

Optimizing warehouse logistics with Artificial Intelligence

– Market analysis

BSc in Industrial Engineering -
Work Organisation and Leadership

Elise Flognman
Emilia Grönlund
Maja Ticehurst Falk



UNIVERSITY OF BORÅS

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Authors: Elise Flognman, Emilia Grönlund, Maja Ticehurst Falk

Supervisor: Jonas Waidringer

Examiner: Magnus Bengtsson

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Abstract

This report is a part of a larger project with the aim of developing a proof-of-concept prototype. The project was started on the initiative of Company X and is a collaboration between them and the University of Borås. Company X are a logistics consultant firm specialized in warehousing operations. Through this project Company X hope to strengthen their standing on the market and offer their customers new and innovative solutions. The purpose of this project is to, with the assistance of AI, calculate in what cluster within a warehouse a product should be placed in order to create more efficient picking routes and to research the market in order to evaluate the business potential for this kind of service. This specific report aims to conduct a market analysis for the potential service. It will do so by conducting interviews and creating a theoretical framework consisting of relevant literature.

When performing the market research and analysis of the potential IT-service there are a few limitations caused by a number of factors that could potentially affect the significance of the end result. The service is not yet developed and cannot be described in detail but only as an idea, which could make it difficult for the interview respondents to fully understand the service. The report will also be limited for certain practical reasons such as the Covid-19 pandemic. Because of this, the report has not had the opportunity to conduct the interviews with potential customers on site but have been conducted online, via link.

The theoretical framework has two different main focus areas. The first area addresses basic warehouse logistics and difficulties in selling high technology products, while the second area includes marketing strategies and strategic marketing planning. The market analysis will consist of a SWOT-analysis and an STP-analysis. The report has concluded that the service has potential and suggests that company type B is the best suited potential customer. Personal and demand driven sales are also considered helpful factors when selling high-tech products and solutions.

Sammanfattning

Detta arbete är en del av ett större projekt med syftet att utveckla en proof-of-concept prototyp. Projektet, som är ett samarbete mellan ”Företag X” och Högskolan i Borås, startades på initiativ av Företag X. Företaget är specialiserat på logistiklösningar och lagerverksamhet. Förhoppningen med projektet från Företag X perspektiv är att stärka sin marknadsposition och kunna erbjuda sina kunder nya och innovativa lösningar. Projektets syfte är med hjälp av AI beräkna i vilket kluster inom ett lager en produkt ska placeras för att skapa effektivare plockrundor samt att undersöka marknaden för att kunna utvärdera affärspotentialen för denna typ av tjänst. Detta arbete syftar till att genomföra en marknadsanalys för den potentiella tjänsten som underlag för forskningsprojektet. Marknadsanalysen baseras på kvalitativa intervjuer med personer utvalda genom ett experturval samt ett teoretiskt ramverk. Marknadsanalysen har vissa begränsningar som potentiellt kan påverka resultatet. Bland annat det faktum att tjänsten inte är utvecklad än och därför bara kan beskrivas som idé vilket kan bidra till svårigheter för intervjurespondenterna att förstå tjänsten fullt ut. Även Covid-19 pandemin anses vara en begränsning rent praktiskt då intervjuerna inte har kunnat ske på plats utan har fått ske digitalt istället.

Det teoretiska ramverket har två huvudfokus, det ena berör lagerlogistik och svårigheter med att sälja högteknologiska produkter medan det andra behandlar marknadsföringsstrategier och strategisk marknadsplanering. Marknadsanalysen består av en SWOT-analys och en STP-analys.

Arbetet har kommit fram till att tjänsten har potential och föreslår företagstyp B som den mest optimala kunden att rikta försäljning av denna typ av tjänster mot. Personlig och efterfrågestyrd försäljning anses vara viktiga aspekter av försäljning av högteknologiska produkter och tjänster.

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1. INTRODUCTION

The following introductory chapter includes a description of the general background of the project as a whole. The purpose of the report and the research questions, which the report aims to investigate and conclude, will be introduced further on in this chapter along with the limitations of the report.

1.1 Background

This report is a part of a larger project with the aim of developing a proof-of-concept prototype. For the purpose of anonymity and keeping the results objective and applicable the company that is the subject of this report has been anonymized. Going forward the company will be referred to as “Company X”. The project was started on the initiative of Company X and is a collaboration between them and the University of Borås.

The E-commerce market is one of the fastest growing industries in the world and with the Covid-19 pandemic the effect is even more distinctive. The south-west parts of Sweden, where Borås and Gothenburg are situated, holds one of Northern Europe's largest clusters of e-commerce companies. With e-commerce both the need for warehousing and manpower is large and with that comes some specific difficulties. Today, an e-commerce company can offer a customer anything between 100 to 200,000 products, where orders placed before 12 pm are processed, packed and sent by 4 pm the same day. It is not unusual to pick around 10,000 items in one day, spread over 4,000 orders and over 200,000 locations in the warehouse (University of Borås, 2021). The proposal for the project as a whole, is to, with the help of AI, calculate in what cluster an item should be placed in a warehouse, in order to create optimized picking routes. To do this a so-called shopping cart analysis, in combination with zone optimization and cluster placement can be used. The result of the project will be a proof of concept in the form of a digital prototype.

Kordos et al. (2020) writes that a large share of operating costs related to product storage is connected to order picking. From studies it has been established that about 60% of warehouse operation costs are connected to costs of picking up goods when completing orders. The time required for this operation is a decisive factor in the level of customer

satisfaction. The lead time from when an order is placed to the delivery decreases all the time and short lead times are something that is expected by the customer. An unsatisfied customer will most likely not purchase something from that same company again, and therefore optimized picking routes is something beneficial for the company. It can be achieved by optimizing the locations for particular products in a warehouse, cluster placement, and then determining the fastest routes in the optimized product placement. Furthermore, through the project, the knowledge of AI in Sweden will hopefully increase and contribute to better and more realistic teaching as the project is a collaboration between Company X and the University of Borås.

1.2 Purpose

The purpose of this project is to, with the assistance of AI, calculate in what cluster within a warehouse a product should be placed in order to create more efficient picking routes. This specific report aims to conduct a market analysis for the potential service.

1.3 Research questions

In order to fulfil the formulated purpose, the following research questions will be answered:

1. Does the service have potential and in what way is it value adding for customers?
2. For what type of company would the service be most ideal?
3. How should a company tackle the difficulties in selling a high-tech product?

1.4 Limitations

When performing the market research and analysis of the potential IT-service there are a few limitations caused by a number of factors that could potentially affect the significance of the end result. The service is not yet developed and cannot be described in detail but only as an idea, which could make it difficult for the interview respondents to fully understand the service. The report will also be limited for certain practical reasons such as the Covid-19 pandemic. Because of this, the report has not had the opportunity to conduct the interviews with potential customers on site but have been conducted online, via link.

2. THEORY

The following chapter contains the theoretical framework relevant to the report. The theoretical framework has two different main focus areas. The first area addresses basic warehouse logistics and difficulties in selling high technology products, while the second area includes marketing strategies and strategic marketing planning.

2.1 The travelling salesman problem

One of the most commonly talked about logistics problems is the one of the “travelling salesman” (Kota, L. 2018). The travelling salesman needs to visit a specific number of places once and, starting and ending in the same place, the aim is to find the shortest route. This model can be applied to many different types of problems. Order-picking routes in warehouses being one of them. This is connected to material handling in warehouses (Ratliff and Rosenthal, 1983). Every order that arrives at a warehouse consists of a different combination of items. These in turn need to be collected and shipped off to the ordering customer. Every order’s specific picking route needs to be optimized and this is where the travelling salesman problem can be recognized. The problem becomes more complicated when a larger number of orders need to be coordinated. Logistics problems in general are often characterized by being very diverse, having a high number of variables and a large number of varying conditions (Kota, L. 2018). To handle problems of this kind, optimizations algorithms can be applied, and this is where research in the field of artificial intelligence becomes interesting.

2.2 Artificial Intelligence

Artificial Intelligence or AI, for short, is technology designed to simulate human intelligence in computers and other machines. AI as a concept also covers technology with traits like machine learning and problem solving. It has been described as “understanding the phenomenon of human intelligence and to design computer systems that can mimic human behavioural patterns and create knowledge relevant to problem-solving” (Min, 2010, p.14). The aim of using AI technology is to be able to overcome obstacles met by humans

in regard to physical and intellectual limitations (Daugherty & Wilson, 2018). By using AI, it is possible to significantly increase productivity and efficiency (Dwivedi et al., 2019). Like all technology, AI has developed and become more and more elaborate. In early stages, AI was used more as a support system for recommendations in expert and knowledge-based systems (e.g., Ingwersen, 1984) but over time it has developed into what it is today. It has become more efficient in learning, problem solving, manipulating objects and navigating physical space (Duan, Edwards, & Dwivedi, 2019).

There are several different types of AI, all with different purposes. Depending on the task at hand a specific type would be used. There is mechanical, thinking and feeling artificial intelligences (Huang and Rust 2018; Huang et al. 2019). Mechanical AI is used for routine, -repetitive tasks like remote sensing, clustering and classification algorithms, machine translation and such. Thinking AI is directed towards tasks that aim to process data in order to come to a conclusion or decision. The data is more unstructured, and the AI is effective in finding patterns and regularities. Examples of thinking AI is text mining and speech and facial recognition. This is usually done by using tools like machine learning, neural networks or deep learning. Lastly feeling AI is designed for analysing human emotions and feelings using methods like natural language processing, NLP for short, text to speech technologies, recurring neural networks, RNN, chatbots that mimic human speech and more (McDuff and Czerwinski 2018). These three AI's can be combined in different ways and create more unique solutions better suited for the specific task at hand.

2.3 Selling high-tech products

One commonly met challenge for companies that market and sell high tech products or solutions is how to efficiently communicate the complexity and functions of the product or solution. Companies striving towards being high-tech tend to focus on products considered to be “cutting-edge or technologically advanced” (Slater, 2014, p.9) and thereby moving product development towards higher levels of innovation. How the company then commercializes these innovative products is essential for the success of the high-tech organization (Yalcinkaya, Calantone and Griffith, 2007). This, however, is often a big challenge faced by the companies that engage with these complex, emerging and intricate technologies (Sperry & Jetter, 2009). This issue most directly affects the buying and selling process of the company and can cause lower levels of diffusion of these innovations (Rogers, 1962, 2003) and in turn causing a failed commercialization (Griffin & Hauser,

1996). Because of this, how a product is communicated is vital for the buyer's investment decision (Yap & Souder, 1994). Making the process understandable and sensemaking is vital for the communication between a buyer and seller in a B2B context and how the recipient makes sense of the communication (Henneberg, Naude & Mouzas, 2010). This issue is not uncommonly encountered in high-tech, B2B relationships. Personal selling is regarded as highly important in high-tech B2B markets (Slater, 2014) and this is partially linked to comparatively lower customer numbers in regard to B2C markets (Von Hippel, 1986). With these prerequisites, marketing communications become even more important for the buyer's understanding of the product. New products need to be legitimized in order for them to sell and that can be done by individuals and organizations engaging in early development processes in order to help them understand and make sense of the product so that a purchasing decision can be made (Navis & Glynn, 2011). Some marketers believe that the failure of some high-tech products is partly due to errors within the management but also due to environmental constraints (Hauser, Tellis & Griffin, 2005). Some believe that the timidity and motivational factors of a company limit the company's commercialization and research efforts (Andersson, 2004). Others point to the fact that multiple innovations in the high-tech field may limit the products appropriability (Rao, 2005). Teece (1986) drew attention to the fact that companies should develop complementary assets to ensure successful innovation. One complementary asset that can play a big part with high-tech products is personal selling which can also help ensure the products continued performance on the market. The importance of personal selling with high-tech products is evident from the level of complexity that comes with highly technical products and therefore require a deeper exchange of communication. Some believe that failures of high-tech selling are partly due to the type of sales structures that have been used and that traditional and relational sales forces are "supply driven" (Sharma, Iyer & Evanschitzky, 2008) This implies that the product in question was first manufactured and then introduced and marketed to potential customers which could lead to the salespeople directing their motivation to fulfil the needs of the selling company at the cost of the needs of the customer. The traditional way of selling that many companies follow is bringing in the sales perspective when the product and the marketing strategy are already fully developed instead of integrating marketing and sales into the development of the product (Kotler, Rackham & Krishnaswamy, 2006). Sharma, Iyer and Evanschitzky (2008) suggest that instead of having the sales of high-tech products be supply driven, they should be demand driven. This implies starting with the customer and having focus put on satisfying

their needs using existing as well as emerging high-tech products. The focus should be moved from single products to selling more complete services and solutions. Demand selling is, according to Sharma, Iyer and Evanschitzky, better suited for high-tech products and services. Given that many of the failures of high-tech products is due to the product being mismatched with the environment demand driven sales can help turn the perspective around, putting the customer's needs first, making the product a better match to the environment it will exist in.

2.4 Strategic marketing planning

The purpose of strategic marketing is to produce a marketing plan customized and aligned according to the goals of the organization. The process performed in strategic marketing is often as important as the marketing plan itself. The planning process enables more efficient planning since assumptions can be questioned, ideas can be adjusted, and the future can be rehearsed. The strategic marketing planning process involves the development of strategies based on the market situation and the organizations capacity (Gilligan & Wilson, 2003). In order to understand the concept and enable construction of a marketing plan, it is important to gain knowledge of the terms individually (Nijssen & Frambach, 2001). Strategy and the interface to marketing strategy will be clarified and explained in further detail in the following chapter

2.4.1 Strategy

The term strategy originates from the military and describes the art of the general. Military references are embedded in the idea behind strategy and the purpose of forces maneuvering and winning over opponents (Harvard Business Review, 2005). Nowadays, the concept of strategy is an ambiguous subject that lacks a unique and distinct definition to adopt. Various authors and researchers therefore specify the concept of strategy, based on their own understanding, meaning and definition. Nickols (2016) describes the framework for a strategy as a carefully crafted plan based on a complex cooperation of thoughts, ideas, experiences, expertise and expectations, where the purpose is to strive for a result and goal. A strategic plan is a structure that consists of four different steps, where goal and strategy form a bridge over to tactics and resources. The first step requires a deep understanding of the goal in sight in order to formulate a strategy. The second step is to select a strategy that

allocates and deploys the resources required to achieve the goal. The third step is tactic and consists of how the distributed resources have been used and exploited. The fourth step is the available means and resources that the organization possesses (Nickols, 2016).

The most important aspect of the strategy is how to reach the desired goal of the plan (Harvard Business Review, 2005). It is important to properly consider the meaning of a distinct goal, as it is crucial when formulating a strategy. The focus should be on how the goal is achieved rather than specifications around the goal. The strategy only fulfils its function when it is associated with a purpose, result and goal in sight. A strategy without a goal in sight can still be effective and rewarding for an individual or entity, but not for an organization as a whole. It is the desired goal that constitutes the entire function of the strategy. The strategy will provide guidance regarding appropriate measures that need to be executed simultaneously as the strategy is modified by the actions taken. The plan of measures aims to guide activities towards the ultimate goal (Nickols, 2016). To simplify the concept of strategy, a general definition may refer to strategy as a carefully chosen route that aims to achieve the company's goals simultaneously as the environment is calculated and considered (Nijssen & Frambach, 2001).

2.4.2 Marketing strategy

It is necessary that the organizations strategic situation is clear and distinct when developing a marketing strategy. Once the organization understands the concept of strategy, strategic marketing can evolve and interpret as the planning decision approach. The organization must plan and decide which markets they want to compete in, with which products or services and what constitutes as the organizations competitive advantage (Gilligan & Wilson, 2003). In more specific terms, it emphasizes that segmentation, targeting and positioning along with internal and external factors are substantial for the marketing strategy. It involves both the marketing strategy's content as well as the management of the implicated tasks (Nijssen & Frambach, 2001). Developing and implementing marketing strategies and plans, capturing marketing insights, interacting with customers, building strong brands, generating, delivering, and communicating value, and managing the marketing organization within the global economy are all important marketing management tasks (Kotler & Keller, 2006). The marketing strategy develops in consultation and within the restrictions set by the organization overall strategy. It means that the marketing strategy

occurs as a result of the organizations strategy and accordingly the marketing plan occurs as a result of the marketing strategy (Gilligan & Wilson, 2003).

Gilligan and Wilson (2003) present the three Cs model as a fundamental, but meaningful, framework for making logical strategic decisions when conceiving a marketing strategy. The three main elements in the model that must be considered are the customers, competitors and capabilities. The organization obtains competitive advantages by integrating all three elements. For this to happen, the organization must know who the customers are and their buying behaviour. The organization must also have the ability to understand and satisfy customers interests, needs and requirements. Likewise, the organization must know who the competitors are and how they conduct their business. The weaknesses and strengths of competitors should be examined in order to surpass the competition and conquer competitive advantages. The own organizations weaknesses and strengths should also be evaluated in the various market segments in which they operate. To begin the strategic market planning process, internal and external key factors must be identified (Gilligan & Wilson, 2003).

The external factors strive to provide the organization with insight about the current and future environment. It is crucial to assess the market situation in order to manage, function and survive in a changing environment. The ultimate goal is to identify opportunities for growth while one is ware of the potential threats (Nijssen & Frambach, 2001). The general environment, market, customers and competitors constitutes the external key factors (Gilligan & Wilson, 2003). It is also fundamental for the organization to generate customer value which in order requires a well-functioning business. The internal factors are therefore the basis of the investigation regarding the organization capacity (Nijssen & Frambach, 2001). The internal key factors can concisely be explained as real or artificial problems, assets and resources (Gilligan & Wilson, 2003).

2.4.3 Blue ocean strategy

Blue ocean strategy is a marketing theory about venturing into uncontested market space. The creators of the theory, Kim and Mauborgne (2005), explains that the fundamental concept of the blue ocean strategy is to turn competition irrelevant. It is achieved by creating new demand and opening up new market areas where competition is low, or virtually absent.

These specific areas refer to great opportunities for growth and increased profitability. Today's business world often associates the concept of strategy with competition, in opposition, the authors explain that the competition is not primarily. Instead, the best way to beat competition is by not trying to beat it at all. Attention should instead be focused on any innovative aspects on the concept of strategy. Concisely, the aspect of strategy is about aiming to identify so-called blue oceans by developing innovative uncontested markets where competition is virtually non-existent. Once the new market space has been discovered, one should utilize and protect the blue oceans (Kim & Mauborgne, 2004). The most significant attribute about blue oceans is the strength of the possible profitability along with the concept's meaning, it is explained as an analogy to describe the enormous potential that exists (Kim & Mauborgne, 2005).

The opposite of blue ocean strategy is red ocean strategy which consists of all known and inhabited market spaces. In contrast, that strategy is about competing and winning among the obstinate competition. The market is often limited in terms of growth and profitability since all the industries that exist today labour in this space. The market space is simply overcrowded, which often leads to "bloody" battles, hence the name red ocean strategy (Kim & Mauborgne, 2005). The strategy traces back to its military roots since the language of the strategy is influenced by military references. The correlation between the military strategy and the red ocean strategy is the approach, both confronts, wins and forces away resilient competitors. The approach is all about overcoming the competitors and then surviving (Kim & Mauborgne, 2004). Since the strategies are opposite, the reasoning clearly emphasized the most optimal strategy to adopt. Finally, how do one approach the blue oceans strategy?

It is important to play the rules according to the market space if one ever operates within red oceans. It is a fact that red oceans will continue to be valid in today's business world, but like most industries, supply often exceeds demand in the end. An important aspect is therefore to always remember to strive for blue oceans and new opportunities. Blue oceans are often created within the limits of red oceans by expanding the industrial boundaries, in some cases can blue oceans be created beyond the boundaries as well. The knowledge surrounding the concept of blue ocean strategy is relatively unknown since previous strategies that have been highlighted has been competitive red ocean strategies. Although the term is relatively unknown, there are fortunately plenty of existing blue oceans. Both fairly new and really old market spaces that have been innovative once upon a time are in

fact blue oceans. However, there are many remaining question marks and uncertainties surrounding blue oceans. Many organizations and leaders might even refer to blue oceans as unattainable dream scenarios. Kim and Mauborgne (2005) further explain that the difference between those who succeeded with blue oceans versus those who failed with blue oceans was their approach to the concept of strategy.

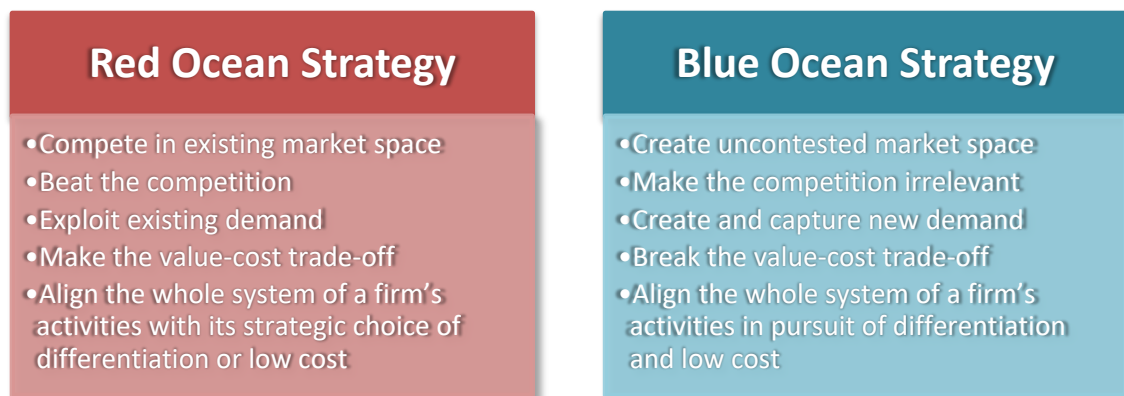


Figure 1. Red Ocean Strategy Versus Blue Ocean Strategy (Kim & Mauborgne, 2005)

2.5 Strategic marketing planning process

Kotler and Keller (2006), Nijssen and Frambach (2001) as well as Gilligan and Wilson (2003) all describe almost identical processes in strategic marketing planning. It is important to point out that the authors may describe the process variously, the difference can be noted in the visual presentation of the process and by the designation of the different activities. However, the content of the authors processes all consists of similar activities and approaches.

Considering the purpose of this essay, a process described as a legitimate, subsequent and rational strategy to planning was chosen (Gilligan & Wilson, 2003). The process begins with identifying internal and external key factors, which proceeds to analysis based upon strengths, weaknesses, opportunities and threats. Thereafter, the process continues with strategy planning, utilization of resources and action planning. Ultimately the process ends with implementation, performance monitoring and control. Appropriate methods and tools to follow the various steps in the explained process has been determined. Identification, analysis and evaluation of internal and external key factors will be achieved with the help

of a SWOT analysis. The segmentation, targeting and positioning (STP) model will help target the strategy planning, utilization of resources and action planning.



Figure 2. The strategic marketing planning process

2.5.1 SWOT analysis

An efficient tool that can be used when a company needs to analyse its current position is a SWOT analysis. It is a tool that provides structured and analytical answers that are used for marketing purposes, particularly when a company wants to find a suitable strategy that generates profitable development (Harvard Business Review, 2005). The SWOT analysis illustrates the company's internal and external factors, the purpose is to evaluate the internal and external information which in turn provides significant value to a company's strategic progress. The internal and external factors of the SWOT analysis are divided into strengths, weaknesses, opportunities and threats, hence the name of the model, where both positive and negative aspects are examined (Kotler & Keller, 2006). The internal factors contain strengths and weaknesses within the own company in relation to competitors on the market. The external factors contain opportunities and threats based on the market and environment. By combining the results from all divisions, a marketing strategy evolves that enables a company to profit from prospective opportunities in consideration of prospective risks (Harvard Business Review, 2005).

The internal analysis strives to compare a company's own strengths and weaknesses in relation to competitors where the purpose is to identify competitive advantages. The internal factors can be identified by examining resources that currently exist within the company (Kotler & Keller, 2006). The identified resources can be divided into the following five categories, material resources, internal immaterial resources, external immaterial resources, human resources and competencies. When conducting an internal analysis, a company's strengths and weaknesses should be evaluated in three crucial areas. Harvard Business

Review (2005) identifies the three areas as core competencies and processes, financial position and management and culture.

1. If a company obtains any kind of expertise or skills in key areas, it is called core competence. Core competence is valuable because it can result in benefits and superior performance that customers value highly. It is important to identify distinctive and unique abilities within the company, not what the company works with. If a core competence is to result in a strategic advantage, the company must be extra skillful at a certain ability compared to competitors simultaneously as the customer values it highly.
2. The adaptation of a new strategy can be expensive which makes it important to observe the company's financial condition. The financial situation is preferably compiled through a report that contains cash flows, assets to external capital, other planned investment plans and obstacles to new projects. The company should monitor economic developments as it measures profitability, since the aim of a new strategy is to improve that measure of profitability.
 1. A company's management and organizational culture is responsible for decisions regarding changes, in order for a strategy to be successful, the company must be prepared at the fact that changes may be necessary. A prepared company has a better adaptability and flexibility regarding future strategies and decisions which is crucial (Harvard Business Review, 2005).

The external analysis can detect opportunities and threats by examining the environmental conditions. Components in the external environment that could generate value are classified as opportunities, while components in the external environment that could prevent a company from generating value are classified as threats. When planning a new strategy, the external information can help to understand the company's strategic options. The purpose is to define potential areas of action based on the company's environment (Harvard Business Review, 2005). The company's environmental conditions are divided into two categories, macro- and micro parameters (Kotler & Keller, 2006). The macro variables contain a company's extensive environment and include economics, politics and law, sociocultural, technology and ecology. A company's market, on the other hand, is associated with the micro variables that include current and potential customers, suppliers and competitors as well as other market partners, structure and replacement products (Nijssen & Frambach, 2001).

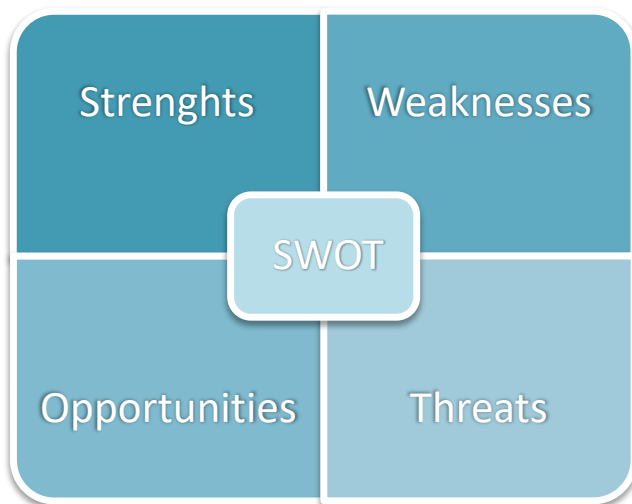


Figure 3. Model for the SWOT analysis

2.5.2 Strategy formulation

The STP model is a marketing strategy that stands for Segmentation, Targeting, and Positioning. A model in three steps that examines a product or service as well as the optimal way to communicate its benefits to specific customer segments. The STP marketing model means you segment your market, target select customer segments with marketing campaigns tailored to their preferences and adjust your positioning according to their desires and expectations. STP represents a change from product-focused marketing to customer-focused marketing. The goal is to gain a better understanding of who their ideal customers are and how to reach them. (DeSarbo et al. 2015)

The first step of the model is the segmentation stage. DeSarbo et al. (2015) writes that the definition of segmentation can vary from a range of variables to fit what it should be applied on, for example, customer needs, preference, usage situations, etc. The goal is to create various customer segments based on specific criteria and traits that are important for the specific model.

In the second step, targeting, the financial attractiveness of each market segment evaluates in terms of demand, costs, and competitive advantage. Based on this financial evaluation, one or more target segments are selected as “targets” based on the profit potential of such segments and their fit with the company’s corporate goals and strategy. The optimal level

of resources is then determined to allocate to these targeted market segments. As a final phase of this intermediate targeting stage, customers and prospects are often identified in these targeted segments (Kotler & Keller, 2006).

The final step of the STP model is positioning. The marketer identifies a positioning concept for the company's products/services that attracts targeted customers. The product offer should lead to an optimal mix of product positioning by market segments. The product positioning of the given product should not be designed and evaluated in isolation from the company's other products and the market segments at which they are aimed. All the different factors that you considered in the segmentation and targeting steps should have made it easy to identify the niche for the product.

Although much of the work that has been done on segmentation analysis over the past 30 years has focused on consumer markets, many of the variables, such as benefits sought, geography and usage rates, can be applied with equal validity to industrial markets. Gilligan and Wilson (2003) write that the amount of uncertainty in the purchase and the purchase significance for the company are of particular significance in that they reflect the fact that buyers too try to segment potential suppliers by developing assessment criteria and establishing formal vendor rating systems. This general line of thinking has been developed to show that the need to understand buyers' needs is as important in industrial markets as in consumer markets. Unless there is knowledge of the industrial users' needs the manufactured product usually has the lowest common denominator, price. A slightly different line of argument has been developed and concentrates on developing a classification of industrial segmentation variables and listing the questions that industrial marketers should pose in deciding which customers they want to serve (Gilligan & Wilson, 2003).

3. METHODOLOGY

The methodology chapter introduce the choice of method and information retrieval for the report. The data collection has been obtained by two separate approaches, the first is through a literature review and the second is by interviews. Lastly, the difference between the terms of reliability and validity is clarified.

3.1 Method choice

It is beneficial to understand the concepts of qualitative research and quantitative research. It is simultaneously important to be careful not to draw a wedge between the concepts, this, since the difference between the two concepts is ambiguous and many authors have separate definitions. The simple characteristics of the two methods is the different approaches to collecting data, quantitative research uses measurement while qualitative research does not (Bryman, 2012). The quantitative method has its background in science and often results in objective data in the form of numbers and quantities, which is easy to quantify. The qualitative method has its background in the humanities and is instead based on interpretations and the understanding of the context (Stukát, 2011).

Stukát (2011) describes that the choice of method should be based on the research questions. For this report, a qualitative method has been chosen with reference to the report's purpose and research questions that partly is to evaluate the business potential of the potential service. Respondents were selected through an expert selection who were interviewed through semi-structured interviews. The reason for choosing a qualitative method was to give the concerned companies the opportunity to provide a more detailed description. The ambition was to take part of the companies' perceptions, feelings and experiences about the potential service. The interviews also made it possible to receive supplementary questions since the service contain of certain technology specifications that can be difficult to understand.

3.2.2 Interviews

The conducted interviews are the second part of the information retrieval. Potential respondents from different companies were selected through an expert selection and has a professional connection to Company X. The respondents were contacted via email about potentially participating and six candidates were in the end chosen. The interviews were semi-structured and were conducted separately via link according to the candidates own schedule. Before the interviews were scheduled, the candidates gained access to a document that contained information about the report's authors, the project as a whole and the potential service. A complement to the expert selection were an interview with the CEO of Company X. The interview with the CEO were conducted in order to gather appropriate information for the SWOT analysis. It enabled an open and unrestricted conversation about Company X since the interview was in unstructured form. According to Bryman (2012), one should think about being familiar, structured, clear, open and directorial when conducting interviews, this was something the report took into account before the interviews were conducted.

The interview guide, which was aimed towards the expert selection, were constructed based on three main areas. The first area addressed the respondents current storage- and working methods, the second area addressed the respondents future plans associated to their business and the third area were directed towards the interest and willingness to invest in the potential service. The questions were not too specific or leading but constructed to give the respondents the freedom to express their thoughts, feelings and opinions. A total of seven questions were designed for the interview guide, see Appendix 1.

3.3 Reliability and validity

When assessing the quality of a report, Bryman (2012) believes that the terms of reliability and validity should be properly considered. The terms can often be perceived as synonymous, but in relation to the evaluation of conceptual measures, they have a different meaning. It is possible to distinguish the terms analytically, but it is also important to recognize how the terms are related. Validity presupposes reliability, it means that a measure cannot be considered reliable if it is not valid. Succinctly, high reliability can be assumed if the report has high validity. However, the meaning of the terms varies depending on whether the report is qualitative or quantitative (Bryman, 2012). One half of the report

is based on interviews and is therefore classified as qualitative. The difference between reliability and validity related to qualitative or quantitative studies will be discussed in more detail below.

Reliability manages the repeatability and whether the result of the report is recurrent. The term refers to whether the survey can be considered reliable and ensure a non-fluctuating result. To determine the reliability of the measure, the following three prominent factors are examined.

1. Stability examines whether a measure is stable and does not fluctuate over time. The stability of the measure is tested by administering the same measure on two different occasions, the so-called test-retest method. The correlation between the measure is expected to be high, otherwise the measure can be considered unstable and unreliable.
2. Internal reliability examines how consistent the indicators that make up the scale or index are, and also how proper the various parts of the measure are related. The purpose is to find a correlation between several indicators.
3. Consistency between observers examines the consistency in the result along with a subjective assessment, it is especially significant when several observers are involved. It can occur e.g., when open questions or observations are interpreted, categorized or classified.

The concept of validity is one of the most important criteria for research. It is of great importance that the concept is understood and interpreted correctly since it presupposes an accurate report. It is important to take validity into account in the formation and assessment of the report. The validity aims to examine whether the survey is valid, but also the report's ability to measure what it is intended to be measured. It is not enough to have correct procedures when collecting and processing the data, the data must also generate a context of the report.

The importance of reliability and validity has been determined for qualitative studies, but within the qualitative research there are different opinions about the terms. The relevance of the terms is particularly questioned as qualitative research is not mainly constituted of measurements. According to Bryman (2012), reliability and validity can be adapted for

qualitative research by a minor change in meaning and by reducing the importance of measurement issues. Stukát (2011) believes that there are aggravating circumstances to achieve high validity when the report includes people, which the mentioned report does. A possible source of error may be whether the interviews are truthful or not. In order to counteract the possibility of error, Stukát believes that trust must be established before the interviews take place. The report considered the possibility of error when planning the interviews by having Company X perform an expert selection, choosing reliable interview candidates related to the company.

4. ANALYSIS

The following chapter consist of the analysis process presented in the theory of the report. Internal strengths and weaknesses as well as external opportunities and threats are identified through a SWOT analysis. Furthermore, the potential service is analysed in relation to segmentation, targeting and positioning. The chapter concludes with an analysis of how the most profitable strategy can be achieved and utilized.

4.1 Current situation

Based in Sweden, Company X is an independent, consultant company that aims to create strategic logistical solutions. Their customers vary but a considerate share are e-commerce companies. Company X's main focus is to offer services of total responsibility for logistical flows and structures. The purpose is creating solutions that can grow and evolve with the company and continue to be relevant.

Since this project and more specifically this report aims to conduct a market analysis, the following chapter, including a SWOT and an STP analysis, will focus on Company X and their potential and market position if this service is created and incorporated into their business.

4.2 SWOT analysis

The SWOT analysis will evaluate three factors from the categories: strengths, weaknesses, opportunities and threats. Harvard Business Review (2005) recommends that three factors in each category is addressed, figure 5 illustrates the selected factors.



Figure 5. SWOT analysis

4.2.1 Strengths

Company X is an established logistics company located in Borås. The company has a strong geographical location in a trading city that is the centre of Sweden's e-commerce- and logistics companies. Early on, Borås became the centre of mail order sales in Sweden, and since then the city has had a significant development (Business Region Borås). In 2016 the Borås region was named Sweden's primarily e-commerce municipality, this occurred after companies in the Borås region had been involved in 40 percent of Swedish e-commerce. The following year, the University of Borås started Sweden's first academic master's program in e-commerce (Allhorn, 2017). Borås is now at the forefront of distance shopping's growth and progress as the city symbolizes digital commerce in Sweden (Business Region Borås). Company X's geographical position benefits their business concept since the potential service is aimed towards these types of companies. The

geographical position of Company X's office in relation to customers and the desired market counts as a valuable strength.

Company X's ambition is to create strategic business and logistics flows that opens up new opportunities for rapid growth and increased competitiveness. Company X is an independent consulting company that has built up solid competence around logistics solutions with a focus on the flow. As Harvard Business Review (2005) suggest, is it important to identify the company's core competence. A core competence of Company X is precisely their ability to understand the whole of the flow chain and its activities in order to generate a smooth logistic flow. Company X sells and markets their expertise and does not currently work with selling their own systems and products. The role as independent consultants consequently strengthens the company's credibility regarding robust competence with a focus on the customers' best interests. The company's identified core competence needs be extra skilled compared to competitors simultaneously as the customer values it highly (Harvard Business Review, 2005). Since Company X has a broad and loyal customer base that they interact reactively with, the expertise has been valued so highly that the company has not had to work proactively. Customers have instead decided to invest in Company X's expertise by choice. This pattern implies that the customers prefer and values the company's independent expertise over competitors.

The future is associated with an uncertain and complex world with rapidly changing markets and technologies where the innovative ability is of great importance (Harvard Business Review, 2005). Company X's management shows the willingness to change at the same pace as modern logistics develop. As of right now, Company X is in the starting blocks regarding the development of a logistic solution linked to AI. The company's intention is to change and adapt its future strategies and decisions in order to meet the challenges of the future. The adaptability focuses on expanding its offerings and expertise in combination with innovative, sustainable and efficient logistics solutions linked to today's AI technology. Company X aims to be at the forefront of new innovative technical solutions that potentially could participate in solving the "travelling salesman" problem (Kota, 2018).

4.2.2 Weaknesses

Company X is an independent consulting company that currently does not sell their own services but their expertise in smart logistics solutions, therefore Company X completely lacks experience of selling their own services to customers. The company has not worked with proactive sales but rather has relied on reactive sales. The sales process can have two different approaches, either through proactive or reactive sales. With proactive sales, the company itself contacts a potential customer who is believed to benefit from the offer. With reactive sales, the customer contacts the company as a result of their own identified problem. The main difference is that the proactive approach is driven by sales opportunity while the reactive approach is driven by customer demands (Brehmer & Rehme, 2009). Company X's ambition is to maintain and pitch new ideas to older reliable customers, but also to achieve proactive sales towards additional dream customers. The weakness is situated in the lack of experience regarding own services and proactive sales since it is the aspect of the company that Company X wants to expand.

A weakness of Company X is the inability to communicate technical specifications and offers to their customers. They face the complicated, but commonly, challenge of marketing and selling high tech services or products (Slater, 2014). The company is limited and specialized in smart logistics solutions with consultants who are experts on the subject. In sales processes, customers often lack the extended knowledge that is required and do not always understand the details of the offer that Company X is trying to communicate. Yalcinkaya, Calantone and Griffith (2007) locates that the company's approach to commercialize the service is significant for how successful the sales may be. To summarize the challenge, the inadequate communication can be based on two aspects of the problem. First, the customer may not always possess extensive knowledge of the subject and the ability to understand the offer. Second, Company X's consultants may use a technical vocabulary that the customers do not comprehend. The customers may be affected in terms of technical specifications and offers are not fully understood, while Company X may be affected in terms of the customers rejecting the offer. As a result of the lack of communication, Company X has occasionally had insufficient responsiveness towards customers.

Company X currently lacks the technical expertise required to develop the potential service. The company has expert knowledge in logistics and flows but insufficient knowledge to

create a service with the help of Artificial Intelligence. AI is an advanced technology used to simulate human intelligence through computers or machines (Min, 2010). The weakness is due to the lack of expertise, spread over several technical areas, required for the service. Experts with competence within AI and advanced technology are crucial for the development and future of the service. Historically, Company X has not always managed to ally with other consultants who are skilled in their specific sub-areas, such as an independent IT-partner. There are areas where expertise from other consultants would have and will be beneficial since Company X offers limited expert knowledge. The cooperation between Company X and other actors has been insufficient and may be incomplete in the development of the service.

4.2.3 Opportunities

Company X's progress and development of the service is a timely issue as the market supply does not match market demand. This occurs due to the "travelling salesman" problem that still exists within the order picking in warehouses (Kota, 2018). The choice of strategy is of great importance regarding which market the company wants to compete and operate in. The terms "red ocean" and "blue ocean" describe two different strategies related to the market. Red ocean strategy is based on confronting and competing against competitors in already limited market spaces, winning and then driving the competitor away from the market. If the company adapts to the red ocean strategy, it means that the market is crowded, and competition is severe. It is difficult to maintain a high performance when over-establishment and robust competition create small margins for growth (Kim & Mauborgne, 2005). Company X should be distanced from red oceans and instead target the strategy of blue ocean. Since the problem still remains, there are great opportunities to create blue oceans.

Company X's service is linked to technological innovation, which is sometimes involved in the blue ocean strategy, but it is not always a defining feature. Blue ocean is about identifying, creating and establishing the company in new markets where competition is low or absent. Kim and Mauborgne (2005) believe that the real opportunity is to create blue oceans of undisputed marketplace. At present, competition of companies with similar services is low, at the same time as the interest and the necessity of AI and similar solutions is increasingly common. There are a few competitors who have developed a service with

partially similar features. Company X's potential service, compared to competitors, is more complete since it operates in more areas. Identifying competition and the possibility to gain competitive advantage is an important component of a company's strategy. However, the choice of strategy becomes more valuable since it indicates how much space the competition may take in the company's strategy (Kim and Mauborgne, 2004). If Company X creates a blue ocean strategy, competition will automatically not be as significant. By creating and capturing demand, Company X can compete for an undisputed marketplace with low competition.

The service enables an increased interest in Company X as a company where new markets and customers can be reached. There is plenty of potential in companies searching for innovative logistics solutions and the conducted interviews substantiated the assertion. There are also great opportunities for Company X to develop and expand the sales process in combination with the choice of strategy. Company X's ambition is to work with proactive sales to reach new stakeholders and dream customers. The company has, as said before, worked with reactive sales rather than proactive sales. The offer and communication are essential in order for the proactive sales process to be successful (Brehmer & Rehme, 2009). Company X's current sales process has resulted in a loyal and long-term customer base in, and around, Borås. By combining choice of strategy with the offering and proactive sales, Company X can broaden the customer base. If Company X acquires a well-developed strategy with innovative offers, there are great opportunities to be established as a market leader.

4.2.4 Threats

The customer's lack of competence related to Company X's weakness of not always being able to communicate properly is considered a threat. For Company X to achieve successful sales processes, regardless of proactive or reactive sales, requires proper communication between company and customer. It is a commonly challenge when marketing and selling high tech services or products (Slater, 2014). The difficulty is divided into two levels, the customer's competence and understanding in combination with Company X's ability to communicate and explain. The potential service will not result in a lucrative outcome, regardless of how exceptional the potential service may be, if the customer does not comprehend. It is just as crucial for the customer to understand the beneficial functions of

the service as for Company X. The key to success is determined by the customers, since without their demand the service is virtually irrelevant. The threat is based on the risk that potential customers will decline the service due to insufficient communication between the parties. It is particularly Company X's responsibility to clarify technical specifications in order for the customer to understand the service, as it is in their best interest.

Company X operates in an industry that is constantly pursuing and renewing smart logistics solutions, not least with the advancement of modern technology. Logistics companies are constantly searching for potential improvements in order to impact the profitability and efficiency of their business positively. The most critical threat is situated in the constant development where new ideas, methods and approaches are added. A pattern that is constantly repeated is that blue oceans eventually turn into red oceans. The transformation occurs after other logistics operators pursue and adapt their businesses to the prevailing trends on the market (Kim and Mauborgne, 2005). The risk of falling behind other logistics operators is a threat to Company X as a company. Company X needs to regularly evaluate their current position on the market in order to not become too comfortable. It is a matter of systematically evaluating the market strategy, creating demand and looking for market potential. The risk of ending up in the red ocean strategy is a major threat that needs to be diminished.

The theory of black swans is a major threat that describes events as completely unpredictable and beyond the dimension of normal. A black swan cannot be predicted in advance, the unpredictability of the event is what complicates and aggravates the situation. Black swans are very unusual events based on historic evidence and the events are often related to e.g., history, science, economics or technology. A characteristic feature for all black swans is the severe impact which the event causes. How do Company X prepare for unexpected events that result in extremely negative consequences for the company? According to Taleb (2008), the author of the theory, black swans are not dealt with by forecasting and predicting unpredictable events. He believes instead that the organization should build robustness against negative events while taking advantage of positive events. Once again, it is a matter of building a preferable strategy that focuses on collecting as many positive black swan opportunities as possible. By adapting to the existence of black swans, following the concept of "robustness" and recognizing opportunities when they present themselves, Company X can be offered some protection when a black swan event occurs.

4.3 STP analysis

The STP analysis is an audience-focused rather than product-focused approach to marketing communications. STP stands for segmentation, targeting and positioning (Kalam, 2020) The audience in this case is the intended customers and a selection of them were our respondents during the interviews, therefore the result from the interviews is the substrate for this analysis.

4.3.1 Segmentation

DeSarbo et al. (2015) lists four main types of customer segmentation: geographic segmentation, demographic segmentation, behavioural segmentation and psychographic segmentation. Psychographic segmentation is described as; “*dividing your customers based on “who” your potential customer is*” and is the best fit for the analysis of this service. Gilligan and Wilson (2003) write that the within the psychographic segmentation three distinct types of social characterization and behaviour has occurred:

1. *Tradition-directed behaviour*, does not change much over time, so it is easy to predict and use as a basis for segmentation
2. *Other-directedness*, individual attempts to adapt to the behaviour of their peer group
3. *Inner-directedness*, the individual seems to be indifferent to the behaviour of others.

Although this relatively simple classification method has subsequently been criticized to a certain extent, it provides a basis for a large number of follow-up work, all of which are designed to provide us with a more detailed understanding of personality and lifestyle. To segment a market effectively and get a more specific basis for marketing decisions, it is proposed to use more than one approach. Since the service is a high-tech plug-in device and the intended customers, the respondents, are companies with great knowledge in warehouse-logistics, the approach to industrial markets is relevant. Gilligan and Wilson (2003) describe for dimensions to use for classifying the companies buying situations:

1. Familiarity with the service, and in particular whether it is a new one, modified rebuy or straight rebuy
2. The type of product and its standardization degree

3. The significance of the purchase for the company
4. The amount of uncertainty in the purchase decision.

By using these approaches, the companies who were interviewed could be segmented based on their answers to our questions and the results. Our segmentation led to three different “companies”, *Company A*, *Company B* and *Company C*.

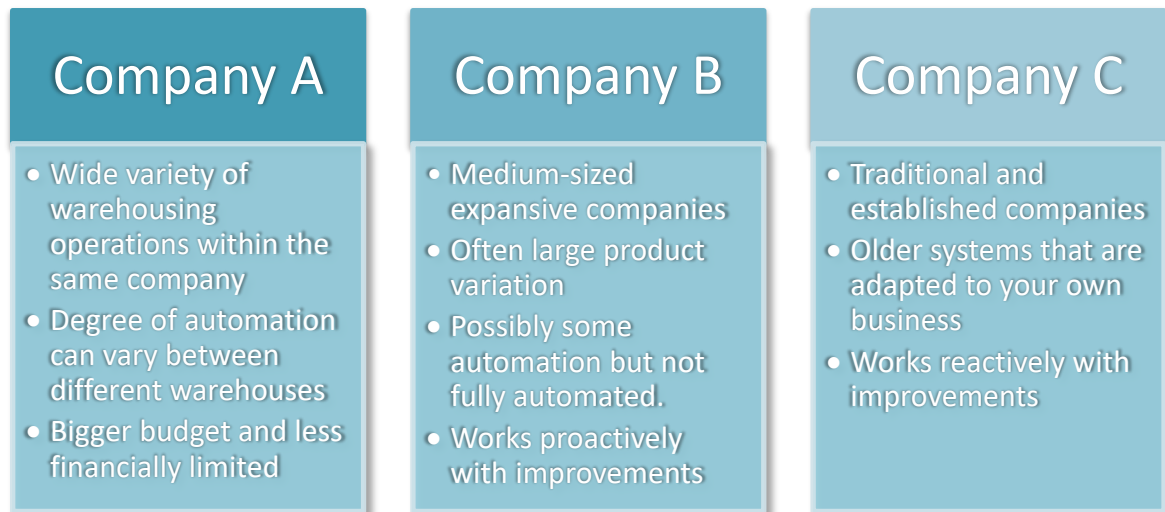


Figure 6. The three companies

Company A: May have a wide variety of warehousing operations within the same company and the degree of automation can vary between the different warehouses, has a bigger budget and therefore less financially limited. In this segment, one of the respondents was placed.

Company B: Medium-sized expansive companies who often have a large variety of products in their range. Possibly some automation but not fully automated and they work proactively with improvements. Four of the respondents were placed in this segment.

Company C: Traditional and established companies with older systems that are adapted to their own business who work reactively with improvements. In this segment, one of the respondents was placed.

4.3.2 Targeting

After determining how to best segment the companies, which and how many of the segments to target needs to be decided. Gilligan and Wilson (2003) mention three factors that needs to be considered:

1. The size and growth potential of each segment
2. Their structural attractiveness
3. The organization's objectives and resources.

The starting point for this is to examine the size and growth potential of each of the segments. What is the "right size" will of course vary for each organization, and whatever the best fit for Company X is decided to be, the same may not be right for a different company. In terms of the possible development of broad guidelines, large companies often focus on market segments with large existing or potential sales and deliberately ignore small segments, simply because they are rarely worth interrupting. Smaller companies on the other hand avoid the use of large market segments, partly because of the effective operation of these resources, and partly because of the need to face larger competitors. Regarding the structural attractiveness of each market segment, the largest concern is profitability.

Company A: The segment itself may not be large, but the companies this segment contains is large in the way they see possibilities for the service. Because of their size, structure and resources they are willing to invest.

Company B: The companies are medium-sized and due to the number of respondents placed in this segment, the segment is wide and large. The companies' will to invest to enable an expansion is striking, and even if the resources may not be the largest, their objective is to proactively improve their logistics.

Company C: A segment in a similar size as "A" but the potential for growth is bigger. The growth in this segment may be slow because of the company's distinct structure and unlike "B" they have a reactive approach to improvements.

Company X should target the segment Company B as it contains most of the respondents and have a great will to invest as they strive to increase their efficiency proactively. Kotler and Keller (2006) list five different patterns of target market selection and after determining the "size" of the segments two of the patterns were found to be fitting: *selective*

specialization and *product specialization*. As mentioned, **Company B** is the best target for Company X and therefore the specific number of segments, they should concentrate in are one. Regarding the *product specialization* the idea is not to produce variants of the service, but because it will be customizable to the different customers' needs it fits into the pattern. Much of the focus directed towards the service and the reason companies from the different segments are willing to invest is its adaptability.

An important question Gilligan and Wilson (2003) asks is: "*Is the segment changing?*" There are different aspects to this question of change. First, the fact that the structure of the segment is likely to change overtime needs to be understood. Is the segment starting to attract new and slightly different members to its centre? What effect will this have on the segment's needs? The second aspect of change relates to the nature of the products and services that this segment will be demanding in the future – in other words, can any significant change in the way in which the members of the segment are likely to translate their needs into buying behaviour be seen? Will they want different products or services in a couple of years? **Company B**'s characteristics are small or medium-sized, expansive and proactive, therefore a change in the segment is inevitable. The company strives to grow into a larger company with a bigger or multiple warehouses for different logistics-solutions and a vary in the degree of automation. Most likely, the companies segmented into **Company B** will change to **Company A**. **Company C** will take a decision to or reach a point where they are forced to update or renew their logistics-system, and in a way become **Company B**. Even though the company is not small- or medium-sized it will look for ways to increase in efficiency and expand in the same way, and therefore fit into **Company B**.

4.3.3 Positioning

To target **Company B** successfully the last step is to position the product. The following three positioning factors can help Company X gain an advantage:

1. *Symbolic positioning*: Enhance the self-image and belongingness of your customers.
2. *Functional positioning*: Solve your customer's problem and provide them with genuine benefits.
3. *Experiential positioning*: Focus on the emotional connection that your customers have with your brand.

Experiential positioning could be a good factor for Company X since they earlier relied on their reactive sales due to their good reputation, but the best fit to position this new service to **Company B** is by using *Functional positioning*. The most striking benefit given to the customer is that they proactively increase their efficiency and by doing so they can expand.

4.4 Strategy selection

In the SWOT analysis, different strengths, weaknesses, opportunities and threats were mentioned regarding Company X as a company, linked to this specific service. One of their biggest strengths is their ability to understand an entire process and its activities in order to generate a smooth logistics process. A weakness is that the company currently does not sell their own services and therefore completely lacks experience in this area. An ambition for the company is to pitch new ideas to older reliable customers, but also to achieve proactive sales engaging new customers. Another weakness related to their lack of experience regarding proactive sales is the inability to communicate technical specifications and quotations to their customers. The consultants are experts in their field but not salesmen. During the sales process, customers often lack the required extended knowledge and do not always understand the details of the offer that Company X is trying to convey. Inadequate customer capabilities related to their insufficient ability to always maintain correct communication is seen as a threat. Proper communication between the company and the customer is required in order for a successful implementation of the sales process. The potential service will not result in a lucrative outcome, regardless of how exceptional the potential service may be, if the customer does not understand the purpose of it.

The challenges with efficiently communicating the functions in a high-tech product to a customer is something many companies encounter. As mentioned earlier Sharma, Iyer, and Evanschitzky (2008) believe that the failure of high-tech sales is partly due to the type of sales structure they use. Instead of following the traditional sales method where the product is fully developed and then introducing a sales perspective, they should do it the other way around. As another solution Teece (1986) suggests that companies should develop complementary assets to ensure successful innovation. Personal sales can be a supplementary asset that plays an important role in high-tech products and can also help ensure the continued performance of the product in the market. From the level of complexity brought about by high-tech products, the importance of using personal sales can clearly be

seen when marketing high-tech products, so more in-depth communication is needed. Sharma, Iyer, and Evanschitzky (2008) also propose that the sales of high-tech products should be driven by demand instead of supply. This means that Company X should start with customers and focus on emerging high-tech products to meet their needs. The focus should be shifted from a single product to selling better services and solutions, therefore selling on demand is more suitable for high-tech products and services. By letting us write this report and interview potential customers and conduct a market analysis, Company X has started the process of demand driven sales in regard to this service.

Blue ocean is about identifying, creating and establishing the company in new markets where competition is low or absent. Kim and Mauborgne (2004) believe that the real opportunity is to create blue oceans of undisputed marketplaces. The competition of companies with similar services is low, and right now the interest and the necessity of AI and similar solutions is increasingly common. As mentioned, there are a few competitors who have developed a service with partially similar features, but Company X's potential service is more complete since it operates in more areas. If the company acquires a well-developed blue ocean strategy with innovative offers, there are great opportunities to be established as a market leader.

The blue ocean strategy is about finding new markets where the competition is not significant. To find which segments of that market to target, the STP strategy was used. The STP strategy was based on the answers and results from the interviews where patterns became clear and from them conclusions were drawn. From these conclusions three different segments were made: *Company A*, *Company B* and *Company C*. All segments are in some way fitting for Company X, but *Company B* is the most profitable one to target. As a last step Company X solves the customers problems by functionally positioning the offer for the service.

In the beginning of this report, the logistics problem of the "travelling salesman" was mentioned, a problem you might say is the basis of the problem Company X strives to solve by developing a service with Artificial Intelligence. By implementing the advice and results from the different strategies mentioned in this analysis, Company X will hopefully be able to fully develop this service and by doing so add value to their customers by solving a, to this day, unsolved problem.

5. CONCLUSION

Since the type of service being evaluated is relatively new and innovative, the opportunities for it on the market are many. The demand is growing, and the competition is low with few functioning services existing at the moment. Therefore, the possibilities of creating blue oceans are clear and reachable. The problem of the travelling salesman is in theory unsolvable but still improvable by optimization. With the assistance of artificial intelligence and this service this optimization becomes considerably easier and therefore is value adding for the end customer.

For this type of service companies categorized as “Company B” would be the most ideal customer. This, because they are medium-sized, expansive companies that often have large product variation. They usually have medium to no automation that could possibly interfere with the functions of the service. They also proactively search for improvement possibilities and have the most to win from implementing this type of service.

An efficient way of handling high-tech sales is trying to make sales demand driven. This means including the potential customers early on in the development process to ensure their needs are prioritized. Company X has started the process of doing this by including external companies and their opinions in this report. For a continued successful process, Company X should proceed with including potential customers and listening to their opinions.

6. DISCUSSION

The purpose of this report is to assist the larger project of calculating cluster placements and picking routes using artificial intelligence. This report works towards the aim of evaluating the market potential and possibilities of the AI-service. It does so by including conducted interviews with potential customers as well as analysing Company X and their potential customers using a SWOT analysis and an STP analysis. As previously written in the theoretical framework, the last step of the marketing strategy that consists of execution and implementation is not a part of this report. Performing this last step would not be possible considering the project is thought to be a proof of concept and the service is yet to be fully developed. This report only aims to assess the market and Company X's potential to develop the service. However, this last step would be beneficial for Company X to perform in a later stage of the development in order to get a clearer understanding of how to market the service.

The initial aim of this report was directed more towards the technical capabilities necessary for the service to succeed on the market, however, it quickly became evident that the size of this report did not allow for such a broad scope of subjects without substantially lowering the quality and usability of the SWOT and STP analyses. The subject is still interesting for the project as a whole but not for this specific report and does not affect the end result in a significant way.

A difficulty in conducting the parts of the SWOT analysis that cover the competitive aspects, weaknesses and threats, that was met was the fact that the type of service being developed is relatively new and innovative. This means that there are few competitors with fully developed services and therefore not much information about the functionality is available. A positive aspect in regard to market potential but an obstacle in conducting the SWOT analysis. Another hindering circumstance for the SWOT analysis is the unavailability of the economic prerequisites of Company X. Since this report is a collaboration between Company X and the university of Borås and not conducted by the company itself, not all aspects of the company are possible to analyse. The lack of economic information does not hinder the fulfilment of this report as the market potential and

possibilities of the service can still be evaluated. Company X could however choose to move forward with this aspect later on if the project continues forward.

The way the segmentation has been conducted, categorizing companies into groups depending on their prerequisites and characteristics, enables the analysis to be more widely used. Any other company that fits into one of the categories can be positioned.

If the project and development continue forward, it could be of interest for Company X to further deepen the market segmentation, adding more companies to the already existing categories and possibly adding new categories.

Moreover, a potential issue with the interviews that could possibly have affected the result is the fact that the companies being interviewed were chosen by Company X. The companies, in turn, already have a formed opinion of Company X as a company and that could affect the result of the interviews. It would be desirable to broaden the scope of companies and markets being interviewed with the aim of widening the results and possibly finding new markets to enter. This could give Company X new opportunities to find blue ocean markets to explore.

Lastly, it would be beneficial for Company X to further explore the field of selling high-tech products. As previously mentioned, there are many difficulties in selling products that potentially are difficult to understand. Therefore, obtaining knowledge in this field could give Company X an advantage on the market and once obtained, the knowledge can be applied to selling any product considered high-tech or in any other regard advanced.

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APPENDIX

Appendix 1 - Interview guide:

1. How does your current system work and how does it store data? Are you using a WMS- or ERP-system?
2. How are your goods placed in the warehouse and how does your goods picking process work?
3. What do you see as your next big development? Are you considering automation?
4. What benefits do you think the service could bring to your company?
5. How often do you think it would be interesting to utilize the service; quarterly, monthly or continuously?
6. Have you invested in anything related to optimization earlier and if so, what was the scale of the investment?
7. Would your company be interested in investing in the service?



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