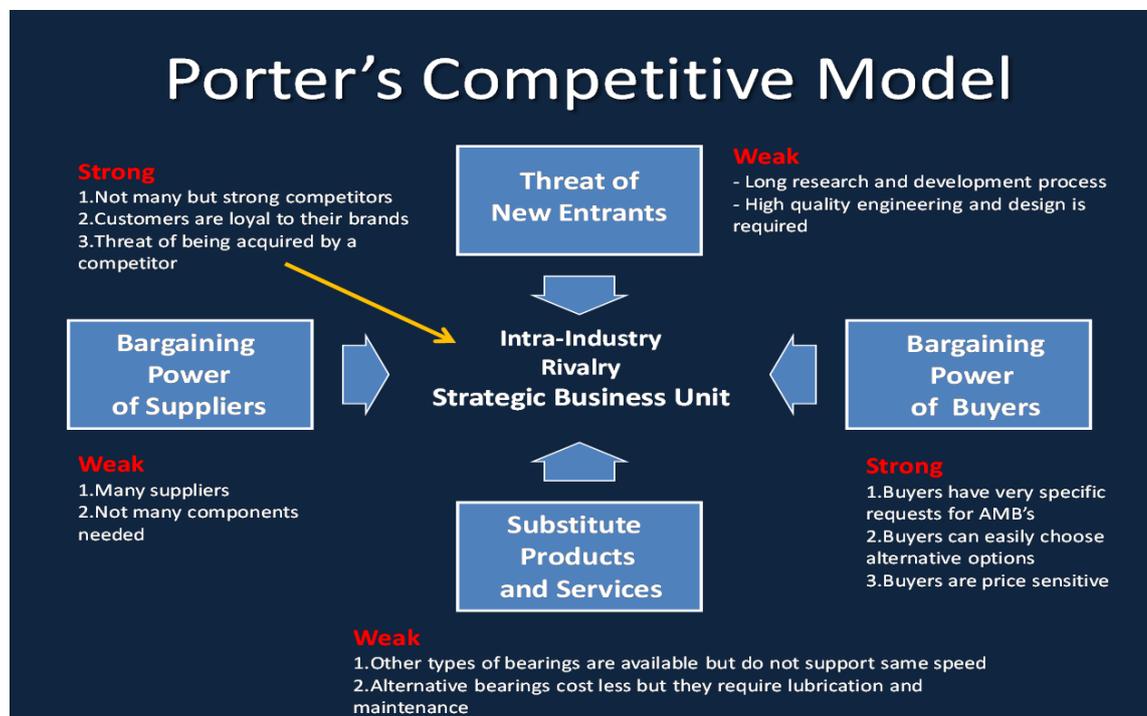


Figure 5. The Porter's 5 Forces Model for HS Eden

5 Survey results and discussion

The results from surveys are narrated and discussed within this chapter. The results obtained are transcribed and presented collectively to give a coherent and understandable view towards the findings. The major focus in the survey is

laid upon investigating the factors that cause industry professionals and engineers to choose magnetic bearings. Emphasis is laid upon the identification of marketing strategies which cause them to choose for a certain provider and what they exactly look at when opting to get magnetic bearings supply. The results identified could viably be integrated with the marketing strategy for HS-Eden to play as a global provider.

5.1 Maintenance concerns

The individuals interviewed from five different industries provided significant insights towards the marketing prospects from the B2B consumer perspectives. The questions in the interview mainly focused on identifying what challenges the companies usually face with magnetic bearings and what factors appeal to them when getting bearing supplies from providers. It was also inquired what major factors tends to make them shift their focus towards or away from buying magnetic bearings. However, eight respondents dealing in underwater compressors, the semiconductor industry, gas turbines, and the energy production industries replied in a similar manner.

According to respondents, they choose companies that offer maintenance for magnetic bearings. Conversely, the eight respondents from the medical industry showed their concerns towards warranty. They prefer to get bearings that come with significant warranties, as according to them, issues occur within a certain time limit of usage. Increase in friction leads to deterioration of equipment functioning and reliability. This is because the friction and noise in rotary motion and the vibration levels are of core concern.

Usually the bearings lead to create functional barriers as they are prone to make contact between the rotor and support. Moreover, the outer casing serves as a resonance box, whose frequency sometimes alters the functioning of other working parts. Therefore, maintenance is something that is deemed complementary for magnetic bearings.

5.2 Cost and sustainability

Respondents working in renewable energies referred cost and sustainability as the major factors that appeal to them. They preferred active magnetic bearings over traditional bearings as they can bring cleaner, efficient, and reliable solutions for renewable energy and recoverable energy.

Production of electric power is coupled with harmful environmental effects, and therefore the focus has been shifted to harnessing of renewable energy resources utilizing the existing energy resources. For electric power production, the process gas is expanded in a turbine and is driven with high energy generators and integrated controls. Since the operations occur to ensure energy sustainability, respondents from renewable energy sector tend to search for active bearings in the market that ensure the lowest friction losses and efficient elimination of toxic oil lubricants. All these factors form the reliability measure for these industries which prefer to get the bearings that offer the highest reliability.

The targets for energy-efficiency and sustainability form the major incentive for consumers to switch to active magnetic bearings. Engineers from the different industries are overwhelmed to find ways through which the processes can be made more sustainable. The quest for sustainability has made the targets for bearings tougher than ever. Since the active magnetic bearings that HS-Eden is introducing to the market offer a whole range of advantages, there is a great scope for the company. Marketing based on performance for HS Eden can also helpfully change the consumer priorities. Environmental impact, minimization of energy variance, extension of warranties, and the management of total costs for the products are the major factors that drive the consumers' choices within the different industries in the UK for bearing usage.

5.3 Strong communication

Successful marketing operations of a technology based start-up depend upon the operating environment. Significant levels of globalization and dynamism are required to quickly react to the market changes as the markets for technology are prone to undergo turbulences at shorter intervals. Business reactions taking

place in technology based start-ups mainly result from a continuous, accurate and rapid flow of information, for which a greater integration between the information technology and information systems is required (Avramović et al. 2010).

The market for magnetic bearings is in the developmental phases. However, the bearings hold a greater proportion of market and there exist significant suppliers of the active magnetic bearings competing profusely to reach the different industries. The demand for active magnetic bearings is wedged between the prices, re-configuration of traditional paradigms, and quality maintenance. Hence, the respondents have showed greater preferences for choosing magnetic bearings with companies that provide maintenance.

This corresponds to the fact the consumers appreciate communication. Deliberate consideration of communication strategies with B2B consumers and incorporation of information technologies may create profound effects upon HS-Eden's business functions. Scaling and marketing can be simple when the marketing strategy is based upon the different ways various industries react to and pick up the technology. Applicability of marketing practices becomes more advanced when the marketers have a clear idea of consumer demands, reactions, and preferences. The marketing factors are quite different from the technology directives in any company, which forms the prime focus for policy makers to shape the marketing strategies for the given company.

5.4 Relationship building

There were no significant differences found between the respondents relative to their industries. However, their views regarding active magnetic bearings and their utilization in place of traditional bearings vary, but their views upon marketing factors seem quite similar. All the respondents are convinced over the point that they prefer to contact companies that offer encouragement for relationship building. Their views entail that they require something more than the traditional 4Ps marketing mix to become attracted to any company to suffice their technology demands.

Findings that consumers are more inclined to make deals with companies that offer a development of relationship in their marketing strategies have been reported also by Brady et al. (2008 p. 113). According to the authors, marketing strategies that concentrate upon relationship building are more successful as this approach tends to meet and satisfy customer demands. Furthermore, customer satisfaction can be achieved through overcoming their issues and effectively responding to the problem they face with equipment or services provided by the company. Precisely, it can be stated, the more efficient are the services provided, the higher is consumer loyalty.

Leek et al. (2003, p. 89) and Naudie and Holland (2004, p. 167) have also described technology as one major factor that impacts the activities related to marketing strategies. Securing of profitable relationships with consumers is only possible if the technological innovations run hand in hand with effective communication. Technology impacts the way companies communicate with consumers. Amongst these, promotional activities are of core importance as they create the first impression mainly for the start-up companies. Four out of ten respondents replied for using traditional bearings and not the active magnetic bearings because of several reasons.

The first and foremost reason is that the workforce is used to these and reconfiguration of technologies would require greater investments to train their workforce in order to ensure conformity with the advanced working mechanisms. However, when illustrated about the purpose of active magnetic bearings and the ways how they may impact upon their working practices and how good they might prove to be if used in place of traditional bearings, the respondents seemed to develop interest. This verifies that despite the benefits that new product might bring and whether the innovation would simplify their processes and bring considerable benefits, is highly dependent upon the way the message is conveyed.

According to Derozier (2003 p. 3), how new buyers perceive new product/services offered from new entrants in the market, depends how the new entrants communicate their offering to the potential customers, convincing poten-

tial customers that new products, services are better than pre-existing ones. The e-marketing revolution undoubtedly offers the best way to present customers with personalized and customized effects of marketing strategy. The efforts typically include sales management, management of marketing campaigns and understanding of the market.

5.5 Feasibility and innovation

Representatives from semiconductor industries replied that the world and livelihoods are tied up to global conditions. Innovation is the major point of axis for the semiconductor industries as it is one of the fastest and ever emerging industries. Since the very beginning, the semiconductor industry has undergone persistent innovation and growth. The semiconductor industry posits an increased demand for magnetic bearings due to the concurrence of new emerging markets and technology. There has been a variety of market drivers reported that make the application of AMBs within the semiconductor industry essential for growth (Siemens 2011.)

The major constrains that limit bearing usage for the industry are higher prices of magnetic bearings and the large size bearings (Ganstrom 2011, p.4). Professionals in the semiconductor industry prefer a range of bearings that are both financially and environmentally feasible and must increase the benefits for improved efficiency and consistency.

The major aim of replacing traditional bearings with active magnetic bearings in the semiconductor industry hold is to harness such mechanical products that increase the positivity of applications and processes as regards the environment. Newer technologies are highly preferred which exhibits a positive attitude towards the environment. Prior to making a deal with any bearing company, the one thing a semiconductor companies ensure is that the products being bought are highly robust in their activity, reliable for the prospective application, and yet innovative and sustainable.

Apart from the medical industry that showed less support for AMB usage, respondents from the fur industries implied that with increasing needs for sustain-

ability and cleaner energy production, the industries are growing more responsible and in such instance they give preference to the bearing products that can address all their needs and demands.

To sum up, the magnetic bearing industry can be classified on the basis of industrial applications. This chapter has identified the viewpoints of industrial professionals regarding the need and requirements for active magnetic bearings. These findings may help HS-Eden to adopt an appealing marketing strategy to acquire a substantial customer base.

6 Marketing strategy for HS-Eden

This chapter offers marketing strategy options for HS-Eden. In light of the survey results and global market analysis, it becomes clear that innovation alone is not appealing to consumers unless it is supported with an enthusiastic marketing strategy that must align innovation with their needs and requirements while keeping the feasibility of usage the core concern.

6.1 Discussion

Formulation of a marketing process is an iterative as well as an interactive process. The sequence involves understanding of consumer behaviors, different market segments, selection of the target segments, and designing of offerings that match the market needs. Positioning the products in a way consumers expects is probably best way to differentiate the company offerings. (El-Ansary 2006 p. 292.)

The process involves value creation which is achieved through the product and pricing, communication of value, which is referred to as promotion, and the delivery of value (channels). Marketing strategies are developed based on the competition level, product/service value offering and objectives of the company. The strongest side of HS-Eden is that it is a university based start-up and offers an innovative product that is made for the market after years of research. The HS-Eden product offers a variety of benefits such as sustainability, high

throughput, and efficiency. These features provide a significant customer value and satisfaction which that is the key to customer loyalty.

6.2 Important strategy requirements for HS-Eden

HS-Eden is in the phase of developing a marketing strategy including selling. The core concept of the HS-Eden strategy is to continuously create value for the customer by offering the most advanced technology in the market.

Research findings indicate that the AMB market is a price driven market, and therefore innovative product is not good enough. The HS-Eden product must be also price competitive. AMB's are very closely associated with high price, so from the start HS-Eden's aim has been to lower the costs in order to gain price competitiveness. There are two options to enhance HS-Eden's sales: pull and push marketing strategies.

6.2.1 Pull marketing

Pull marketing is a method of advertising companies use to try to get consumers to find the company on their own. The idea is that people will find the company because the company was able to build a successful brand. This would mean that the company has offered a valuable product and created enough social media visibility to become something that a person wants. (Stamoulis 2013). In the case of HS-Eden a pull strategy would be to educate the end users about AMB's so that they would request the product down the supply chain.

6.2.2 Push marketing

Push marketing is an approach that tries to put advertisements in front of someone who does not necessarily have any knowledge of the company. Push marketing strategies may involve cold calling, advertising banners, or generating referrals. They are designed to get others to promote the company and "push" the idea that the company is something of value. (Stamoulis 2013.) HS-

Eden can utilize the push strategy simply by contacting directly either motor manufacturers or OEM's and pushing the selling up the supply chain.

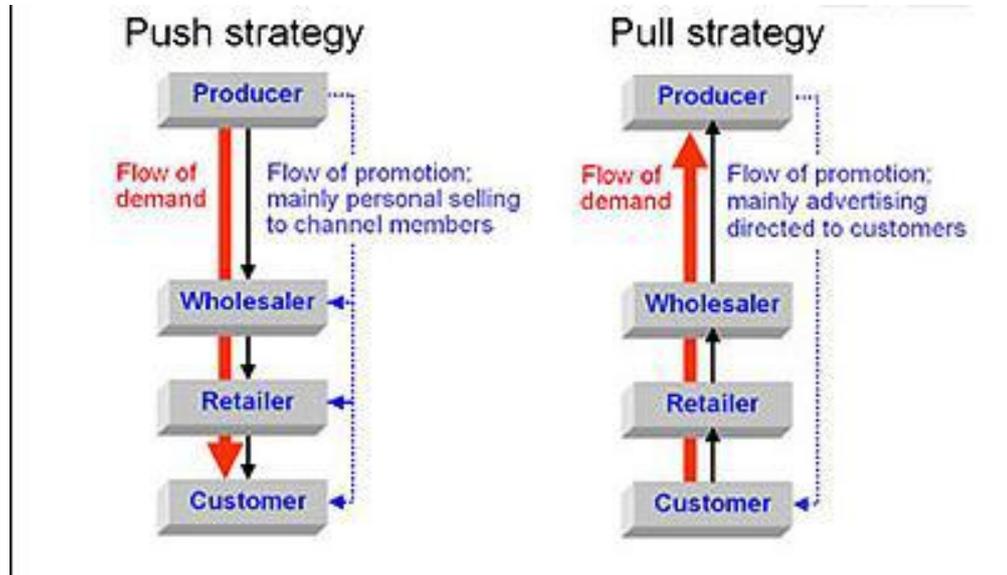


Figure 6. Push and pull marketing strategies (source:<http://www.stevetoms.net>)

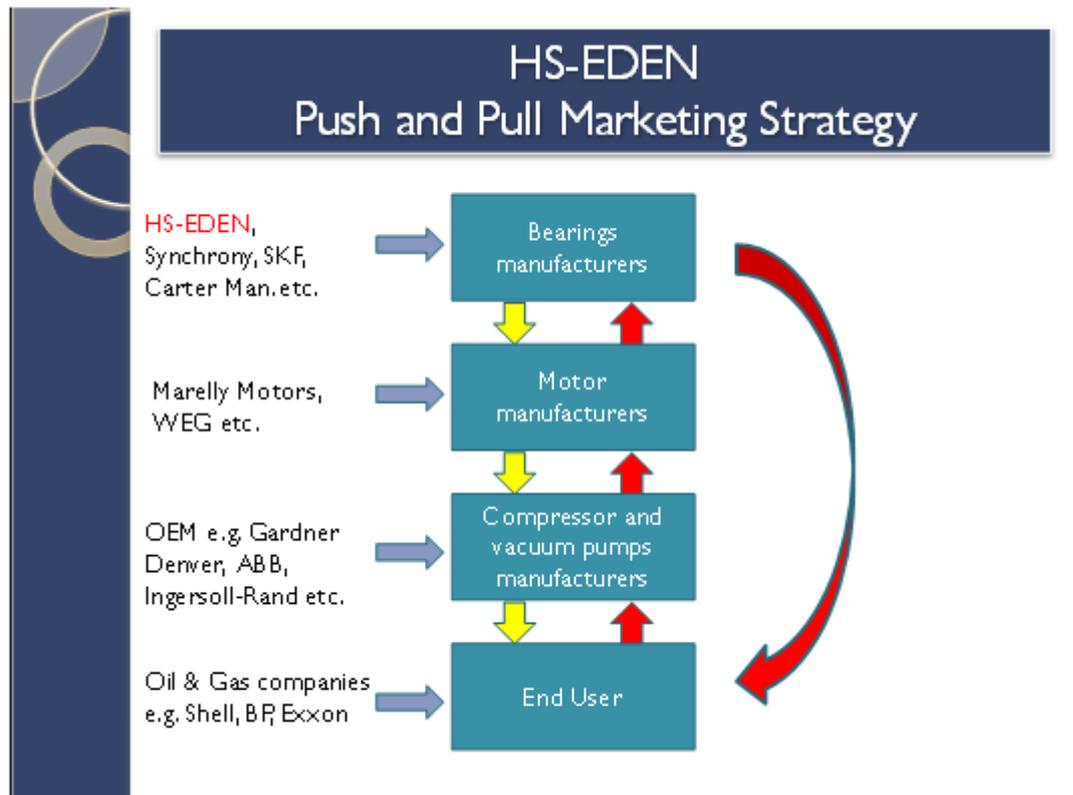


Figure 7. HS-Eden push and pull strategy

6.3 Sales strategy

HS-Eden should adopt *the Customer Intimacy* as the main sales strategy as it is the most appropriate strategy for HS-Eden e.g. identifying potential customers and building up a strong relationship with them. HS-Eden faces strong and well established competitors in the AMB market that have already developed AMB technology. Therefore *Product Leadership* approach certainly is not suitable for HS-Eden. Also, HS-Eden as a start-up company with limited resources is unable to apply *Operational Excellence* approach. Bringing the costs down and gaining price competitiveness paired with relationship building with key customers is the only way for HS-Eden to maintain a healthy start and prosper in the AMB market.

6.4 HS-Eden sales channels

To push the product to the market, HS-Eden must utilize all potential sales channels. The more channels HS-Eden uses, the more opportunities there are to sell. The question is which sales channels would be the most appropriate for HS-Eden.

6.4.1 Online marketing

HS-Eden has to create a website where potential customers can browse through and purchase the products. A bearings marketplace is another channel that could be utilized by HS-Eden to push the product to the market. BearingNet Ltd is one example of an online market place for bearings, where companies have the opportunity to buy and sell bearings just like in e-bay.

6.4.2 Telemarketing

Telemarketing might be an option, but not the best one for HS-Eden, because business enterprises are less likely to make purchases over the phone. As mentioned earlier, in the B2B market decision making is more complicated than in the B2C market and quite often many people in an organization are involved in purchasing industrial products. Therefore the buying decision takes much longer than in the consumer market.

6.4.3 Distribution

Distributors are another sales channel. They have access to and a good knowledge about the bearing market and are willing to purchase HS-Eden AMB's. Therefore HS-Eden must utilize this channel as an extra source to push its product to the market. This channel would also assist HS-Eden to reduce marketing costs as distributors themselves would take care of marketing and advertising.

6.4.4 Value added resellers

This channel refers to companies that buy a product, then add value to it and resell it, or integrate the product into a bigger product and sell it as a whole solution. For instance Gardner Denver, an American compressor manufacturer, buys different components from different suppliers and integrates them into a compressor and sells it as a whole package to the end user.

6.4.5 Direct Selling

Using this channel would enable HS-Eden to control its sales. Also, selling directly to the customer not only gives HS-Eden greater profit margin, but also makes it possible to capitalize this opportunity to build a long-lasting relationship with the customer.

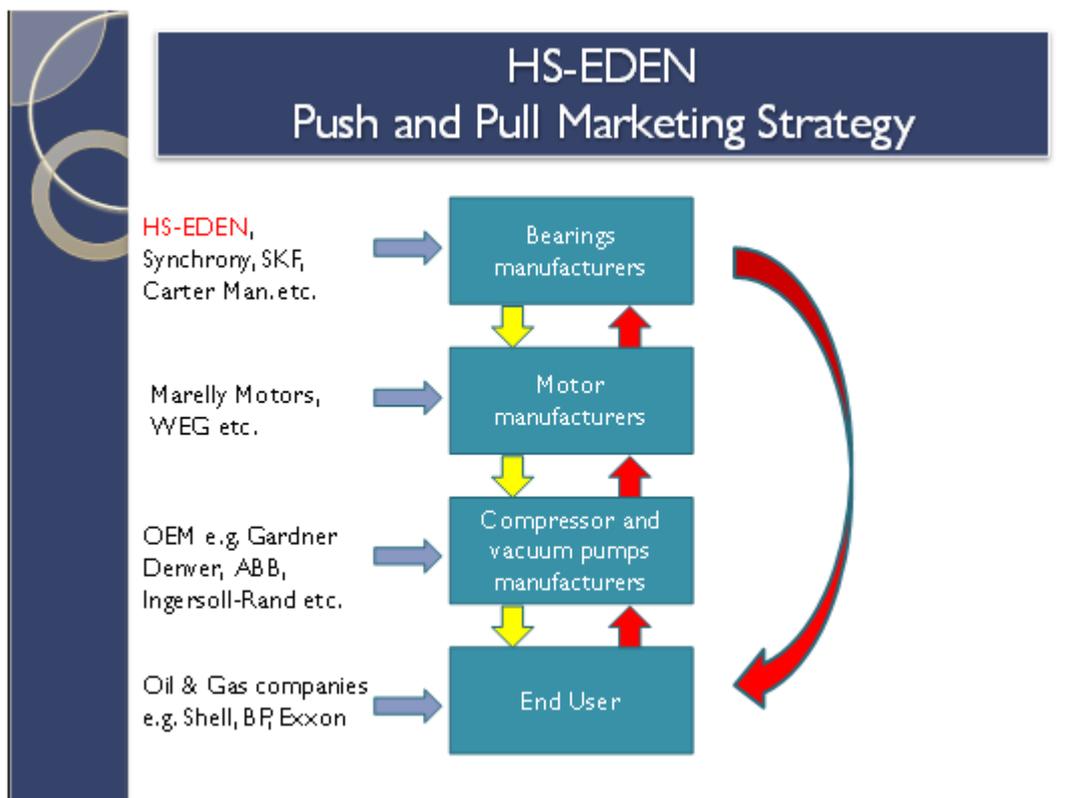


Figure 8. HS-Eden direct selling

6.5 HS-Eden marketing mix

There are four main elements in the Marketing Mix known as 4P's: Product, Price, Place and Promotion. HS-Eden must utilize these elements in order to attract new customers.

6.5.1 Product

HS-Eden must offer a product that would stand out in terms of:

- **expectations** – Probably the HS-Eden product would not only meet but also exceed customer expectations.
- **benefits** – HS-Eden products would add tremendous value to the customer in productivity and cost reduction.
- **functionality** – HS-Eden AMB's support unlimited speed.
- **reliability** – an extremely reliable product, as no maintenance is required.

6.5.2 Price

The AMB market is a price driven market, and therefore pricing is the main marketing mix variable that HS-Eden must pay attention to. Value-based pricing should be the pricing strategy for HS-Eden. Value-based pricing uses buyer's perception of value, not the seller's cost, as the key to pricing.

Value-based pricing means that the marketer cannot design a product and marketing programme and then set the price. Price is considered along with the other marketing mix variables before the marketing programme is set. (Armstrong et al. 2009, p. 299).

HS-Eden must analyze customer needs and value perceptions and then set the price based on that to match the customer's perceived value. "Good value" does not necessarily mean low price, but it means that if the customer places great value on the product, the seller can set the price at the level that the customer is ready to pay.



Fig 9 Value based pricing strategy (Armstrong et al.2009 p.299)

6.5.3 Place

HS-Eden can use both direct and indirect channels of distribution to reach potential customers.

The HS-Eden website would be the most convenient place for customers to purchase AMB's.

6.5.4 Promotion

Promotion is the main marketing feature that companies can utilize to promote their products and draw attention of the potential customers.

- Trade shows and exhibitions are very good platform for HS-EDEN to promote its product.
- Business magazines
- Website
- Direct marketing (contacting directly potential customers).

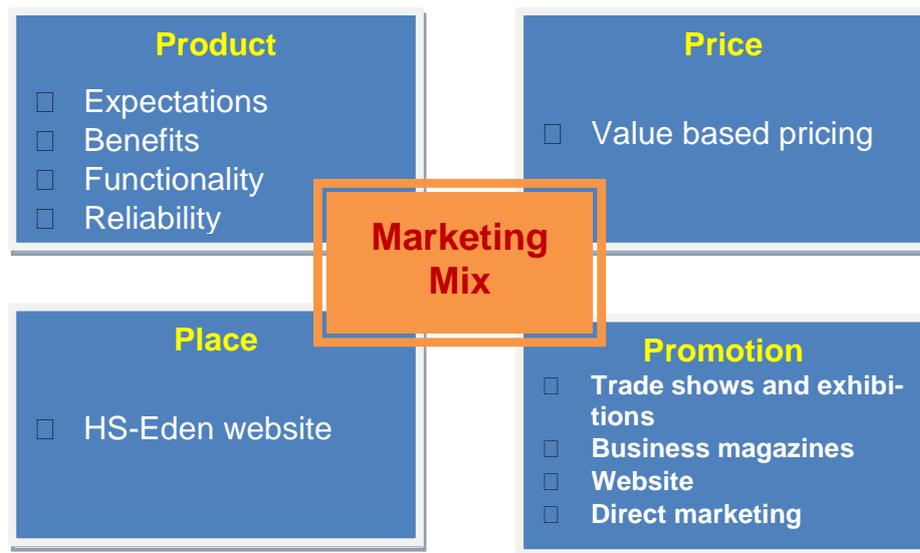


Fig 10. HS-Eden Marketing Mix

This chapter has identified the marketing essentials for HS-Eden and what the company is currently lacking. There is a great competition ahead and the marketing strategy for HS-Eden may prove one significant way to pave sustainable path and increase the competitive appeal.

6.6 Sales techniques

Selling is not as straightforward as one might think. Closing a deal requires persuasion and convincing the potential buyer that the product/service is worth buying. To be able to convince somebody as a seller one has to have the ability to listen, understand and provide excellent advice. The following sales techniques can be used by HS-Eden to identify customers' pain points and how to solve their problems.

6.6.1 Personal selling

Personal selling is viewed as a process that adds value. The sales person identifies the customer needs and provides a suitable solution to meet these needs. (Reece et al. 2010, p 5). Building and maintaining good relationships with the customers is the key in selling. It is undeniably important to spend time with the customers in order to understand their underlying needs and get as much information as possible to deliver a suitable solution that satisfies these needs.

6.6.2 Consultative selling

Consultative selling is achieved through effective communication between the sales person and the customer. The sales person establishes two way communication by asking appropriate questions and listening carefully to the customer's responses. The sales person assumes the role of a consultant and offers well-considered recommendations. (Manning et al 2010 p 10.) HS-Eden vigorously should apply this selling technique and when hiring sales agents a careful selection should be made as this type of a technique is well-suited for sellers that have the ability to listen sensibly and negotiate.

6.6.3 Transactional selling

This approach is well-suited for the customers who are price sensitive. These customers are well aware of their needs and they are primarily interested in price and convenience. (Manning et al. 2010, p 10.) HS-Eden may use this selling technique, but when encountering this kind of a buyer, there is no need to spend a great deal of effort to build rapport with the customer. It is advisable rather to find out the lowest cost selling strategies, such as low cost selling channels, to bring the price down.

7 Summary and discussion

This chapter concludes the findings from the market analysis and surveys. Key points are discussed which can feasibly be integrated in to the marketing strategy for HS-Eden. Scope of magnetic bearings into industries and scope for integration of technological advancements into the marketing strategy to meet consumer demands is discussed.

7.1 Discussion

Over the past 10 years, magnetic bearings have made significant changes in the industry for equipment that include rotating devices and applications. However, it is also true that the magnetic technology has not yet reached the consumer market. It has been forecasted that the marketing trends will change as the magnetic bearings grow smaller and smarter with less power consumption and cheaper.

The results achieved provide significant data for the theoretical modeling to understand the need of marketing phenomenon. For instance, the results helps to understand what factors facilitates the sales of bearings. An environment is tried to be constructed which forms the basis over which marketing actions can take place.

In this paper, an integrated framework of marketing strategy formulation and implementation factors is presented along with the impact of technology on

each. The paper advances propositions that differentiate and integrate marketing strategy processes and recast them into a model to demonstrate how technology affects each process. The model demonstrates that technology has a positive impact on marketing strategy where it is integrated with marketing elements of positioning, selection of target segments, segmenting the market, understanding consumer behavior, managing sales, managing marketing campaigns, and understanding the market.

According to Holm (2006 p. 24), proposition of marketing strategy is particularly important for the start-ups. Identification of global perspectives and competitors tends to form a model that represents different segments of the marketing strategy and how the company can incorporate its marketing measures to impact these segments. Marketing is not a standalone endeavor and successful marketing strategies are identified to be those that overwhelm the consumer with new and innovative technology. The results reveal that consumers are appealed towards the innovation that would help enhance their company processes.

The paper has presented a marketing strategy for HS-Eden. Being a magnetic bearings provider and a university based start-up, HS-Eden holds research competencies. The range of products offered is well-researched and feasible for consumers to replace their traditional bearings. However, the marketing strategy for HS-Eden was found to be limited since it does not focus on a particular geographical location and aims to expand globally. The marketing strategy must underpin flexibility and a far reaching approach to exploit the valid opportunities in the global market. There have been a number of suppliers from the UK as well as globally are recognized. Both the UK and Europe are familiar with AMBs and there are some strong suppliers that compete in the AMB market. HS-Eden needs to compete hard to gain consumer confidence through enabling maintenance services such as monitoring and configuration which are the main request from the respondents.

There have been several studies that have extended the knowledge upon the mechanical and structural designing of bearings (Schweitzer 2002, p. 14; Granström 2011, p. 2). This implies that magnetic bearings are available in dif-

ferent sizes and with different technology assumptions that either may simplify or complicate the process. The marketing strategy for HS-Eden must therefore reflect the importance of the provided AMBs in different industrial fields and other sectors that exhibit higher demands for bearings.

Industries are moving to reconfigure technologies that offer cleaner environment impacts. The marketing strategy for HS-Eden must therefore underpin environmental characteristics as they form the major appeal for the consumer groups. Besides, consumers also want to ensure that the products they are buying are robust in their functioning and reliable for integration with different components. Such innovative products are welcomed and lauded by consumers as it gives them a high competitive advantage.

HS-Eden must present the product range for each industry sector over its website and provide customized customer care, services, and help design for each industry and sector. This is because respondents have showed greater interest to purchase HS-Eden AMBs but also they have expressed concerns to make purchases from companies that are unknown and do not provide credible referencing.

7.2 Recommendations

A brand that connects with the market and communicates better within the global context becomes a leader. Connecting with followers requires relationship building. Market connections facilitate consumer understandings regarding the product, thereby increasing the chances to reconfigure their setups with a new innovative product (Minarro-Viseras et al. 2005, p. 178). Events have proved to be credible sources of gaining market insights. Since they provide a single platform for suppliers, manufacturers, and distributors; they provide great opportunities for marketing researchers to gain insights into the key players are offering and how far the competition falls (Perrott 2013).

Companies are mostly represented by their sales managers. HS-Eden may encapsulate its offering in brochures, as brochures proved to be a credible form of information that target audience will accept. HS Eden may market the credibility

of its innovation and in what ways they their bearings would be helpful in place of the traditional bearings. Therefore, it is recommended that HS-Eden will optimize its market penetration through participating in global marketing events. Besides, technical details as well as costs are of core importance. Appealing technical details are those that are accompanied with the perspectives of environmental sustainability and price feasibility. It has been apparent from the survey results that the AMBs are mostly perceived as an expensive, special, unfamiliar, and a not very much required product. Perhaps, their implications for sustainability are not very well-known, which provides HS-Eden with a considerable area to market the innovation it has brought into the field of bearings.

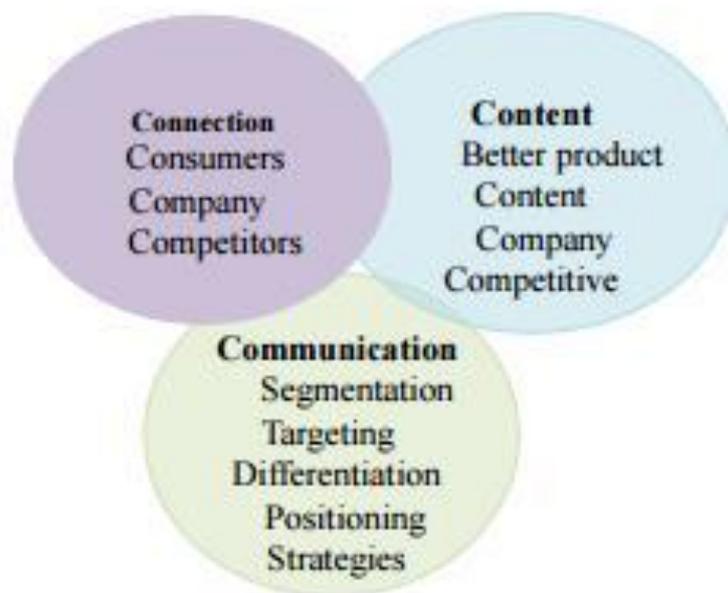


Figure 11 Showing the ways communication can be configured (Alghamdi and Bach 2014, p. 2)

It is apparent that HS-Eden has a long way to go. Success is, however, dependent upon the way the AMBs meet industrial demands. Core emphasis is required upon communication, sustainability measures, product reliability, and costs and sustainability.

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References

- Alghamdi..S. and Bach. C. 2014. Technological Factors to Improve Performance of Marketing Strategy. University of Bridgeport, Bridgeport, CT, USA. Retrieved from <http://www.asee.org/documents/zones/zone1/2014/Student/PDFs/15.pdf> . Accessed on 14 June 2016.
- Arora, A., Fosfuri, A. and Gambardella, A. 2004. Markets for technology: The economics of innovation and corporate strategy. MIT press.
- Avramović, M. 2010. Information Communication Technology in The Function of Improvement of Competitive Position of Tourist Destination. *Economics and Organization*, 7(2), p. 209 - 217.
- Bauer, C. 2013. Challenge accepted - Why some entrepreneurs succeed where others do not: An exploratory study on context and challenge perception and the choice of strategic activities of entrepreneurs in Dutch high-technology and clean-technology start-ups Master Thesis, TU Delft, Delft University of Technology.
- Blank, S. and Dorf, B. 2012. The startup owner's manual. The step by step guide. K&S, Ranch.
- Blank, S. 2005. The Four Steps to the Epiphany: Successful Strategies for Products that Win.
- Blythe, J. 2005,. Sales & Key account management, Thomson Learning, London.
- Boslaugh, S., 2007. An introduction to secondary data analysis. *Secondary data sources for public health: a practical guide*, p.2-10.
- Bowen, G.A., 2009. Document analysis as a qualitative research method. *Qualitative research journal*, 9(2), p.27-40.
- Brady, M., Fellenz, M.R. and Brookes, R., 2008. Researching the role of information and communications technology (ICT) in contemporary marketing practices. *Journal of Business & Industrial Marketing*, 23(2), p.108-114.
- Brennan, Ross; Canning, Louise E.; McDowell, Raymond. SAGE Advanced Marketing : Business-to-Business Marketing.
- Carree, M.A. and Thurik, A.R., 2003. The impact of entrepreneurship on economic growth. In *Handbook of entrepreneurship research* (p. 437-471). Springer US.
- Christopher, W.F., 2007. Holistic management: managing what matters for company success (Vol. 46). John Wiley & Sons.

Cohen, B. & Winn, M. I. (2007). Market imperfections, opportunity and sustainable entrepreneurship. *Journal of Business Venturing*, 22(1), 29-49.

Cohen. 2006. Semi-structured Interviews. Retrieved from http://www.sswm.info/sites/default/files/reference_attachments/COHEN%202006%20Semistructured%20Interview.pdf

Cooper, B. and Vlaskovits, P. 2010. *The Entrepreneur's Guide to Customer Development: A Cheat Sheet to the Four Steps to the Epiphany*. CustDev.

Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing*, 22 (1), 50-76.

Delmar, F. and Shane, S. 2002. What firm founders do: a longitudinal study of the start-up process. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.

Derozier, C. 2003. Marketing creativity in new product development: The role of market orientation, technology orientation, and interfunctional coordination. Unpublished Doctorate Dissertation, Texas Tech University, Texas.

Ekonomifakta, 2012, "Verket för tillväxtanalys", http://www.ekonomifakta.se/sv/Fakta/Foretagande/Entreprenorskap/Foretagens_overlevnadsgrad/ Retrieved 2012-11-03

El-Ansary, A.I. 2006. Marketing strategy: taxonomy and frameworks. *European Business Review*, 18(4), p.266-293.

Essential Guide to Marketing Planning, Third Edition, Marian Burk Woods, P2013.

Eurostat, 2008. "Business demography in Europe: employers and job creation", http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-08-100/EN/KS-SF-08-100-EN.

Ewel, Jim; 2012; "Why Marketing Must Also be Lean", *Agile Marketing*, <http://www.agilemarketing.net/lean/>, retrieved 2016-28-04

Fagerberg, J., 2000. Technological progress, structural change and productivity growth: a comparative study. *Structural change and economic dynamics*, 11(4), p.393-411.

Freedonia Group. World Bearings. <http://www.freedoniagroup.com/industry-study/2903/world-bearings.htm>. Accessed June 2016

Freedonia Group. World Bearings – Demands and Sales Forecasts. <http://www.freedoniagroup.com/World-Bearings.html>. Accessed June 2016

Furr, N. and Ahlstrom, P. 2011. Nail it then scale it: the entrepreneur's guide to creating and managing breakthrough innovation (No. 658.421 FUR. CIMMYT.).

Ganstrom, M. 2011. Design and Analysis of a 1-DOF magnetic bearing. Retrieved from <http://www.diva-portal.se/smash/get/diva2:440570/FULLTEXT01.pdf>

Gerhardt, P.L., 2004. Research methodology explained for everyday people. *Methodology*, 19, p.2006.

Ginter, Peter M.. *Strategic Management of Health Care Organizations* (7th Edition).

Gummesson, E. 2006. Qualitative research in management: addressing complexity, context and persona. *Management Decision*, 44(2), p.167-179.

Harrison M., Hague P., Hague N. Why is business to business marketing special. *B2B International*. <http://www.b2binternational.com/>

HB Bearings. 2016. Retrieved from <http://www.hb-bearings.com/>. Accessed on 24 June 2016.

Healy, M. and Perry, C. 2000. Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm. *Qualitative market research: An international journal*, 3(3), p.118-126.

Hechavarria, D.M. and Reynolds, P.D. 2009. Cultural norms & business start-ups: the impact of national values on opportunity and necessity entrepreneurs. *International Entrepreneurship and Management Journal*, 5(4), p.417-437.

Holm, O. 2006. Integrated marketing communication: from tactics to strategy. *Corporate Communications: An International Journal*, 11(1), p.23-33.

Hynynen, K.M. 2011. Broadband excitation in the system identification of active Magnetic bearing rotor systems. Ph.D. thesis, Lappeenranta University of Technology, URL: <http://urn.fi/URN:ISBN:978-952-265-153-2>. Accessed on 15 April 2016.

JTEKT Corporation. <http://www.jtekt.co.jp/e/>. Accessed July 2016.

Kotler, P. & Armstrong, G. (2012), *Principles of Marketing*, 14th ed, Pearson, Harlow.

Kotler, P., Keller, K. Brady, M., Goodman, M., Hansen, T. (2003). *Marketing Management*. Pearson Education.

Kuratko, D.F. and Audretsch, D.B., 2009. Strategic entrepreneurship: exploring different perspectives of an emerging concept. *Entrepreneurship Theory and Practice*, 33(1), p.1-17.

Leek, S. Naudé, P. and Turnbull, P.W., 2003. Interactions, relationships and networks in a changing world. *Industrial Marketing Management*, 32(2), p.87-90.

Li, H. and Atuahene-Gima, K. 2001. Product innovation strategy and the performance of new technology ventures in China. *Academy of Management Journal*, 44(6), p.1123-1134.

Li, H. and Miller, T. 2006. New ventures in emerging markets: comprehensive review and future directions. *Growth of New Technology Ventures in China's Emerging Market*, p.11.

Lim, T.M. and Chai, G.B. 2009. Validating the dynamic coefficients of bearing pedestals in a multi-mode rotor—bearing system. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, 223(6), pp.1359-1378.

Lowe, R. A. (2002). *Invention, innovation, and entrepreneurship: the commercialization of university research by inventor-founded firms*. (Doctoral dissertation, University of California, Berkeley).

LUT news. 2013. Suurnopeustekniikasta uutta liiketoimintaa Lappeenrantaan [wwwdocument] Published 2013, updated 20.11.2013 [referred 22.5.2014]. URL: http://www.lut.fi/uutiset/-/asset_publisher/h33vOeufOQWn/content/suurnopeustekniikastauutta-liiketoimintaa-lappeenrantaan. Accessed on December 2015.

Manning, Reece, Ahearne, 2010. *Selling Today*. Pearsons International Edition. *Market Research in Practice, How to get greater insight to your market*. P. Hague, N. Hague, C. Morgan, P.2013.

Marshall, C. and Rossman, G.B. 2014. *Designing qualitative research*. Sage publications.

Maurya, A., 2012. *Running lean: Iterate from plan A to a plan that works*. " O'Reilly Media, Inc."

McEwen, T., 2013. Ecopreneurship as a solution to environmental problems: Implications for college level entrepreneurship education. *International Journal of Academic Research in Business and Social Sciences*, 3(5), p.264.

Minarro-Viseras, E. Baines, T. and Sweeney, M., 2005. Key success factors when implementing strategic manufacturing initiatives. *International Journal of Operations & Production Management*, 25(2), p.151-179.

Mojahed, S., 2005. *A project improvement system for effective management of construction projects* (Doctoral dissertation, Louisiana State University).

Naudé, P. and Holland, C.P. 2004. The role of information and communications technology in transforming marketing theory and practice. *Journal of Business & Industrial Marketing*, 19(3), p.165-166.

NYTimes; "Best Sellers"; 2011; The New York Times.
(<http://www.nytimes.com/best-sellersbooks/2011-10-02/hardcover-advice/list.html>) Retrieved 2016-28-2016. Accessed on 16 June 2016.

Perrott, L., 2013. Engineers Meet at ISIS to Discuss Instrument Design. *Neutron News*, 24(1), p.10-11.

Powers, J.B., 2003. Commercializing academic research: Resource effects on performance of university technology transfer. *The Journal of Higher Education*, 74(1), p.26-50.

ReportsnReports 2016. <http://www.reportsnreports.com/reports/267854-bearings-to-2017.html>. Accessed July 2016.

Ries; 2011; Blog: "The Lean Startup Methodology"
(<http://theleanstartup.com/principles>)

Rode, V. and Vallaster, C. 2005. Corporate branding for start-ups: the crucial role of entrepreneurs. *Corporate Reputation Review*, 8(2), p.121-135.

Roush, Wade; 2011. Eric Ries, the Face of the Lean startup Movement, on How a Once-Insane Idea Went Mainstream, *Xconomy*.

Schweitzer, G. 2002, October. Active magnetic bearings-chances and limitations. In *IFTToMM Sixth International Conference on Rotor Dynamics*, Sydney, Australia (Vol. 1, p. 1-14). Accessed on May 2016.

Schwitzer, G. & Maslen, E. H. *Magnetic Bearings Theory, Design, and Application to rotating machinery*. Springer, London, New York. p. 535. e-ISBN 978-3-642-00496-4

Selling Today – Creating customer value, eleventh edition. Manning, Reece, Ahearn. P.2010

Shane, S. (2002). Selling university technology: patterns from MIT. *Management Science*, 48(1), 122-137.

Shane, S. A. (2004). *Academic entrepreneurship: University spinoffs and wealth creation*. Edward Elgar Publishing.

Siemens. 2011. *Desiro City Evolution in motion*. Retrieved from http://w3.siemens.co.uk/mobility/uk/en/rail_solutions/Commuter_Regional/Desiro/desiro_city/Documents/desiro-city-booklet.pdf. Accessed on 4 July 2016.

Simula, H., Lehtimäki, T. Salo, J. and Malinen, P., 2010. Uuden B2B-tuotteen menestyksessä kaupallistaminen. Helsinki: Teknologiatieto Teknova Oy. Accessed on 12 May 2016.

SKF.2014. Reliability, availability, sustainability Achieve your business goals with SKF downstream solutions. Retrieved from http://www.skf.com/binary/26-162659/14842-EN---SKF-Downstream-oil-and-gas-solution_singles.pdf

Skok, D. (2009), Startup killer: the cost of customer acquisition | For entrepreneurs. Available from: <http://www.forentrepreneurs.com/startup-killer/> . Accessed on 15 June 2016.

Smithanik. J and Mazzei. E. 2012. The Benefits of Magnetic Levitation in Neutron Choppers. Retrieved from <http://www.isis.stfc.ac.uk/news-and-events/events/2012/denim-photos/magnetic-bearings-presentation---mazzei-e-and-smithanik-j-sfk13333.pdf>

Smits, R. 2002. Innovation studies in the 21st century;: Questions from a user's perspective. Technological forecasting and social change, 69(9), p.861-883.

Snears. J. n.d. Magnetic Bearing Operating Experience. Retrieved from <http://turbolab.tamu.edu/proc/turboproc/T23/T23235-242.pdf>

Stamoulis N. 2013. Push versus Pull marketing: is your company using both strategies?. <http://www.brickmarketing.com/blog/push-pull-marketing.htm>

Swanson, E. E. & Maslen, E. H. & Li, G. & Cloud C. H. 2008. Rotordynamic design audits of AMB supported machinery. Proceedings of the Thirty-seventh Turbomachinery Symposium. [www-document]. Virginia, updated 17.9.2008 [referred 23.5.2014]. URL: <http://turbo-lab.tamu.edu/proc/turboproc/T37/T37-TUT01.pdf>

The 20 Ps of Marketing – A complete guide to marketing strategy. David Pearson, P 2014.

The Barden Corporation 2016. Barden Aerospace and Super Precision. Retrieved from <http://www.bardenbearings.co.uk/touchdown>. Accessed on 22 June 2016.

Vohora, A., Wright, M. and Lockett, A., 2004. Critical junctures in the development of university high-tech spinout companies. Research policy,33(1), p.147-175.

W Creswell, J. 2009. Research design: Qualitative, quantitative, and mixed methods approaches. SAGE Publications, Incorporated.

Womack P. James. Jones T. Daniel; Roos, Daniel; 2007; The Machine that Changed the World, The Story of Lean Production. Free Press; ISBN: 0743299795

Zahra, S.A., Ireland, R.D., Gutierrez, I. and Hitt, M.A., 2000. Introduction to Special Topic Forum Privatization and Entrepreneurial Transformation: Emerging Issues and a Future Research Agenda. *Academy of Management Review*, 25(3), p.509-524.

Zimmerman, M; Zeitz, G; 2002; "Beyond Survival: Achieving New Venture Growth by Building Legitimacy" *The Academy of Management Review*; Vol. 27, No. 3, Jul., 2002