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E-Commerce Last Mile Transportation Cost Drivers

Possible Impact a Company within The Digital Market of Incontinence Care Products can have on Cost when Outsourcing Logistics Services

Master's Thesis in Supply Chain Management

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ABSTRACT

Problem: SCA's incontinence care brand TENA has relatively recently introduced an e-channel to, amongst other reasons, attract first time consumers. When incontinence care products are being compared over the internet, the cost of delivery is often used as a mean of competition. For TENA, the cost associated with the fulfilment process included in the home delivery is exceeding the ones of their traditional channels. With products whose cost to a large extent consists of logistics, and with volumes that calls for outsourcing, their possible impact on cost reduction lies largely in their relation with logistics service providers.

Aim: The purpose of this thesis is to investigate how a company, selling incontinence care products through an online sales channel in Sweden, can affect the cost of last mile deliveries, before and during the purchasing process of logistics services.

Method: The thesis has been conducted with an abductive research approach. The ground on which the study is based consists of two blocks; empirical findings and theory, integrated in order to reach the objective of this study. Data have been extracted with the help of a literature research, a survey and qualitative semi-structured interviews with academic experts, industry specific experts and company-specific professionals.

Results and implication: The digital market for incontinence care products is in Sweden, with very careful calculations, expected to increase with some 500 percent the upcoming ten years. In order for a company to internally reduce cost they should aim at being more transparent and create incentives for their customers to subscribe or choose collection points. They should also aim to use collaboration to optimize their flow. Characteristics, such as having a stable, growing target group that allows a large delivery time window and have very few returns, works as a great bargain power. When looking at logistics service providers, the company should consider them who can offer new flexible solutions with short completion time, low cost and accurate deliveries. While creating specifications for logistics services the overall goal is important as well as not being too specific in order to leave space for different solutions. The company should also, as early as possible, share all available data. Important to remember is also that evaluation of LSP should be made regularly even though the channel stands for a small share of total orders and even though the channel might not have the primary purpose of being profitable on its own. The evaluations should aim at creating solutions that go along with the long term goals of the company. When the market change the channel might grow, then the purpose of the channel might change evoking needs of being more profitable.

Keywords: *Last mile transportation, E-commerce, Logistics Service Providers, Multi-channel, Crowdsourcing, Horizontal Collaboration*

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Gothenburg, June 8

Gabriella Hjält

Julia Kollberg

TERMINOLOGY

Bulky Products	A product with a large size compared to its weight that is more difficult to handle (van Nunen, et al., 2011).
Cross-Border Delivery	The buying and selling of services and goods in either B2B or B2C channel, where the parties are not located in the same country (Gomez-Herrera, et al., 2014)
Crowdsourcing	Similar to open source software, the underlying idea with crowdsourcing is to use potential resources from a potentially large and unknown population, called the crowd, in an idea generation contest (Howe, 2006)
Customer Touchpoint	Customer touchpoints represent all those places in which the brand is in contact with the customers. These could be through reviews, online advertisement, retail store, etc. (Weinberg, et al., 2007).
Demographic Changes	Demographic changes represent the dynamics in the quantifiable statistics of a given population. The aim is to understand population changes, such as age distribution, gender, ethnicity, etc. (Harper, 2014).
E-Channel	A way of bringing products or services to the market by using an electronic channel (Rosenbloom, 2007).
E-Commerce	E-commerce stands for trade based on an electronic server. In order to purchase through an e-commerce channel, applications of information and communication technologies (ICT) are required (Visser and Nemeto, 2003).
E-Tailer	A retailer selling goods through an online sales channels instead of an offline sales channel (Fernie and McKinnon, 2004).
Electronic Data Interchange (EDI)	EDI stands for computer to computer exchange of business information through a standardized electronic form between businesses. It is a way of easily exchanging information automatically (Premkumar, et al., 1994).
Globalization	The worldwide movement to spread businesses, technologies,

	or philosophies throughout the world. It is referred to as a situation in which available goods and services, or social and cultural influences, gradually become similar in all parts of the world (Grant, 2015).
Home Delivery	With home deliveries there is a change of context- from B2B to B2C. The difference is that the product need to be handled, stored and transported to and for an end user instead of as traditionally to a retailer (Fernie and McKinnon, 2004).
Horizontal Collaboration	Horizontal collaboration is a partnership where the logistical activities are clustered horizontally for companies on the same level of the supply chain, and are considered to be one of the most optimal designs of supply chains (Van Breedam, 2016).
Last Mile / Last Leg	Refers to the final part of the transportation from the final hub to the consumer (Goodman, 2005).
Logistics Service Provider (LSP)	A company that outsources their logistics services turn to a logistics service provider who can provide management over the flow of goods and materials between points of origin to end-use destination. Normal activities included in the process are shipping, storing, handling, warehousing, packaging, and security functions (Lin, et al., 2015).
Multichannel	Using of a wide variety of marketing methods as well as channels for customers to purchase the specific product or service, such as online channel, retailer, etc. (Weinberg, et al., 2007).
Order Fulfillment	Order fulfillment includes all actions taken place from received order until delivery. Hence, order fulfillment includes both back-office actions, such as inventory management, packing, shipping and delivering, and front office activities where all actions towards the customer are involved. The objective with this is to, at the lowest cost, get the right product to the right place, in time (Turban, et al., 2015).
Urinary Incontinence (UI)	Urinary incontinence is by the International Continence Society (ICS, 2016) defined as “any involuntary leakage of urine”

(Abrams, 2013).

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1 INTRODUCTION

In this introductory chapter a motivation of the relevance of the thesis is presented. The different subjects that will be treated in the thesis are introduced and justified after which the purpose along with its scope is stated and problematized.

1.1 BACKGROUND

The world today is global, fast changing and aging. There are less newborns and we live longer. In 2050, the number of persons over 60 years old will double (United Nations, 2015), a demographic change that will result in implications for health and welfare service demand affecting consumption and transportation patterns (Harper, 2014). This is not the only contributor to changed customer and transportation patterns. The globalization and the increased ease of internet use have contributed to the growth of online sales (Mangiaracina, et al., 2015). The percentage of online sales has grown for every year since the introduction of e-commerce. However, the percentage is still low which means that more change is predicted to come and that good logistic solutions need to be functional at that time in order to meet the future demand (ibid.)

Adding an online sales channel affects other sales channels and the company as a whole. The new channel needs to be integrated, coordinated and the multichannel strategy need to reflect its presence (Weinberg, et al., 2007). The reasons to add an online sales channels can be many, for example, the company can be in need of a less expensive interface, or they would want to increase customer loyalty by offering extra online service and boost customer satisfaction (Melis, et al., 2015). It could also be for competitive reasons, meaning that the company wants to offer the same customer touch-points as their competitors (Kollmann, et al., 2012). When adding channels, the complexity of evaluating their performance increases, and even though a channel is on its own profitable, it might not be the same in combination with other channels. E-channels are growing quickly creating difficulties in planning and handling different activities attached to it (Meeker, 2015). For products that have a target audience that is above 50 years old, the growth of an e-channel is likely to be subdued by the internet-behavior of the users. Digital immigrants, people who are not born into the widespread usage of information technology, are less inclined to interact and adopt online sales channels (Kirk, et al., 2015). This implies that the growth for online sales, targeting an aged population, can be expected to be even higher when coming a switch of generations.

As mentioned before, the online sales channel requires different handling which creates increased importance of the logistics performed. When selling a product online, a company adds value to the product in terms of delivery-alternatives that becomes a way of competing (Agatz, et al, 2008). In order to offer high quality service, as well as to decrease the cost for the last leg of distribution, many companies use a logistics service provider (LSP). They are typically specialized in integrating all logistics services, such as warehousing and transportation, so that they can be scaled and customized for the demand based on the market conditions. By combining the flow of goods from many different companies, unnecessary transportation can be somewhat limited and different actors can focus on their core competences (Graham, 2011). However, the order fulfillment service, of which logistics is the major part, differs between traditional retailing and e-tailing. For the latter, shipments are smaller, less valuable, and destined to more dispersed locations which makes the process relatively expensive (Turban, et al., 2015). To control the result and the costs, a company that outsources these functions need to make adequate selection of their choice of logistic service provider.

Being in a position with a relatively new channel that needs to be integrated is not unusual. One of these companies is SCA whose incontinence care brand TENA has during 2012 added a webshop to their Swedish sales channels. The TENA webshop increases the number of last mile deliveries which are more expensive and demands a different process for packaging and shipping the products. As opposed to their previous home delivery solution for public tenders extending over several years, this new last mile delivery requires shorter lead-time and has a less stable demand. The trends are indicating that e-commerce, and last mile deliveries with that, will not cease to grow (Grant, 2015). The last leg of distribution stands in general for approximately 30 percent of the total cost of logistics (Goodman, 2005; Scott, et al., 2009; Rodrigue, et al., (2009).

SCA foresees that a potential increase of the online market as well as changed trade patterns will place new demands on the order fulfillment process for the TENA webshop. It would therefore be necessary to make a market analysis of the incontinence care market for the webshop. Furthermore, it is important to examine the purchasing process of logistic services in order to establish how to affect the cost of distribution for the online sales channel.

1.2 PURPOSE

The purpose of this thesis is "how can a company selling incontinence care products through an online sales channel in Sweden, affect the cost of last mile deliveries before and during the purchasing process of logistics services".

The report aims to map differences between traditional and online retailing that should result in suggestions for how to make the order fulfillment as efficient as possible. The objective is to create guidelines that can serve as a basis for the TENA webshop in Sweden whilst choosing logistics service provider for their last leg of distribution.

1.3 PROBLEM DEFINITION

In order to, in a structured manner, reach the aim of this study the purpose has been divided into different subareas. Within each research area several questions have been formulated that aims to identify different problems. The subareas that follows are ordered so that they are increasingly narrow in their character from being generic until being specific for TENA's webshop. In figure 1, the different research areas are presented along with its intended purpose.

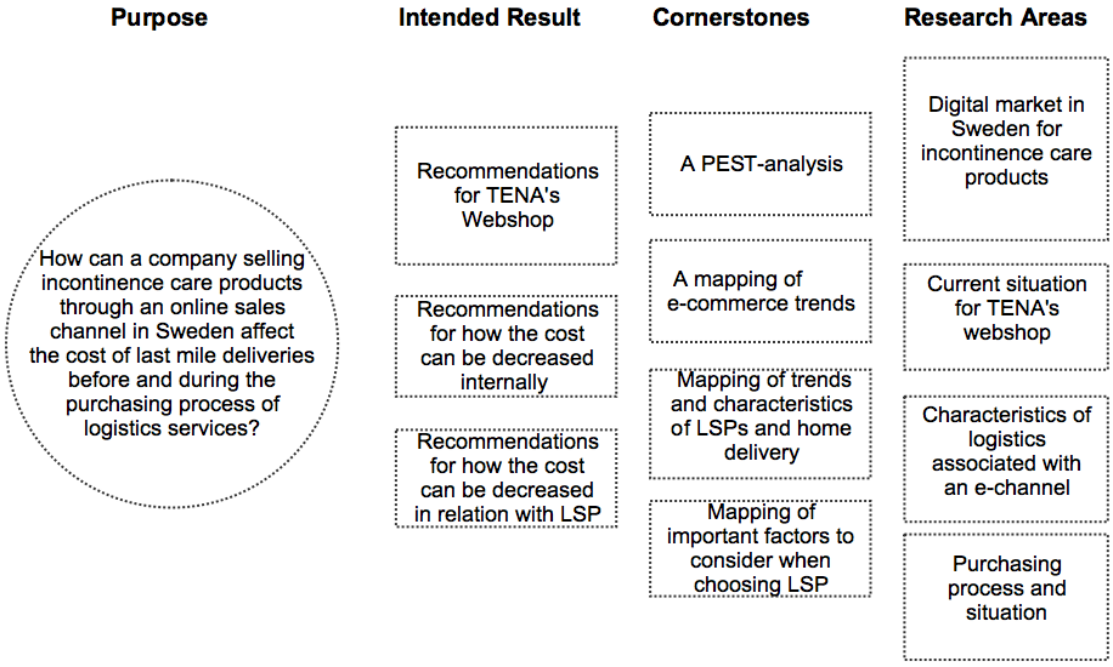


Figure 1 - The research areas and their objectives

1.3.1 The Digital Market for Incontinence Care Products

The number of customers for a digital distribution channel is dependent on the customer and consumer behaviors and on their requirements. For these reasons, there is a need to understand the e-commerce market as it currently is and the emerging trends affecting it. Furthermore, the market of incontinence care is changing due to social and demographic changes. Urinary incontinence is considered to be a tabooed condition and consumers experience the products to be inconvenient. In order to understand the current and future changes of the digital incontinence care market online, the following questions has been formed.

- What external factors influence the digital market of incontinence care products?
- How is the market for incontinence care expected to change over the years?

1.3.2 Current situation for TENA's Webshop and its Logistics set-up

SCA world's leading brand in incontinence care TENA has launched a webshop in Sweden 2012 with a national last mile delivery set-up in. In order to come with recommendations for the webshop and the current logistic set-up, the following questions has been stated.

- What is the current situation for the TENA webshop?
- How is the current logistics set-up for the last mile delivery?
- How good the webshop is compared with known success factors?

1.3.3 Characteristics of the Logistics Associated with an e-Channel

As the last mile has a great impact on the total logistics costs, the requirements on the LSP need to enable an efficient distribution. In order to make such specifications an understanding of the nature of last mile deliveries and its distinction from deliveries to retailers is vital. Additionally, to understand how a company can work with the distribution in a cost efficient matter, the trends affecting the future of last mile delivery as well as its cost drivers needs to be recognized. The following questions have been formed to explore this area:

- How is last mile delivery different from delivering to retailers?
- What are the cost driver for last mile deliveries?
- What are the trends within last mile deliveries?

1.3.4 The Services and Purchasing Process of Logistics Services

The market for LSPs is steadily increasing and more companies turn to them in order to improve quality of transportation and decrease distribution cost. In order to understand the most important metrics when choosing LSPs and to create a broader knowledge of the role they play as well as upcoming trends the following questions has been formed.

- What are the most important factors when choosing LSP?
- What are the most important parameters whilst choosing LSP?

1.4 SCOPE

The scope of this study concerns how a company selling incontinence care products through an online sales channel in Sweden can, before and during the purchasing process of logistics services, affect the cost of last mile deliveries. The aim was to establish guidelines that could be used during the process of purchasing, maintaining and evaluating a LSP in Sweden offering last mile deliveries for an e-channel of incontinence care products. When performing the study, there has been a number of limitation and delimitations constraining the scope.

The purchasing process that the study will establish is optimal in accordance with what has been studied and for the specific situation, thus not generally applicable. Since this thesis does not have sufficient resources to explore all possible variables, only the ones considered most important will be analyzed. There is therefore a possibility that there are other constraints or variables, existing now or in the future, that should have been considered.

We solely look upon last mile delivery of TENA's incontinence care products initiated by the webshop, or on flows similar to it, in Sweden. That means that only the flows from the warehouse in Falkenberg to the end-consumer is accounted for and that the supply chain upstream is not taken into consideration. This is chosen since the physical flow from the factories are the same for all channels up until they arrive at the warehouse in Falkenberg.

Implicitly, limiting the LSPs to be within a certain country indicates that there is never the option of direct cross-border transportation from a foreign country to a consumer. Shipping small volumes of low value goods does currently not call for such expensive transportation. Nevertheless, it is necessary to analyze it possible contributions.

When exploring the trends not all possible scenarios could be covered given the dedicated resources. For this reason, a time frame of about ten years is applied considering the

magnitude of the impact the trends would have. The less the impact the narrower the time frame. By considering the close future only, the likeliness of events to take place and being measurable is greater. Accounting for those kinds of events is therefore considered to be more efficient.

1.5 THESIS OUTLINE

Chapter 1 – Introduction: An introduction and a motivation of the relevance of the thesis is presented. The different subjects that will be treated in the thesis are introduced and justified after which the purpose along with its limitations and delimitations is stated and problematized.

Chapter 2 – Methodology: The design of the study as well as what research and method approach that has been used is presented followed by information on how the literature research and data collection has been performed.

Chapter 3 – Theoretical Framework: The relevant theories and models used in this thesis are here presented.

Chapter 4 – Practical Framework: The relevant topics associated with the purpose of this thesis are here presented.

Chapter 5 – Company Description: The Company and the current situation for the TENA webshop is here presented based on internal company documentation and interviews with employees.

Chapter 6 – Findings from Interviews and Survey: Finding from the conducted interviews as well as from the survey is presented in this chapter.

Chapter 7 – Analysis and Discussion: The analysis and discussion is based on the precious findings in the theoretical and practical framework as well as finding from interviews and surveys. The aim is, by treating each research area, to answer upon the purpose of this thesis

Chapter 8 – Conclusion: The answer to the purpose of this thesis is here presented followed by the relevance of the thesis and future research suggestions.

2 METHODOLOGY

In this chapter the design of the study and a description of what methods that has been used is defined. The design of the study as well as what research and method approach that has been used is presented followed by information on how the literature research and data collection has been performed.

Figure 2 shows how the work has progressed during the time period and how the different activities have overlapped. Purpose and problem definition have been developed and refined during the period and as new interesting fields has been introduced, further investigation regarding these has been made. Finally, the results have been combined and discussed, in order to establish a conclusion.

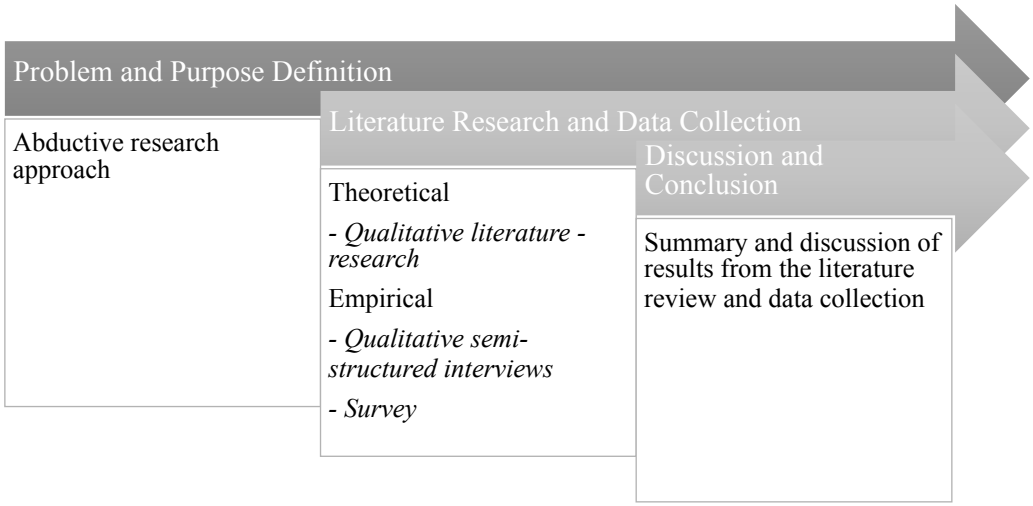


Figure 2 - The methodology used in this thesis project.

2.1 RESEARCH APPROACH

The research in this thesis consists of two blocks, one empirical and one theoretical. Interviews and a survey generate the empirical block, and a literature research generates the theoretical block. This thesis will be based on an abductive method approach, which is a combination of a hypothesis-deductive method and an inductive method (Wallén, 1996). The notion is that either theory nor empirical data can be understood or stand alone, instead, by iterating through them both, it is found that researcher can broaden their view and improve their understanding of both theoretical and empirical phenomena (Dubois and Gadde, 2002), see figure 3.

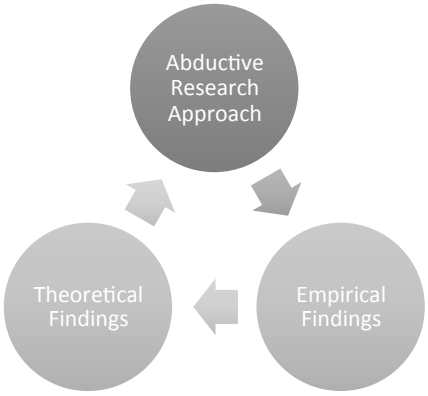


Figure 3 - Abductive reasoning

Furthermore, an abductive research approach allows for the researchers to continuously re-modify the original framework. Hence, as the study goes, additional findings can emerge through interviews, case study and literature research which can, if interesting, be further investigated with an abductive method. Thus, the method is open towards changes and implies an iterative process between empirical findings and theory throughout the study (ibid.).

The approach is suitable in this study as empirical and theoretical data both have significant value, and the other approaches mainly focus on one. Also, this study will not be able to take all possible solutions into consideration, and therefore iterating through empirical and theoretical findings makes it easier to draw reliable conclusions. Furthermore, this approach is strong as the result is a combination of two blocks and therefore enables a larger amount of variables in the analysis.

In addition, this method does not require an initial hypothesis, which makes the research relatively unprejudiced. According to Wallén (1996), working without a hypothesis has both strengths and weaknesses. Benefits include decreased risk of using facts pointing towards the same direction whereas drawbacks include that the final result can be further away from the original purpose than if an initial hypothesis was used. The reports direction has therefore been reinvestigated continuously during the period to ensure that the result moves towards the purpose of this thesis.

2.2 METHOD APPROACH

In regards to properly addressing the aim of this study, being able to understand and take into consideration individual thought, beliefs, and subjective opinions is of great importance. Thus, a qualitative research, able to capture and collect all these impressions, will in this

thesis be performed. A qualitative study is based on a limited number of sources used as an input for a deeper analysis. The sources can according to Wallén (1996) contain both primary and secondary data. The literature research, the company specific information, the interviews and the survey in this thesis represent all the qualitative part.

A qualitative study incorporates activities such as collecting and analyzing data, develop and modify theories, elaborate or refocus the purpose and research areas and deal with validity and reliability. In this study, these activities have been run in an iterative progression where they have been more or less operating simultaneously, where each modification have influenced the other activities. This is the common process during a qualitative study (Maxwell, 2008). Grady and Wallston (1988) argue that a qualitative research should be performed with openness towards changes and flexibility regarding the purpose and the output of the project. Yin (1994) state that even though a qualitative study may seem unstructured, it does not lack a research design. He means that a qualitative study instead requires a broader and less restrictive concept of design.

. In this thesis, four inputs are used namely; surveys, interviews, internal company documentation and literature research, together they enable triangulation, see figure 4. Triangulation means that different sources and methods are used to investigate the same area, it therefore enriches and confirm the information found (Yin, 2013).

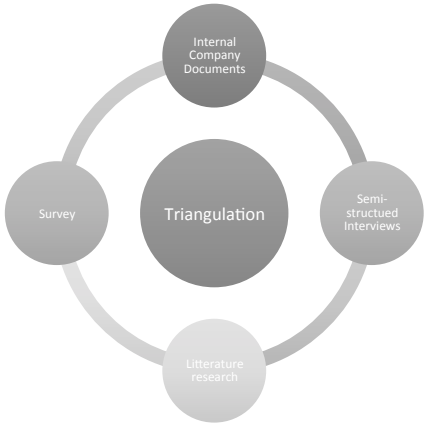


Figure 4 – Triangulation using different sources for one analysis

The use of a specific company, as in this thesis, was before considered to be not valuable in a larger scale. The main argument was that case studies provided little basis for scientific generalization according to. However, in more recent days, case studies have been considered to be a valuable tool and should be seen as an advantage rather than a disadvantage. Learning from a particular case where empirical findings is combined with theory and analyzed for the

specific situation increase the overall understanding for general cases, similar to the one studied (Yin, 2013). Greener (2008) points out the importance of using different sources in order to establish an accurate analysis

2.3 LITERATURE RESEARCH

The literature research is considered to be one of the most important tools whilst carrying out a research project (Bryman and Bell, 2011). A literature research works as a great support for the thesis as time and resource limit makes it impossible for the authors to self-investigate each area. Furthermore, verifying the results of self-conducted research would be time consuming and difficult (ibid.). The main reason for the literature research was to gain knowledge and an overview of already established theories.

According to Nelke (2006), the amount of information available is very extensive and the need for screening to find what is relevant for the literature study is important. An initial screening was conducted in order to broadly understand the market of e-commerce and incontinence care as well as the purchasing process of LSPs. The aim was to collect secondary data, in other words data originated from articles and reports already conducted by researchers (Denscombe, 2003). By doing so, the study was more efficient and could develop as well as adapt existing work to the frames of this thesis. The secondary data used in this thesis was accessed through highly reliable sources such as published articles and books as well as reliable web pages.

Articles can be written at different times and from different perspectives. It is therefore important to have a focused literature research and to only use sources with the same focus and high quality mean Nelke (2006). In this study, we chose to retain a certain degree of transparency since too much focus can imply that only the parts that strengthen the hypothesis of the written work is lit. Therefore, a balance between openness and focus is necessary in order to create a high-quality literature research.

The literature research in this thesis has both a theoretical and practical focus. The theoretical framework was mostly used as an analytic tool whilst the practical framework investigated specific subjects connected to the different markets and especially the one for TENA. The resulting practical framework was used as an analysis tool to exploit the theoretical framework and thus, along with the empirical results provide a better understanding of the market and the product that the study focused on.

2.3.1 Theoretical Framework

In the theoretical framework tested models and established theories were used to find input on theories and models used whilst choosing and purchasing logistics services. Furthermore, some of the dedicated time of the literature research was aimed to the search for theories and models on how to conduct a market research. The theories, methods and models found were then used combined with the information from the empirical findings and the practical framework in order to perform an analysis and draw conclusion about the market requirements and the proposed actions.

The purchasing process were examined in order to understand the different steps of the process and how these are interrelated. Moreover, to understand how different characteristics matters when choosing LSP, the evaluation was investigated. Lastly, a market analysis was conducted with the help of a PEST-analysis. That models was chosen since it takes the most important external factors into considerations, which for this purpose was of most interest.

2.3.2 Practical Framework

In order to support and underpin the results of the theoretical framework and the empirical findings, a study of the market for incontinence care products was performed to create a platform for an abductive analysis approach. The study aimed to understand this specific market and a broader perspective was used initially. The purpose was to understand e-commerce and the current and future market changes and then further narrow the study down to the incontinence care market and especially the one for TENA.

Furthermore, information gathered about last mile deliveries, LSPs, city logistics and new emerging trends within logistics affected by online sales was investigated. This information was considered important to draw conclusions on how TENA should work to decrease cost and improve service when purchasing logistics services.

2.4 DATA COLLECTION

Collection of data is necessary in order to describe the current situation and provide further information to the literature research (Wallén, 1996). Using only one source of data is commonly considered as less reliable and many argue that a survey to reinforce the arguments is to prefer (Jansen, 2010). Data collection can be an expensive research method in terms of human capital, it is therefore important to carefully plan each activity in advance. In this

thesis, data was collected by the use of a survey and semi-structured interviews, as is presented in the following paragraphs.

2.4.1 Semi-Structured Interviews

Interviewing is one of the most commonly used methods to collect primary data. Even though time consuming, it is still considered to be a valuable method and an effective way of capturing inaccessible information and data, such as knowledge and experience (Bryman and Bell, 2011). One usually distinguish between qualitative and quantitative interview methods, were qualitative represent unstructured and semi-structured interviews and quantitative represent structured. Structured interviews are used to quantify selective information. The idea is to gather a result that is representative for a bigger crowd. Qualitative on the other hand use a low degree of standardization and personalize the interview for each participant. It is commonly used for in-depths interviews with a small number of participants.

Bryman and Bell (2011) argue that the best technique for interviews that should be conducted with a small number of participant with specific knowledge should be of the qualitative nature and most preferably semi-structured. In this thesis the purpose was to achieve in-depth interviews in order to accumulate branch specific knowledge in different areas at SCA as well as industry specific knowledge from LSPs and others experts. The interviews were conducted with a small number, 12, of carefully chosen participants. Hence, a semi-structured qualitative method was appropriate for this thesis.

Semi-structured qualitative interviews use a structured amount of questions as a guideline for the interview but adapt the questions based on the answers from previously asked questions to gain opportunities for the respondent to elaborate (Bell and Bryman, 2003). This method has several benefits and weaknesses that the interviewers need to be aware of whilst preparing, conducting and analyzing the interviews. Taylor, et al., (2015) argue that semi-structured interviews could uncover previously unknown issues for both the respondents and the interviewer in advance. It can address complex topics through probes and calcifications. Furthermore, it can ensure that all topics are treated, but still enables the interviewer to elaborate further questions based on previous answers. It also provides a mechanism that redirects the conversation if it diverts too much from the script using prompts. As all techniques, there are some weaknesses with semi-structured interviews that Taylor, et al., (2015) present. They mention that there can be a bias where the interviewer due to his or hers' background influence the interview and the respondent. Furthermore, some training is

required as there is still a part of the interview that is unstructured and due to the unstructured part, consistency between each interview can be hard to ensure.

2.4.1.1 Implementation of Interviews

The desire with qualitative semi-structured interviews is to expose the human in the story. Skilled interviewers can nurture the person through the storytelling, and get insight in lived experience. People often tend to appreciate stories within their own context, the hard part is to ask the right questions to elicit the right stories. In order to create the best possible opportunities for an interview, an interview protocol needs to be established (Jacob, et al., 2012). This protocol comprises more than just the questions to ask, it also extends to the procedural level. Included in the protocol should be scripts of what to say in the beginning and the end of the interview, prompts for the interviewer to collect informed consent, and prompts to remind the interviewer the information that he or she has an interest to collect. It works as a procedural guide for the whole interview, furthermore, it also enables the interviewer to ask questions freely but creates a foundation of security and ensures that the right information will be extracted (ibid.). In order to create a successful interview protocol, the authors have chosen to follow the guidance of Jacob, et al. (2012), the steps are presented in Appendix B.

The interviews with industry specific key-persons were conducted via telephone, whilst the others were conducted face to face. The initial contact was made with the respondent through e-mail, and sometimes with a telephone call, where the purpose of the thesis was presented and what information we wanted from the respondent. After an agreement of time and place for the interview, the questions were sent out in advance. The aim was to ensure that the respondents had knowledge of the areas the interview would touch upon and with this give each respondent the opportunity to prepare. The interviews were all conducted by both authors of the thesis, one took charge of the conversation whilst the other one focused on taking valuable notes. This was done so that conformance could be enabled. All interviews were further recorded to ensure that all focus could be placed on the respondent. The result of each interview was directly transcribed in order to minimize the risk of misinterpretation. When transcribed, they were sent to the respondent in order to let him or her make comments. Most interviews lacked some information when transcribed that was further asked either via e-mail or telephone and noted in the final transcription. The final questionnaire for each interview can be found in appendix C.

To compile and discuss the results that emerged from the interview study, a qualitative analysis was conducted which, according to Eriksson and Wiedersheim-Paul (2008) is the only way to analyze such result. A qualitative analyze means that each interviews are read firstly by its own and then compared to each other. By noting the main points and then reread the transcripts again, the most important results can be analyzed (Eriksson and Wiedersheim-Paul, 2008). In the chapter empirical findings, all interviews were compressed so that the results were reported without disclosing the full interview, these results were interpreted and discussed subsequently in the discussion and analysis. In the same chapter, the qualitative analysis of the semi-structured interviews is compared and combined with the quantitative analysis of the survey. Together they can, according to Eriksson and Wiedersheim-Paul (2008), complement each other and generate nuanced studies.

2.4.1.2 Respondents

Table 1 - Respondents for the interviews

Respondents	Company/Organization	Current role	Date
	Logistics Service Providers		
Nikolai Kolderup-Finstad	Schenker Logistics	Solution Designer	2016-04-08
Anders Holmberg	Schenker Logistics	Strategic Business Development Manager	2016-04-15
Carl Jarnegren	Bring	Partner Manager	2016-04-21
Johan Holgersson	Bring	SVP Marketing and Director e-LABS	2016-05-06
Tom Gibel	DHL	Director Human Resources	2016-04-26
Björn Johansson	PostNord	Supply Chain Manager	2016-05-10
	Experts in Supply Chain Management		
Dan Andersson	Chalmers University of Technology	Associate Professor, Technology Management and Economics	2016-04-09, 2016-04-22
Arni Halldorsson	Chalmers University of Technology	Deputy Head of Department and Professor, Technology Management and Economics	2016-04-29
Sara Rogerson	Chalmers University of Technology	Doctoral Student, Technology Management and Economics	2016-04-27
	Employees at SCA Hygiene Products AB		
Fredrik Ekman	SCA Hygiene Products AB	Key Account Manager	2016-04-18
Viktoria Stridh	SCA Hygiene Products AB	Regional Business Logistic Manager	2016-04-20

Anker Christensen	SCA Hygiene Products AB	Logistic Manager	2016-04-21

The respondents were chosen after expertise and also to some extent to enrich the branch specific knowledge. All the participants are shown in table 2 after which a motivation and the purpose of each interview is presented. This is to provide an understanding of the various interviews and what have been paid attention to during the analysis of the results.

Employees at SCA Hygiene Products AB

The purpose of the interview with employees at SCA was to bring understanding to the company as a whole as well as the development of the webshop and the current set-up. The idea was to look into what the purchasing process of logistics services looked like and which requirements and contextual factors that were the most important. The questions used were both concerning the webshop's function, the current set-up, the purchasing process of LSPs, the involved functions and contextual dimensioning.

In order to understand both the marketing side as well as the logistics process, three interviews were conducted. Two were were focused on the logistics side of the company. The respondents where Victoria Stridh, regional business Logistic manager. Stridh was chosen as she is responsible for the purchasing process of logistic in northern Europe. Since the thesis focus on the market in Sweden, Stridh was the natural choice as she is very well established in the process. The second employee within logistics was Anker Christensen who is logistics manager at the Falkenberg warehouse. Christensen was chosen to gain more knowledge about the actual process on sight in Falkenberg, the central warehouse in Sweden. Lastly, a respondent from market and sales was chosen to understand the customer side of the company. The participant was Fredrik Ekman who works as a key account manager for the webshop in Sweden where he is responsible for ensuring that the webshop meets the customer's demand. For this thesis he was also the natural choice since the thesis needed information on the customer segment and demand as well as how SCA works with their webshop to meet those.

Respondents from Logistics Service Providers

The aim was to find experts on four of the biggest LSPs in Sweden and preferably interview one or two on each company. The biggest actors within logistics services could contribute with specific knowledge of logistics associated with e-commerce which was beneficial for the

thesis. Moreover, they were considered representative for the specific industry and well-established. The four companies chosen were amongst the largest ones in Sweden; DHL, Schenker, Bring and PostNord. Apart from acting on the Swedish market, the first two are globally present whereas the last two are present in the Nordics.

The first interview was conducted with Nikolai Kolderup-Finstad, Solution Designer, at Schenker. He was chosen since the authors had seen him lecture and believed that his knowledge could be very valuable for the thesis. Kolderup-Finstad after the interview recommended his colleague Anders Holmberg, Strategic Business Development Manager, at Schenker to enrich further the information that he felt he lacked knowledge about.

At Bring, Carl Jarnegren who is Partner Manager was chosen. The contact was distributed from Bring after contacting their customer service. Carl Jarnegren further recommended an interview with Johan Holgersson, who has participated in many different channels such as *E-handelpodden* and his own blog. Johan Holgersson also works at Bring where he has the position SVP Marketing and Director e-LABS.

At DHL, the interview was conducted with Tom Gibel who has a long history at the company and currently works as Director of Human Resources. Before that, he has worked within operations and logistics at DHL. He was chosen as he has a broad understanding of DHL as a company as well as the field of logistics.

Lastly, an interview was conducted with PostNord. They are the biggest postal service company in Sweden. The interview was conducted with Björn Johansson from PostNord who is a Supply Chain Manager working with the IT-side of home delivery.

Experts within Supply Chain

The aim of using experts within supply chain was to get another insight apart from the participants linked to a company within the industry. The purpose was to, from an academic point of view, understand the purchasing process of LSPs and trends overall affecting logistics today. The chosen participants were all active within the different areas of interests. The first interview was conducted with Dan Andersson, Associate Professor, Technology Management and Economics, at Chalmers University of technology. Andersson was chosen as he has a large knowledge within logistics and in the purchasing of freight and was considered to have very valuable insight in the industry.

Secondly, an interview was conducted with Sara Rogerson, Doctoral Student, Technology Management and Economics, at Chalmers University of Technology. Rogerson

has published some articles regarding the purchasing of freight and currently works with articles in the same field. Her knowledge was therefore considered to be very up to date and valuable in this thesis.

Lastly, Arni Halldorsson was chosen. Halldorsson is the Deputy Head of Department and Professor at Technology Management and Economics, at Chalmers University of Technology and is a lecturer and examiner of the course *Purchasing and Supply Chain Managemen*t. Halldorsson has an extensive knowledge in the area of purchasing and has been in the field for many years.

2.4.2 Survey

A survey uses a sample of members to understand characteristics in a specific market (Jansen, 2013). It is an advantageous method since it has measurable properties that are consistent and comparable and since it could, with relatively little resources, reach a large number of respondents (Eriksson and Wiedersheim-Paul, 2008).

When using a survey, the answers are made asynchronously, meaning that the questions are not asked at the same time as they are answered. Because of this, and since the questions are intended for a large number of respondents, the questions are standardized. This makes the method inflexible and requires consequently questions that are distinct and unmistakable. According to Eriksson and Wiedersheim-Paul (2008) benefits of using a survey as a method of data collection is that it is relatively cost-efficient, more available and has less social impact on the respondent. On the other hand, it has less or no interactivity thus less control and usually has a lower response rate.

In the preparation of the questionnaire there were several elements that needed to be planned for in order to generate a usable result. These are listed below as described by Eriksson and Wiedersheim-Paul (2008) in table 1 and followed by a description of the execution.

This survey aimed at investigating and reinforcing statements from the interviews. The target group was employees at LSPs in Sweden operating in Sweden. Hence, the possible amount of respondents was quite low to begin with, and furthermore, the response rate was low. It was sent out to 45 LSPs and eight responses were received, henceforth, 20 percent response rate. Thus, a survey was used in order to establish diversity among the respondents instead of showing frequency distribution (Jansen, 2010). For a survey, the sample should cover all existing relevant varieties of the phenomena (ibid.). Therefore, as this survey aimed

at reinforcing the already found data from interviews and literature, only a few respondents were necessary to establish an accurate result.

Table 2 - Steps taken in order to establish and perform the survey

N	Description	Execution
1	Clarification of the problem and the purpose of the survey.	The purpose of the survey was to add weight to the semi-structured interviews. The interviews where qualitative and time consuming and the survey was supposed to either reject or strengthen the results from them. The survey intended to give an indicator of how they experience e-commerce to grow and to be an indicator of how customers to LSPs purchases their services.
2	Determination of the specifications for the intended target group and population. The number of observations needs to be established, as well as if whether it should be statistically representative. If the results are to be statistically representative, there are certain criteria that need to be fulfilled.	The target group was chosen to be medium-sized and large companies providing services within all of the order fulfillment process. Since that restricts the number of actors based in Sweden that could be investigated, and since the response rate was shown to be low, also foreign actors were contacted. That is motivated since Sweden's e-commerce still is relatively undeveloped and that those answers are valid as tendencies. However, only one response was from outside of Europe.
3	Choice of the method for the data collection. What questions should be asked and how, should there be any additional questions, etc.	The survey is shown in Appendix A and consists of questions regarding the necessity of information sharing, the possible impact customers have on price, if their customers have different contract agreements for e-channels and traditional channels and how important innovative change is for them. In order to ensure that the respondents belong to the target group the survey is initiated with questions concerning the size of the company, the markets on which they act and what services they offer. The questions had multi-choice-character and out of 13 questions, 9 had space for additional comments and individual answers, the remaining questions had comprehensive choices such as intervals, yes/ no etc.
4	Creation of the questionnaire	See appendix A.
5	Process the information. All responses may not be useful; it is therefore important with source criticism.	All of the answers will be used, although not statistically representing the whole target group, but shows an indication of how the market looks today. Moreover, all answers points in the same direction and there are no direct contradictions. The results is also combined with theory and interviews in order to establish accuracy.

2.5 CREDIBILITY AND VIABILITY

In order to maintain a high level of accuracy and quality throughout the research-work the information's variability, reliability and relevance need to be evaluated.

2.5.1 Literature

A great deal of information about the market and the products was collected from sources concerning the market and products itself. Therefore, it was of importance to critically examine them and to always keep in mind the original purpose of the publication. To ensure the accuracy of these sources, each case was individually examined and if certain data was unsure, further investigation was conducted to prove its credibility. In addition to examining the time of the publication, the intended target audience and the application area as described by Wallén (1996), the sources have been treated in accordance with the criteria in table 3.

Table 3 - Source criticisms criteria based on Eriksson and Wiedersheim-Paul (2008)

Criteria	***Explanation***
Contemporary requirements	Even though the information was true at the time it was given, the information might not still be valid.
Tendency criticism	What is the interest of the author? Tendencies could be found in the choice of words or facts presented. Sources with different tendencies could be used to balance each other.
Dependency criticism	Two sources should not be accounted for as two if they are based upon the same source.
Authenticity	The authenticity can both concern the accuracy of information and the accuracy of the source of information.

2.5.2 Interviews and survey

When respondents are tied to a company, there can be a source of error. Therefore, questions were adopted after each participant and changed during the process. Furthermore, the interviews were personalized for each segment so that the authors could extract the right knowledge in each area, contributing to the difference of each interview. One possible source of error for all respondents were projecting their answer incorrectly in order to present their own company as more favorable. This has largely been avoided by asking questions specifically regarding each company and it has been kept in mind the bias during the analysis. In addition, the companies have been informed that the information will not be used to

compare the different LSPs, but to capture their view of the situation. Experts are usually not working for a certain company and could therefore be considered more objective.

For the different types of primary sources there are different possible sources of error. When performing a survey, the social impact is small but so is the possibility to correct misunderstandings. Face-to face interviews may be affected by social impact from the interviewing person and interviews conducted via telephone may cause a further error in the result as it can lead to difficulties of interpretation, for example, body language (Wallen, 1996). This was minimized by using the same method for each interview with the same person talking, and the same person taking notes. Through triangulation, all interviews as well as the result from the survey and the literature research was used in the hope of achieving as accurate result as possible.

3 THEORETICAL FRAMEWORK

In order to reach an understanding of the empirical study and to be able to, along with the practical framework, analyze the findings and draw conclusions, relevant theories and models have been studied. This chapter contains theories on how to evaluate LSPs and for the purchasing process as well as models for how to conduct a market analysis.

3.1 EVALUATION OF LOGISTICS SERVICE PROVIDERS

The demand for LSPs has increased and the cost has become more significant. As a consequence, the multi-criteria selection of partner becomes more important. However, the decision is complicated and requires judgment of what to consider and how to prioritize (Datta, 2015.) When selecting LSP-partners there are several attributes to take into consideration. Some of them function as trade-off to each other. Coltman, et al., (2006) have researched the most important buyer preferences for LSP with a Best-Worst experiment that is based on a maximum difference scaling. The Best-Worse scaling allows determining the utility of each attribute without having to take all different combination of alternatives into consideration. The ten most important attributes according to their study are listed in table 4, where their relative importance to each other is noted.

Table 4 - Performance attribute adapted from Coltman, et al., (2006).

Performance attribute	Ratio scale of relative importance
Reliable performance	3.8102
Supply chain flexibility	3.1452
Professionalism	2.8427
Delivery speed	1.9949
Supply chain capacity	1.7543
Proactive innovation	1.705
Customer service support	1.6391
Culture	1.2514
Relationship orientation	1.2477
Risk management	1.2377

Furness (2015) did also discuss the importance of choosing the right LSP's. The context was LSPs that operated large scale and that handled many transactions per day and multiple SKUs. He claimed that the main focus should not, as it often is, be on cost reduction, but on

building a competitive advantage by having a collaborative relationship. A relation, where both parties are commercially astute, why a traditional adversarial purchasing attitude is not appropriate. The contract should be clear and include ways to enable continuous improvements.

Although many state the importance of cost, it has not always been the same. Criteria, as many other factors, changes over time and with new trends. Alkhatib, et al. (2015) affirm that there has been a shift for how LSPs are selected and evaluated after the economic recession of 2008. Now, the risks involved with effects of globalization, sustainability requirements, economic recessions and other uncertainties influence the evaluation and selection in a greater extent. The criteria that are being examined in different studies have also changed, and the ones that were considered as less important before 2008 has become some of the most important attributes today. Examples of these are financial position, information systems and past performance. Quality was before 1990 considered as less important than cost and delivery, more important until 2008 and then back to less important again. Even though Alkhatib, et al. (2015) state that newer studies have become more balanced, they express that the changed environment creates a need for new methods for evaluation and that up until their research, all the studies focused only on cost, operational and/or financial metrics.

Huang and Yin (2013) agreed with Alkhatib, et al. (2015) that the selection and evaluation processes have changed, that there are few balanced and no comprehensive studies of performance indicators. Particularly, they lacked evaluation of LSP's importance for companies in a context of B2C online sales context. They found that for domestic e-commerce, attention should be given delivery delay due to surge coming from promotions and protection of sensitive information about customers' name, address and such. The survey made by Huang and Yin (2013) had respondents that were managers from e-commerce B2C-companies and LSPs and experts within the field. The ten most important, with little difference in rating, capabilities are shown in the table 5.

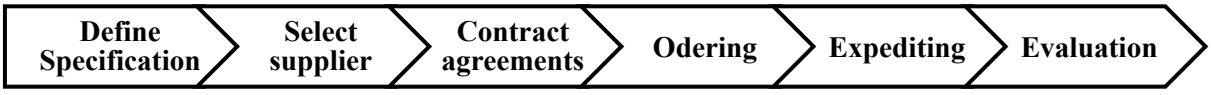
Table 5 - The ten most important capabilities for LSPs providing logistic service to B2C e-commerce companies based on Huang and Yin (2013).

Ranking	Capability
1	Completion time of the order
2	Transportation cost per unit product
3	Ratio of accurate delivery
4	Ratio of goods in good condition
5	Accuracy of information transmission
6	Accuracy ration of order processing
7	Service attitude
8	Ratio of consumer complaints
9	Ratio of complaints resolution
10	Logistics infrastructure

3.2 PURCHASING PROCESS

When making a purchase the actions that take place could be seen as a process, where some iterations are made and where, depending on the situation, the next step is based on an evaluation of the former. It is of essence to have a specification of what the need is and what the expectations of the purchase are (van Weele, 2010). The specification should include what are expected in terms of quality and service, target budget, environmental and legal requirements. Then the chosen suppliers are to be assessed before being selected. In the selection there might be one or several suppliers strategically chosen and the contract agreements with them are set up. After that the orders are made, expedited and then evaluated. By who and how these are made depend on whether it is a straight or modified rebuy or a new task, the process is shown in figure 5.

Figure 5 - The purchasing process adapted from van Weele 2010



As input, the process uses business requirements and needs that could be more or less specific and detailed. During the process, all of the subsequent steps are dependent on the output of the preceding one, meaning that the quality of the output can never improve. Often can reasons for arising problems be traced back and found in insufficient requirements, specifications, contracts or poor supplier decisions. It is therefore important to have clear specifications of what the output for every sub-process should be and to define each activity and the decisions that should enable the next step. Having an unstructured purchasing process often lead to operational problems (van Weele, 2010). As the process is often cross-functional in that way that there are different actors and disciplines involved and affected by the purchasing decision, there are risks of role conflicts. Consequently, effort should be made to ensure that the knowledge, skills and competencies across disciplines are optimally used to reach the best possible result (ibid.).

3.3 THE PURCHASE OF FREIGHT TRANSPORTATION

The process of buying freight transportation differs from the process of buying goods. When buying freight transportation, it is a service being bought. A service is more abstract and has more or less subjective properties, therefore specifications need to be clearer in order to reach an expected outcome. Rogerson, et al.'s (2013) study resulted in an explanation of how contextual factors affects the first three steps of the purchasing process of freight transportation, shown in figure 6.

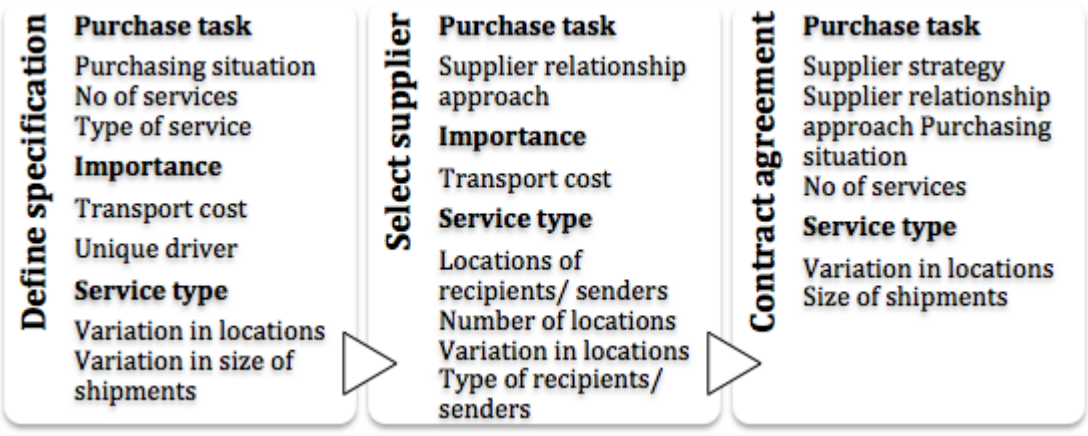


Figure 6 - Contextual factors effects on the purchasing process adapted from Rogerson, et al. (2013).

According to their results the first step of the process, *define specifications* was affected most by the type of service that was required. The type varies by to what degree the

destinations and the shipment sizes are varied. The former affected how well the service requirements were specified and the latter how much in advance this could be performed.

The second step, the supplier relationship approach was in most cases affected by the personal relation with suppliers, if the relationship was close or if the supplier was kept at an arm's length. The step was also affected of how the importance was perceived, if the transportation was considered as expensive in relation to the value of a product. If so, the selection of suppliers acquired more time to compare and evaluate different supplier-offers. When selecting supplier, the distance between sender and receiver was of importance when it came to number of locations. A difficulty in comparing offers with "few destinations with full truck loads" and "many global destinations" was found.

The third step was most influenced by the purchase task. Mainly by whether it was a rebuy or not, the number of services and what additional services that was expected. If the service specifications were not detailed due to many different destinations, the contract itself was less detailed (ibid.)

3.4 MARKET RESEARCH

If a company has knowledge about their products and their market, they have a greater opportunity to be competitive and develop the right products according to the demand. A common way to accomplish this awareness is by establishing a market research. A market research can be used in order to explore the potential of a new or improved product or market, or simply just to explore customer satisfaction for an already existing product or market. Market researches can then serve as a basis for a company whilst making important strategic decisions both short- and long term (Kotler, 2011).

Today, companies tend to be bigger and international and the ones making strategic decisions are usually not in direct contact with the customers. The lack of physical interaction between customer and salesperson makes it difficult to make strategic decisions, and organizations like these are therefore dependent on market researches (Hague, et al., 2004). Kotler (2011) agrees with this statement and continues by mentioning that the factors that had the greatest impact on a market research before has now changed towards a broader perspective where external factors being the most prominent. One commonly used method whilst conducting market research is the PEST-analysis (Team F.M.E., 2013). This method takes four factors into consideration, see figure 7, and fits well for a market research of a

broader perspective than for example, a SWOT research that focuses mainly on the business (ibid.).

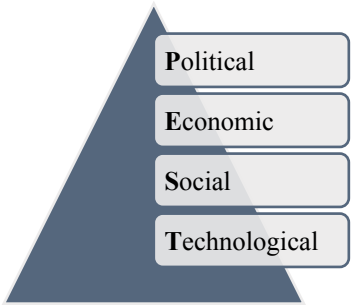


Figure 7 - The different parameters in a PEST-analysis

Advantages of using a PEST method is that is helps the company to reduce and identify potential threats and understand the market. Furthermore, it presents the result in a simple way for the reader, as well as it uses a simple framework for evaluation. It involves cross-functional skills and expertise, and helps and encourages strategic thinking for the company. Lastly, it helps a company whilst competing in a new market and enlightens the issues associated with entering or expanding this new market. The method also has disadvantages such as the possibility to oversimplify the information, and that it may be concluded on too much assumptions (Team F.M.E., 2013).

In order to conduct a PEST-analysis, Team F.M.E. (2013) recommends to first understand each contributor and then follow a structured process as is presented further here, by starting with presenting each contributor, see table 6, followed by the working process, see figure 8.

Table 6 - Each dimension of a PEST-Analysis

Influencing Factors	Description	Key Factors
Political	The political aspect of the PEST-analysis determines to which extent a government could influence and intervene the economy or the specific industry of which the analysis is performed. Factors that are included in the political aspect are those that may affect the business environment to a great extent.	• Tax policies • Fiscal policies • Trade tariffs • Change of government
Economical	These factors affects directly the business operations and decision making and are determinants of an economy's performance that may directly impact a company.	• Rise in inflation • Interest rate changes • Foreign exchange rates • Economic Growth

		patterns
Social	Social aspects in the PEST-analysis includes factors that scrutinize the social environment of the market. Those factors would affect the demand of the product the way it is purchased and by whom, over time.	• Cultural trends • Demographic changes • Population analytics • Buying trends • Seasonal behavior • Carrier attitudes
Technological	Technological factors can determine for instance entre barrier, minimum efficient production level, and influence whilst making outsourcing decisions. One can say that these factors pertain to innovation in technology affecting operations of the industry and the market.	• Automation level • Research and development • Technical awareness in the market • Impact of new media • Technology incentives

The purpose of the PEST-analysis is to identify issues that fits two statements; firstly, the issue should be outside the control of the company, in other words an external factor, secondly, it should have some level of impact for the company. All discussion should follow a systematic process shown in figure 8.

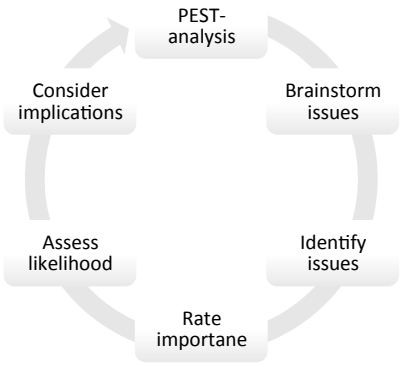


Figure 8 - The PEST-Analysis workflow

The process starts with a brainstorming where key issues that are outside of the company's control are listed. The established issues are then analyzed and potential implications for each issue is identified. Further on, the implications are considered. After, the likelihood that the issue occur is rated. Lastly, the implications of the issues that are considered important are discussed and analyzed.

By using this method, it becomes transparent what the issues are and what problems they may arise for the company on the specific market. The main purpose with a PEST-analysis is

therefore to identify and rate issues, not to solve them. The aim is to simplify strategic decisions by fully researching each issue.

4 PRACTICAL FRAMEWORK

Several important topics associated with the purpose of this thesis were screened in this theory chapter. The chapter starts with a broad perspective on multi-channels and the emergence of e-commerce. The market for e-commerce is then researched as well as trends, narrowing down to the market for online purchases of incontinence care products by examining demographic changes and the characteristics of the products. Moreover, last mile deliveries and the impact it has on city logistics and LSPs was investigated. Lastly, new solutions such as horizontal collaboration, cross-border trade and crowdsourcing are presented.

4.1 MULTI-CHANNEL

Since the advent of internet the competition has become global and tougher. The market is fast changing and leaders have to find new ways of staying in position apart from product and price differentiation. Internet changed the role of distribution and in a large extent, the way industries looked (Weinberg, et al., 2007). It also allowed the number of customer touch-points to increase and the majority of shoppers today uses multiple types of channels, from physical stores, to catalogues, telephone-orders and e-stores. Offering multiple channels increases customer satisfaction and sales per customer in comparison to those using only one channel (ibid.).

The reason for using different channels attracts more customers is due to the channels abilities to perform various service outputs. For example, the internet channel is very powerful when it comes to information searching and reduces the use of resources for the customers. Furthermore, internet provides a large range of products and enables easier customization. Retailers, on the other hand, increase the proximity with the customers. A customer can buy a product and leave the store instantly with that product. Moreover, face-to-face selling increase the direct contact with the customers and enables additional sell possibilities. Therefore, offering more than one channel is favorable in order to reach a larger customer base. Customers today expect the possibility to reach the company through different channels, and also wants to use more than one in order to find the right information and purchase (Agatz, et al., 2008). A multichannel strategy uses all benefits of each channel and thereby enhance the seller's overall value proposition (ibid.).

However, the question is whether having more channels automatically implies a larger customer base. Some literature state that, by having more customer touch points, companies are able to reach a larger range of customer segments and further increase sales based on the number of channels. Conversely, this statement is not always and necessarily true, argue Rosenbloom (2007), as additional channels may instead result in channel cannibalization. This means that customers already existing on another company owned channel just switch to the new one. Instead of gaining a new customer, the company has just made an additional investment to move customers from one channel to another. Furthermore, having more channels creates a much more difficult environment for the company to maintain a high and consistent service on all channels, as well as it increases the overall costs. This can result in poor quality and customer experience. Rosenbloom (2007) argues that it might not be all about the number of channels but rather to find the optimal mix and integrate them with the same consistent high quality that determine the customer satisfaction.

Rosenbloom (2007) claims that multi-channeling is creating a competitive advantage that is sustainable due to its strategic uniqueness. The strategies are difficult to copy, which enables a company to stand out amongst its competitors and enhance the brand beyond the product itself. Sometimes companies might want to move customer from a channel to another, so called channel migration. However, introducing new channels is complex and there is a number of problems a company can face, doing so. Increasing customer touch-points without coordination will probably lead to channel-cannibalization. The channels need to be integrated with the existing channels and the current supply chain will change, hence it need to be realized that there is additional work in order to have an optimal mix and achieve the wanted synergies. (ibid.). This requires a number of strategical issues to be overlooked and decisions to be made, often leading to internal conflicts that if not handled correctly, can cause damage to the company (Web and Lambe, 2007).

4.2 THE MARKET FOR WEBSHOP CUSTOMERS

According to Grant (2015), globalization is considered to be one of the world's largest trends, which in turn affects supply chain management. He also states, that with increased cross-border trade, there are several factors that have affected the growth of trade between countries including container shipping, removal of tariff barriers and outsourcing of manufacturing. These factors have contributed to the ease in shipping between countries and has increased the people’s willingness to purchase products through e-channels. Soukup

(2002) state in his report that “One day all business will be e-businesses”. As he predicted in the early 00s, e-commerce has seen a tremendous growth, and the trend is not estimated to ease.

4.2.1 E-commerce Growth Factors

E-commerce stands for trade based on an electronic server. In order to purchase through an e-channel, applications of information and communication technologies (ICT) are required (Visser and Nemeto, 2003). E-commerce can change and facilitate any commercial transaction between either business or people, and thereby also potentially change the complete supply chain-setup of the future. It is an emerging market that introduces an increased demand for last mile deliveries (ibid.). Innovations and inventions associated with ICT have created new possibilities in the global market and economy, as well as ushered e-commerce. However, state Ho, et al., (2011) ICT infrastructure and e-commerce is still somewhat limited to developed countries and the productivity level of the country needs to be high in order to implement e-commerce successfully. Falk and Hagsten (2015) continues to state that e-commerce is currently well functioning but still has a low market share in developed countries. The country that has the largest e-commerce B2C-market in Europe is the UK. There is an exponential trend seen both in the UK and US for e-commerce corresponding well to the one in Sweden, and it is estimated that we are a couple of years behind (Meeker, 2015). A combination of high growth and a small market share means a great potential for e-commerce in the future (ibid.).

The possibility of breaking geographical barriers is a key factor for implementation and potential growth of e-commerce. By using web channels for promotion and sales, markets that before were unreachable can be reached in just one click (Falk and Hagsten, 2015). With globalization comes an increased demand where customers request a larger product variance to a more extended price range. In order to understand e-commerce growth, a report performed by Ho, et al., (2011) studied which factors that are essential for e-commerce growth.

Ho, et al., (2011) concluded that there are five factors that have the largest contribution to e-commerce growth. The factors influencing the adoption of internet-based sales in a country, according to their study was; internet penetration, finance card penetration, venture capital availability, capitals invested in ICT and education level, see figure 9.

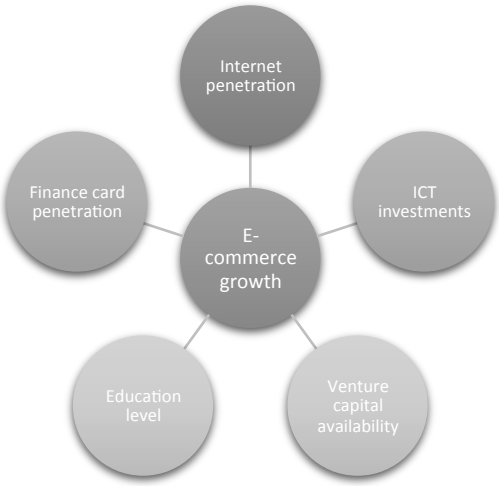


Figure 9 – E-commerce growth factors adapted from Ho, et al., (2011)

Ho, et al. (2011) say that the number of internet users in one country is directly linked to the readiness for e-commerce and also spot out the potential market. In other words, a potential growth of internet users would encourage companies to invest in a more developed e-commerce infrastructure. Meeker (2015) states in his report about the code conference of internet trends that internet penetration is steadily increasing, though stalled recently as the penetration level is already high. However, he continues to mention the strong increase of mobile and smartphone penetration.

Kiiski and Pohjola (2002) mean that the average level of education as well as the quality of human capital are factors that have major impact on a person's individual willingness to technology adoption. They also emphasize the importance of finance card penetration, in order to use payment services online. It is according to Ho, et al. (2011), clear that an increased amount of online shops as well as increased amount of secure payment solutions will increase the overall e-commerce.

Samadi, et al. (2015) propose that generation Y, also referred to as today's young adults, plays an important role in online purchasing as they are more comfortable with the online process and generally have a higher reliability to the services provided online. During a survey performed with customers purchasing online, they found that most of the customers online have a common view that e-commerce provides them with more extensive information about the products they are planning to purchase, and by being online, the information is available at all times (Samadi, et al., 2015).

Venture capital is defined as a professional equity that is co-shared with the entrepreneur in an early stage or during an expansion venture. By having an expectation of a higher than

normal return on investment, the risk can be off-set (SVCA, 2015). A higher level of venture capital availability is important in the country to ensure that startups in e-commerce or technology regarding e-commerce have the capital to explore new solutions. Ho, et al. (2011) continue to state that once there is more e-commerce based transactions, there will be more venture capital for start-ups within e-commerce, and furthermore a stronger and more user-friendly e-commerce market with a higher customer demand for online purchasing.

ICT investments as a percentage of GDP stands for the amount of investments that have been made in order to improve the ICT infrastructure in a country. One usually looks into factors such as; mobile-cellular subscriptions, active mobile-broadband subscriptions, fixed broadband subscriptions, households with a computer and internet access, and internet penetration in order to establish if a country has a well-functioning ICT market (ibid.).

4.2.2 Trends Affecting the Success of E-commerce

According to Thomas and Jose (2015) several trends within e-commerce have been noticed and companies with the will to stand out on the online market need to adapt to these in order to meet the customers' new demands. They present the following trends on the e-commerce market and are here grouped as technological and demand-driven trends.

4.2.2.1 Technological Trends

- Mobile friendly websites and applications
- Video-based marketing
- Increasing trust in e-commerce companies
- Invention of new technologies and devices

Mobiles and smartphones are today becoming the most prevalent platform for online purchasing. Companies need to focus on developing new applications and website that are mobile friendly and easy to use on a small screen. Development within this area increases the amount of channels a company can use in order to access their customers. Video-based marketing is steadily increasing and provides more information about the product or service to the customers. Channels such as YouTube are becoming more and more popular amongst advertisement (ibid.).

Security online is steadily increasing with mechanisms such as; safe payment services, better security and delivery-system. Ensuring customers that online purchase is safe will increase the market as one of the major reasons for customers to not purchase online today is

insecurity. Lastly, an increase of modern devices and innovation of new technology will be seen within e-commerce. Devices such as facial recognition and virtual fitting rooms will bloom the market and make it even more accessible as well as increase access for customers to put the internet within reach (ibid.).

4.2.2.2 Demand-Driven Trends

- Impact of social Commerce
- More personalization
- The Social Customer
- Faster service
- Always-on-shopping come to reality

One trend that has not been missed by many companies is the power of social and online media. By communicating via social and online media, companies can be closer to the consumers and respond to direct questions. Furthermore, it can be used for advertisement, reviews and advices. Today consumers are more demanding and in order to meet each consumer's demand the platforms used to access consumer also need to be personalized. Making each platform personalized can be performed by data handling and customized offers to each specific customer.

Another trend within e-commerce is that it does not only change the processes but also the customers. In an O*verview of e-commerce* Turban, et al. (2015) mention the new *Social Customer,* who is a customer being more prone to shop online than offline. This customer is also actively taking part of others opinions and the information available of the intended purchase, as well as sharing own reviews. The social customer has high expectations in terms of service, is growing exponentially in numbers and is very influential to people in her or his surrounding (Shih, 2011; Turban, et al., 2015). This type of customer is more powerful than regular customers and will use the internet to compare prices and functions in a larger extent. It is member of several social networks and therefor reaches a large crowd. For these reasons it is important for merchants to understand them and their demands as well as how they are different from other customers (Smith, et al., 2011).

Online sales provide a faster service at all times. Customer service can be available at all times, orders can be placed faster and furthermore, lead-times will be shorter. Service will also be extended to delivery at home or to a pick-up point in order to meet the future demand

of customers. Today, they want the possibility to access what they need at all time. Online sales channels provide a more flexible shopping without time limits.

4.3 E-COMMERCE IN SWEDEN

The Swedish digital retail market has, during the last 15 consecutive years, increased, see figure 10. The digital consumer market in Sweden is the biggest one out of the Nordic countries, and furthermore, the natural location for international ICT companies targeting the Nordic market (Giertz, 2015). Swedes like to shop online since they have the impression that it simplifies their life and decreases cost. E-commerce in Sweden has increased a large portion during the last year with a growth of 16 percent during 2014. The Swedes shopped online for some 5.1 billion SEK during 2015 which represented around 6.5 percent of total retail sales in Sweden 2014 (Postnord, 2015). Moreover, 84 percent shopped online at least once during 2013 and 35 percent each month (ibid.). Additionally, ten percent of the population in Sweden purchased during 2014 online with their mobile phone. The Swedish Trade and Invest Council (2013) expected that the digital market in Sweden would grow exponentially between 2013 and 2017, reaching a level of EUR 6.7 billion.

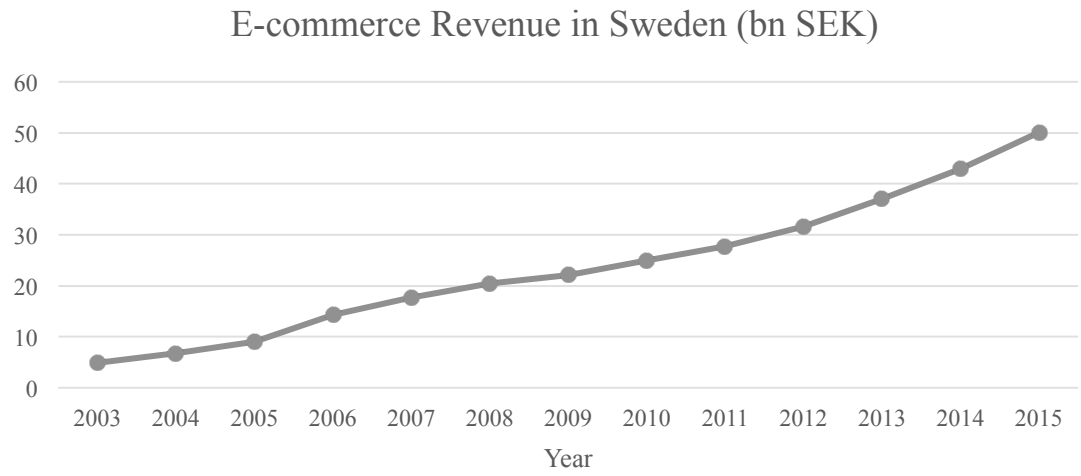


Figure 10 - E-commerce revenue in Sweden (PostNord, 2015)

4.3.1 ICT Investments as a Percentage of GDP

As Sweden is a country with a relatively small population, most start-ups focus on a more global market. This was noted long ago when companies such as H&M, Ericsson, Electrolux and Volvo started to grow outside of Sweden. The Swedish government picked up on these signs early and made huge investments on the technology infrastructure in 1990, in order to

establish high-speed internet. Many claim that it nurtured a generation born with access to internet and it is now paying off with companies such as Spotify, Skype and Klarna (OECD, 2015).

Sweden is considered to have a very advanced market and excels in ICT investments and ICT investment-intensity (Giertz, 2015). Sweden was one of the top ranking countries in 2008 when it coma to investments in ICT, touching almost 4 percent ICT investment as a percentage of GDP. This number has decreased as Sweden's ICT infrastructure has become more developed and are not in need of larger investments. However, Sweden is still a country that invests a lot in ICT. In June 2015, Sweden had around 0.5 percent ICT investment as a percentage of GDP, which can be compared to for example the US with 0.4 percent ICT investment as a percentage of GDP. According to The Swedish Trade and Invest Council (2013), Sweden has one of the best ICT infrastructure in the world and have one of the highest e-readiness in the world.

4.3.2 Venture Capital Availability

In Sweden, there are several government-owned venture capitals as well as venture capital owned by for example, universities. Moreover, there are both foreign and national private investors. Sweden is, nevertheless, not in the forefront when it comes to venture capital. The peak in 2008 with a total venture capital investment of 4.7 billion SEK, has since then until 2012 decreased until around 2 billion SEK and thereafter increased during 2013 and 2014 to 2.57 billion SEK in 2015 (OECD, 2016; Growth Analysis, 2015). The increase after 2012 was mostly due to private funds, and more specifically from foreign private funds. So, even though Sweden is considered as a mecca for technology start-ups in Europe, the second most prolific tech hub in the world after Silicon Valley, most part of the funding comes from abroad (OECD, 2015). However, there are indications pointing towards reduced investments to companies in the start-up phase in Sweden (Growth Analysis, 2015).

4.3.3 Internet Penetration

The internet penetration in Sweden is, in comparison with other countries, very high, reaching levels of 95 percent in 2013 and 93 percent in 2014 (The World Bank Group, 2015), see figure 11. The sources of error in the investigation made by the World Bank may contribute to the decrease in 2014. According to The Swedish Trade and invest Council (2013) the internet penetration is as high as 95 percent. Furthermore, they note that Swedes are highly skilled internet users who are well-informed and embrace internet shopping.

Statistiska Centralbyrån (2016) has found that, in the age segment 16-85 year-olds, 88 percent of the Swedish households owns a computer and around 89 percent have access to internet. Furthermore, in the same age segment, around 40 percent have a fixed broadband at home and 41 percent have an active mobile broadband at home. Furthermore, Statistiska Centralbyrån (2016) found that younger people are much more prone to use internet, with an internet penetration of almost 100 percent for those between 20-45 years old.

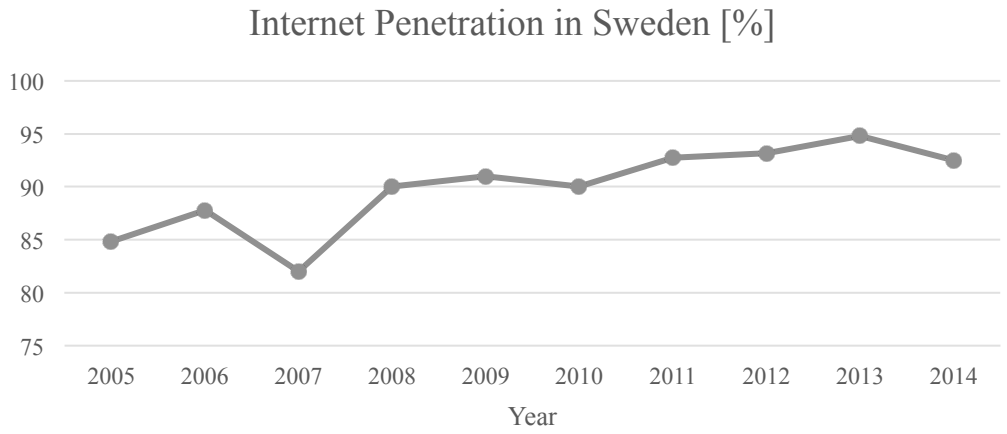


Figure 11 - Internet penetration in Sweden (The World Bank Group, 2015)

4.3.4 Finance Card Penetration

Sweden is one of the most progressed countries in terms of moving towards a cashless society. The finance card penetration in Sweden is very high, around 98 percent 2014 and has since 2010 only increased with 4 percent units. Furthermore, 80.3 percent of the Swedes use mobile identification in order to use mobile payment services. The use of mobile identification is, however, centered for those under 50 years' old which stands for 70 percent of the total subscriptions of mobile identification. Other payment services, such as Swish, has bloomed the mobile payment market in Sweden (Riksbanken, 2015).

4.3.5 Education Level

Sweden invested in 2013 seven percent of GDP in education at all levels which is, in comparison with the average of countries associated with the Organisation for economic and Cooperation and Development (OECD), a high number (OECD, 2013). However, compared with the annual salary of teachers in OECD countries, Sweden only paid, in 2013, USD 39.865, which is around USD 10.000 less than the average. The proportion of people with a high education in Sweden is still very high, but trends are pointing towards a decrease (ibid.). As can be seen in figure 12, adapted from Statistiska Centralbyrån (2016), around 21 percent

of the population has studied more than three years at a higher education and more than 60 percent has completed upper secondary education or higher.

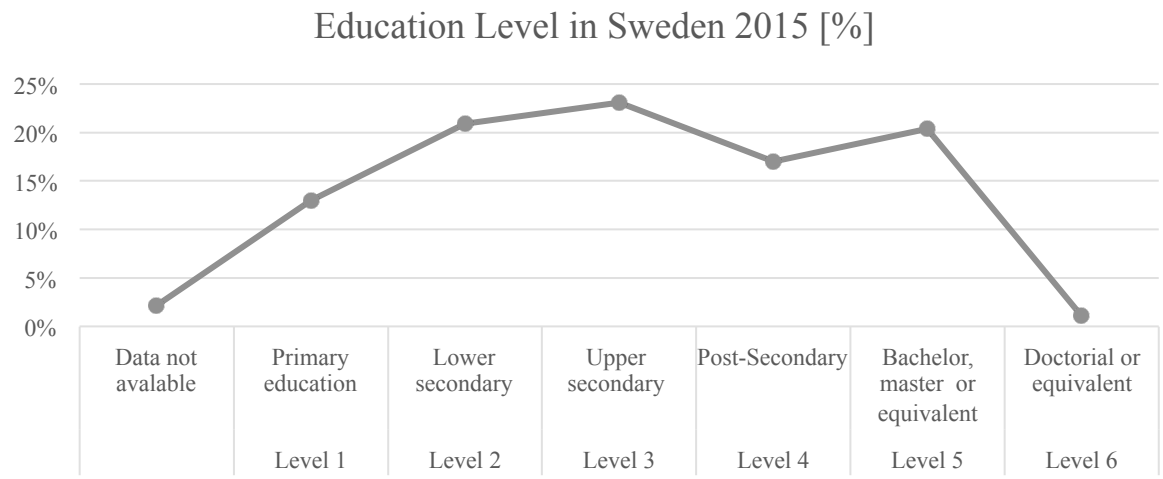


Figure 12 - Education level in Sweden (Statistiska Centralbyrån, 2016)

In a study performed by Statistiska Centralbyrån (2016), the education level in Sweden was compared to the education level in other countries. What was found was that Swedish children acquiring basics math after lower secondary education was 93 percent, which is below the average in the EU of 94 percent. For natural science, Sweden is just under the average level in EU. In a comparison between 1995 and 2007, Sweden's mathematics level has dropped with over ten percent.

4.4 DEMOGRAPHIC CHANGES

The world today is global, fast changing and aging and we are in the midst of an unprecedented transition in global demography. With the rapid aging comes a set of challenges that cannot be ignored, such as increased expenditure on short and long term health care. Harper (2014) states that we will most probably see the global population grow, from the now around 7 billion, to 10 billion before 2050. United Nations (2015) in their world population prospects article confirm the same numbers by saying that the global population will be some 9.7 billion in 2050. Further Harper (2014) discuss that the increase will however after 2050 flatten, she believes that this is the century in which human growth will cease. United Nations (2015) agree partially with Harper (2014) but still notices an increase the last decade of the century but with a lower growth rate than during the first half.

Harper (2014) and United Nations (2015) continues by stressing the fact that the 21st century will imply radical changes in the characteristics of the global population. Harper

mentions four parameters; size, density, distribution and composition. He states that we are becoming larger in volume, more urban, more mobile and lastly, we are becoming older. However, the changes in size differ in each region, regions that are well developed today such as Europe will instead see a small decline of population from the today 738 million to 707 million year 2050 (United Nations, 2015). Nevertheless, the three other parameters, especially the composition, play an important role in the future formation of our population. The trend shows that fertility rates decline and life expectancy rise, meaning that we see less newborns while we live longer. This implies that the average and the median age of the population will increase (ibid.).

In a global perspective, the number of persons over 60 will double at 2050 and furthermore triple at 2100 (United Nations, 2015). This will create a demographic change resulting in implications for health care and welfare services, affecting consumption and transportation patterns states Harper (2014). Furthermore, the population aged over 60 in Europe is already today 24 percent of the total population and is estimated to increase to 34 percent of the total population in 2050. Bloom, et al. (2015) imply that demographic changes will demand institutional changes.

Looking at Sweden, one can see a stable trend on both increasing population and an increase of the population over 65 years old, see figure 13. Moreover, life expectancy at birth in Sweden has risen from an average of 81 years in the period between 2005 and 2009 to 82 years in the period between 2011 and 2015. Women tend to live longer with a life expectancy at birth of 84 years when borne between 2011 and 2015. Whilst for men during the same period, the life expectancy at birth was 80 years (Statistiska Centralbyrån, 2016). Population in Sweden is expected to grow to 10 million people in 2020 according to The Swedish Trade and invest Council (2013). The oldest segment, 65+ year-olds is, according to Statistiska Centralbyrån (2016), supposed to increase 16 percent to 300.000 people before 2025.

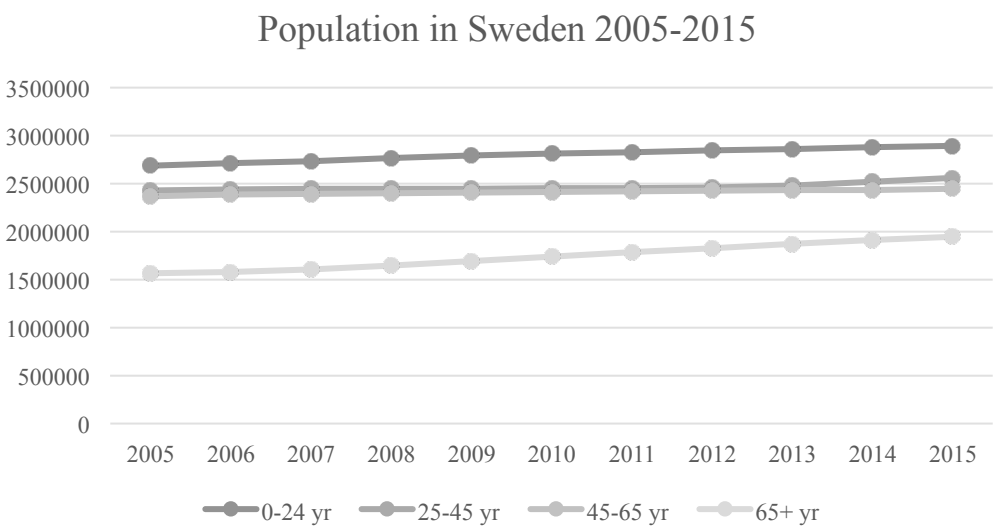


Figure 13 - Life expectancy at birth (Statistiska Centralbyrån (SCB), 2015)

4.5 URINARY INCONTINENCE PREVALENCE

Urinary incontinence is by the International Continence Society (ICS) defined as "any involuntary leakage of urine" (Abrams, et al., 2013). It is today considered as one of the most tabooed medical conditions and as our population is growing with it, it will touch millions of more. UI have many different degrees, one usually distinguish between Lower Urinary Tract Symptoms (LUTS), Overactive Bladder (OAB) and full Urinary Incontinence (UI) (Irwin, et al., (2006). LUTS is a common condition that touches many adults and the symptoms increase with age. When examining those with LUTS, many studies point towards a high number of up to 70 percent for women over 60 years old and 60 percent for men over 60 years old. Many of these require lighter protection (ibid.). Based on the survey conducted by Irwin, et al. (2006), it was found that nocturnal prevalence could be as high as 50 – 60 percent for the population over 18 years old. Women have in general has a higher prevalence than men, especially for women after giving birth, and furthermore, many of the studies performed on prevalence is solely looking on women (Thomas, et al., 1980)

In order to evaluate the prevalence of UI today, a research of existing articles has been conducted. Five articles, that have been conducting surveys on different target samples in different countries, have been used. The prevalence of UI found at each study is presented in table 7.

Table 7 - Urinary incontinence prevalence according to several studies.

Study	Country	Sample	Survey (Response Rate)	UI Prevalence [%]	
				Women	**Men**
Thomas, et al. (1980)	UK	22.430, 16-64 years	Population based, cross-sectional, postal survey (89 %)	8.5	1.6
Thomas, et al. (1980)	UK	22.430 , 65 + years	Population based, cross-sectional, postal survey (89 %)	11.6	6.9
Rortveit, et al. (2001)	Norway	27.900, 18-64 years	Population based, cross-sectional, postal survey (80 %)	15	N/A
Rortveit, et al. (2001)	Norway	27.900, 65+ years	Population based, cross-sectional, postal survey (80 %)	30	N/A
Irwin, et al. (2006)	Sweden, Italy, Germany, Canada, UK	58.139, 18-64 years	Population based, cross-sectional, telephone survey (33 %)	11.2	3.2
Irwin, et al. (2006)	Sweden, Italy, Germany, Canada, UK	58.139, 65+ years	Population based, cross-sectional, telephone survey (33 %)	19.3	10.4
O'Brien, et al. (1991)	UK	10.300, 65 + years	Random sample, assessment based survey at hospital (70.8 %)	16	13
Foley, et al. 2012	UK	5474, >65 years	Random sample, cross sectional, postal survey in 1998-1999 (58%)	29	23,3

The prevalence of UI vary greatly from each survey, which can be considered to be mainly due to the inconvenient nature of the condition and differences of the target groups of the surveys, this statement is enhanced by other authors (Milsom, et al., 2014). UI prevalence vary, as can be seen in figure, 14, where minimum and maximum for two age segments per gender is presented. The economic burden of UI is substantial, creating a high pressure on municipalities, counties and sick funds (Abrams, et al., 2013).

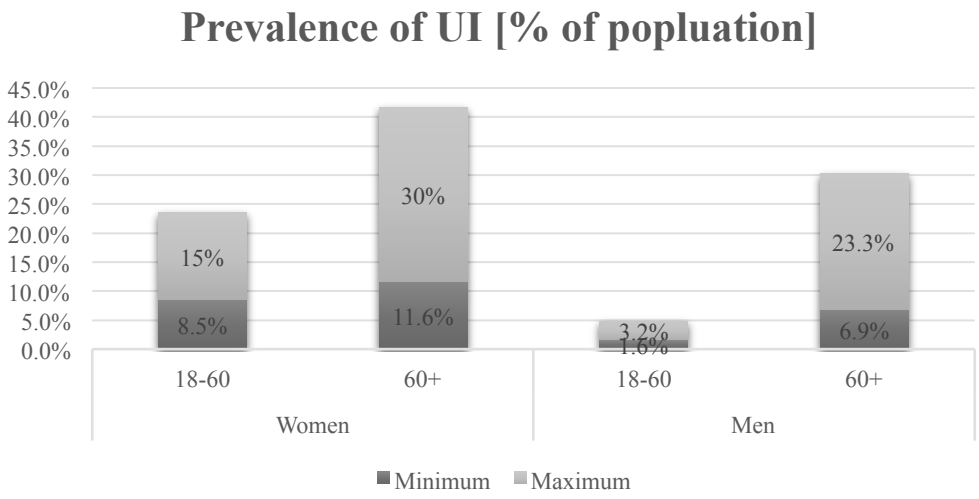


Figure 14 – Prevalence of UI according to the articles studied.

4.6 CHARACTERISTICS OF INCONTINENCE CARE PRODUCTS

The selection of transportation mode is usually largely influenced by the nature and characteristics of the products in questions. By looking at the physical characteristics of the intended products, a decision of modal selection is taken. Another important aspect to consider is whether the products have special traits such as temperature preferences, perishability etc. In the case of incontinence care products, no traits like these are present. Incontinence products are considered bulky, taking up a high volume and a low weight with a low price per unit volume and unit weight. For products with this characteristic, the cost of transportation represents the most important element in the overall supply chain cost and the distribution tend to be less efficient (van Nunen, et al., 2011).

The low value of the goods put higher pressure to optimize each cost of the supply chain. Costs like transportation tend to be absorbed in the overall cost if the product is expensive, in this case the cost is, compared with the products, very high (ibid.). Furthermore, the degree to which the products can be replaced by the ones of a competitor influences the company's need of responsiveness and flexibility. Incontinence care products have a high degree of substitutability, due to the fact that customers have an immediate need of the product and since the brands on the market are not particularly differentiated. In a distribution system, this problem can be solved with either a high stock on hand, close to consumer, or a well performing transportation system (ibid.).

4.7 LOGISTICS SERVICE PROVIDERS

Increased global competition has forced companies to invest in their supply chain activities in order to meet increasingly demanding customers. Due to that LSPs have become an integrated and important part of a company's supply chain (Datta, et al., 2013). In addition to transportation and distribution, they offer a wide range of services (Datta, 2015), see table 8.The objective when companies choose supply chain partners is normally to increase their value offer. Traditionally this is performed in order to improve reliability and to reduce cost and delivery time (Anderson, et al., 2011). Increasingly, LSPs offering home delivery services are being used to make transactions more efficient due to their capability of frequent deliveries of goods in a tight delivery time-window as the customer requires (Lin, et al., 2015). As the demand increases, the multi-criteria selection of partner becomes more important. However, the decision is complicated and requires judgment of what to consider and how to prioritize (Datta, 2015.)

Table 8 - Activities associated today with LSPs adapted from Aguezzol (2014).

Logistics process	Activities
Transportation	Can offer some or all types of transportation modes, as well as customs brokering, consolidation, goods management for fragile hazardous or perishable goods and freight bill payment/audit.
Warehousing	Receiving, storing, sorting and picking of goods.
Inventory management	Forecasting and design of inventory area as well as planning for arrivals and departures.
Packaging	Packing and labeling.
Reverse logistics	Recycle or reuse and return shipment management.

4.8 HOME DELIVERIES

With home deliveries there is a change of context in the order handling- from B2B to B2C. The difference is that the product needs to be handled, stored and transported to and for an end user. This requires a cost-effective order fulfillment process, which is the primary reason for which companies fail with their online sales channels (Fernie and McKinnon, 2004). As opposed to traditional retailing, online retailing involves sending small, varying quantities of products to a, great and changing, variety of locations. This demands a different type of order fulfilment. The deliveries are expected to be fast and accurate which implies unconsolidated, expensive transportation and high, responsive inventories (Turban, et al., 2015).

Order fulfillment includes all actions taken place from received order until delivery, hence order fulfillment includes both back-office actions, such as inventory management, packing, shipping and delivering, and front office activities where all actions towards the customer are involved. The objective with this is to, at the lowest cost, get the right product to the right place, in time (Turban, et al., 2015). Logistics is a major part of order fulfillment and the characteristics differs between traditional retailing and online retailing as shown in table 9.

Table 9 - Difference between logistics in traditional and online retailing adapted from Turban, et al. (2015).

Traditional retailing	**Characteristics**	**Online**
Bulk, large volumes	**Type, quantity**	Small parcels
Few	**Destinations**	Large numbers, dispersed
Push	**Demand type**	Pull
Stable, consistent	**Nature of demand**	Seasonal, fragmented
Large, >1000$	**Value of shipment**	Small, <50$
Usually repeat-customer, not many	**Customers**	Usually unknown in B2C, many
Usually unidirectional, from manufacturer	**Inventory order flow**	Usually bidirectional
One link	**Accountability**	Trough entire supply chain
Frequently by the company, sometimes outsourced	**Transporter**	Normally outsourced
Common	**Warehouse**	Only very large shippers (e.g. Amazon) operate their own

In *The Development of E-tail Logistics* (Fernie and McKinnon, 2004), the characteristics of the distribution of online sales items for home delivery are concluded in the following way:

- The goods are delivered directly to the home from either production or a distribution center.
- Each order comprises a small number of items, often just one.
- The order picking is centralized at a national or regional level
- A large share of the orders go through a parcel carrier or through mail order companies.
- They generally have a lower loading factor than the full pallet vehicles that often are used for traditional retailing.
- A more fluctuating demand created by for example campaigns for newly released products.

These characteristics complicates some parts of the order fulfillment, as shown in figure 15. Having smaller orders means that they are individually packed and handled which increases the volume of packaging material, the amount of work done per product and takes up more space in the warehouse and in the vehicles. Another implication of home deliveries is that a larger share of the product is returned and therefore also requires additional handling. That includes retrieval of the good, controlling it, repackaging and lastly redistribution or disposal (Fernie and McKinnon, 2004).

Inventory Management	•More fluctuating demand requires higher inventory
Packing	•Smaller orders requires more packing activities
Shipping and Delivery	•Lower value in vehicles going to dispersed locations with lower truck load
Return	•Larger share of returned items causing additional handling

Figure 15 - The order fulfillment process for online sales adapted from Turban, et al. (2015) and Fernie and McKinnon (2004).

The higher number of returns can be a result of the consumers' difficulty in physically examining the product before the purchase. It can however be less expensive to handle returns as a multichannel actor than as a pure e-tailer under the condition that the multi-channel actor uses its conventional stores for returns. If not, the company needs to have an own channel for returns. There are three possible scenarios; 1. Consumer drop of at physical store, 2. Consumer drop-off at collection point and 3. A carrier picks up the product at the consumer's home. If the consumer can drop it off at a store, the customer can also change it for another product which leads to higher customer satisfaction and less costs (de Leeuw, et al., 2016).

4.9 THE PHYSICAL DELIVERY

For home deliveries there are two types of deliveries; attended deliveries and unattended deliveries. In most of Europe the majority of home deliveries are attended. For those, customers need to be available to receive the order within a specific timeframe, whereas unattended deliveries do not require anybody to be at home for the reception. However, the unattended delivery leaves room for damage or theft (Hübillioner et al., 2016). Yet, there are also secure ways of delivering unattended. Fernie and Mckinnon described four alternatives:

- Letting the driver have access to the house
- Placing the order in a reception area
- Delivering it to a collection point
- Delivering to a local agency that would deliver later

Nevertheless, there are a large share of failed attended deliveries since many households normally do not have anybody staying at home during a normal workday. This calls for a second try or for leaving it to a collection point, making the first attempted delivery useless (Hübillioner, et al., 2016). On the customer side, most would prefer that the goods were delivered at an exact time in order to avoid staying home waiting. On the other hand that would impose a higher delivery-price since it means a minimum of flexibility for the transporters who would always have to have the highest of capacity. It requires a more complex vehicle routing and causes a low vehicle utilization. Therefore, for the delivering firm, the greater the time window within which they are to deliver, the more convenient and the lower the cost (Fernie and McKinnon, 2004).

4.10 LOGISTICS IN URBAN AREAS

Transportation of goods in urban areas are sometimes considered to be more complicated and more difficult to plan for than long-distance transportation. Urban transportation has multiple stakeholders and its construction and functions are dependent on all of them. Shippers and their customers, wants reliable and fast services with low prices. The freight carriers' aims to meet the shippers' requests while keeping low running costs in order to make a profit, while having a good match of the shippers' time-window of delivery and their own capacity. The municipality administrators' objective is to maximize economic growth as well as to minimize traffic congestion and energy consumption. In addition, the residents of an area could also be seen as stakeholders with concerns of having a clean, noise-free, safe and accessible neighborhood (Taniguchi, et al., 2014).

Taniguchi, et al. (2014) describes that city logistics aims to achieve efficient and sustainable urban freight systems. There are three areas of development; technological innovations, engaging private companies and public private coordination. Firstly, the need of real time data for efficient routing planning as well as responsive and dynamical information systems is a powerful tool when mapping logistics. Secondly, corporate social responsibility, policies, regulations and a good reputation amongst residents and customers are important factors affecting companies' engagement in greener logistic and thirdly the cooperation of the

public and private companies are important. One example of problems that could arise due to lack of corporations is heavier vehicles being banned with the result of a higher number of smaller, lighter vehicles that in fact could increase traffic congestion. Parcel deliverers are often successful at consolidating and distributing home deliveries in milk-runs. Consequently, home deliveries decrease passenger-collection traffic (ibid.).

The trend in parcel deliveries is to achieve high service and low cost at the same time which stresses the use of a state of the art logistics system. These systems are dependent on logistic centers, such as distribution and fulfillment centers, that has different characteristics for e-commerce (ibid.). Since e-commerce has shorter customer lead-time the distribution centers are often larger, keeping many different items to avoid stock-outs. They are often run with warehouse management systems. The location of logistics centers is of essence. Companies such as Amazon are having large logistics centers close to larger cities (ibid.).

4.11 HORIZONTAL COLLABORATION OF LOGISTICS

The demographic change and the economical rise in developing countries will shift the economic power and increase the total demand for transportation. In addition, the urbanization in developed countries will continue to increase. All of which affects, and will necessitate an evolvement of, the current logistic systems (van Breedam, 2016). As of now the conditions are already strained and with the introduction of e-commerce, many supply chains are pushed to their limits to satisfy the increasingly demanding requirements of next day or next hour deliveries. Businesses are getting more and more customers-oriented which creates excess. The creation of excess is helping to tilt into reaching the tipping point of when environmental concerns become as important as cost and efficiency. In order to make use of the excess, companies need to start collaborating across companies. The new supply chain is said to require coordination to handle resources and to gain advantages. Collaboration platforms are partnerships where the logistical activities are clustered and are considered to be one of the most optimal designs of supply chains (ibid.).

One way of increasing the efficiency of logistics services, that involves collaboration, is by collaborative distribution Yang, et al. (2015) found that LSPs should collaborate for distribution including sharing vehicles and warehousing activities, in order to optimize the distribution, reduce costs and delivery-times.

According to EU's CO3 project (2016) there is one momentum of economic depression that can awake creative destruction: something old dies and leaves room for something new

and innovative. That can affect the European logistics industry to start working in new ways. The CO3 project was initiated with the objective to facilitate for industrial players to collaborate horizontally in order to increase the capacity utilization of European freight systems. One of the underlying reasons for this was that about 25 percent of all freight vehicles are transporting air and that the remaining 75 percent is only using 57 percent of their weight capacity. To increase the knowledge amongst logistics actors the C03-group conducted test-projects across Europe and shared the information as well as platforms for business practitioners (CO3 Project EU, 2016).

Another European organization focusing on collaboration is ELUPEG (European Logistics Users Providers and Enabler Group). ELUPEG was also a partner for knowledge and networking to the CO3- project. The type of collaboration is both vertical and horizontal and the aim is being a neutral platform to be used in order to improve performance of European logistics. Over 1000 companies (such as DHL, Freightex and CEVA) are registered and they can all take part of what is done with the prerequisite of involvement at a sufficient senior level (ELUPEG, 2015).

4.12 CROSS-BORDER TRADE

The location of buyer and seller is no longer as important to the customer as the information is only one click away. Internet availability and online sales is often associated with “the death of distance” for information and supply (Gomez-Herrera, et al., 2014). With the introduction of cross-border sales physical distances are no longer a limitation, however, new sources of trade costs related to online sales may emerge. While distance can be considered as irrelevant in regards of information and purely digital products and services, goods and products still needs to be physically transported and sometimes cross-border in order to reach the customer. With the introduction of online sales, those distances increase as customers have a wider range of options to choose among. Gomez-Herrera, et al., 2014 however, state that these are still very few investigations made on cross-border home deliveries.

On paper, cross-border delivery seems uncomplicated to implement, but there are many factors that make the process much more complex than it might appear. Gomez-Herrera, et al., 2014 have made an extensive research in the area and found several influencing factors. They state that cross-border trade stimulates price competition and increases diversity of supply. The positive impact of e-commerce is that it reduced the transport cost of information,

which in turn open up a much wider market for companies. However, the study shows that e-commerce is still subject to many trade barriers when it comes to cross-border trade. Not only is the physical delivery cost much higher, but there are also regulatory barriers and additional new costs that needs to be added into the equation. Yet, EU policy makers have established targets to increase cross-border trade (ibid.).

4.13 CROWDSOURCING

Crowdsourcing in its original form was introduced in 2006 and has since then been applied in many different fields. Howe (2006), in his original article in Wired magazine, explain the underlying reasons for inventing crowdsourcing in the following statement: "Remember outsourcing? Sending jobs to India and China is so 2003. The new pool of cheap labor: everyday people using their spare cycles to create content, solve problems, even do corporate R&D".

Similar to open source software, the underlying idea with crowdsourcing is to use potential ideas and innovations from a potentially large and unknown population, called the crowd, in an idea generation contest (Howe, 2006). However, there are still similarities in crowdsourcing and outsourcing. Both of them rely on external sources and the company's boundaries are no longer limited to only employees (Li, 2016). Reasons for using crowdsourcing are as for outsourcing, to focus on core competences in the company and use external forces to solve other issues (ibid.).

An example of a successful implementation of crowdsourcing is Uber. Uber saw an opportunity to use information technology to decrease social idle resources of a number of cars. As a third party, Uber does not provide any taxi services on their own nor do they own any cars. This makes the operational costs for Uber very low at the same time as they earn money by connecting available cars with passengers. The drivers are responsible themselves for their cars as well as the service. Both passenger and driver can rate each other which makes the system safe and easy to use (Li, 2016).

Crowdsourcing has been successful within logistics as it may solve the issue of idle space in deliveries and to potentially use sources that already operates in the same areas. Many initiatives has been taken in crowdsourcing deliveries where a company use regular citizens who can via an application on their smartphone receive information about packages in pick-up stations that they can deliver to the consumers for a small payment. The idea is to use people already in the flow that has idle space that can be used for a better purpose. Sadilek, et

al. (2013) have made an extensive research on how crowdsourcing in delivering of packages affects logistics. They found that crowdsourcing of package deliveries can have remarkable speed and coverage as well as delivery accuracy. They also looked into possibilities of delivering to a person in motion and found that it was possible.

Li (2016) state however, that there are some risks when crowdsourcing logistics services and states that it has a subversive influence to the modern business model. He mentions that it has had a very short development time, which in turn results in many security risks. For example, it requires handling large data capacity, which we today do not have (ibid.).

5 COMPANY DESCRIPTION SCA

Svenska Cellulosa Aktiebolaget (SCA) is a Swedish company within the field of consumer goods, pulp and paper manufacturing. The head office is in Stockholm and the company has approximately 44 000 employees globally with an overall turnover in 2015 of 115 billion SEK. The company's three largest markets are Germany, United Kingdom and the United States. Sweden stood for a turnover of 6 billion SEK 2015 and was the seventh largest market for SCA 2015. SCA is Europe's largest private owner of forest land with 2,6 million hectares, corresponding to the size of Macedonia. SCA has three core businesses; Personal Care, Tissue and Forest Products (SCA, 2015).

5.1 INCONTINENCE CARE BRAND TENA

Within the business unit Personal Care, with an annual turnover of 34 billion SEK worldwide in 2015, lies Incontinence Care products and furthermore SCA's global leader for incontinence care TENA. TENA is owned and operated by the SCA group, specialized in products for adults with urinary incontinence. TENA stood for an annual sale that exceeded 10 billion SEK 2014 worldwide. SCA's overall global market share in incontinence care products is more than double the size of the second largest player. SCA offers a broad range of incontinence care products under the TENA brand.

SCA claims to strive to offer both products and services that improve life quality for those affected by urinary incontinence. The assortment of TENA includes, apart from incontinence care protection products, skincare products, wash gloves and shower caps. One cornerstone in was the launch of TENA Identifi, which is a diaper powered by sensors that automatically collects information about a patient's urinary leakage. This makes it easier for the nurse to establish a personalized program for each patient (SCA, 2015).

5.2 DISTRIBUTION CHANNELS FOR TENA

TENA is sold through four different channels in Sweden according to Ekman[1]; over 90 percent in the reimbursement channel (Include many different type of channels such as hospitals, homecare, nursing home, etc.), retailers, pharmacies and the webshop (TENA-butiken) stands for the remaining percentage. The products at retailer and pharmacies are not

[1] Fredrik Ekman, Key Account Manager SCA Hygiene Products AB, Interviewed 2016-04-18

packed in the same way as for the reimbursed segment and the webshop. This is mainly due to the fact that the reimbursed segment as well as the webshop is packed in larger discreet packages in order to be more convenient for the consumer.

The reimbursed segment is by far the most prominent one and stands for the largest portion of turnover for TENA in Sweden. The reimbursed segment operates in many different distribution channels, where the products for example are delivered to different institutional homes but also to customers living at home. The part delivered to customers at home in the reimbursed system is, at SCA, called Home Delivery.

Stridh[2] argues that the current logistics set-up for all segments, except the webshop, are well optimized. In other words, the cost for logistic services in the reimbursement segment as well as retailer and pharmacies is lower and stands for a smaller portion of the total cost of the product than for the webshop segment.

5.3 WEBSHOP FOR TENA

TENA's webshop, launched in 2012, is one of the distribution channels in Sweden. The channel exists worldwide but has a national set-up for each country. The different abilities and options for the webshop is shown in figure 16 and described in the text after the figure.

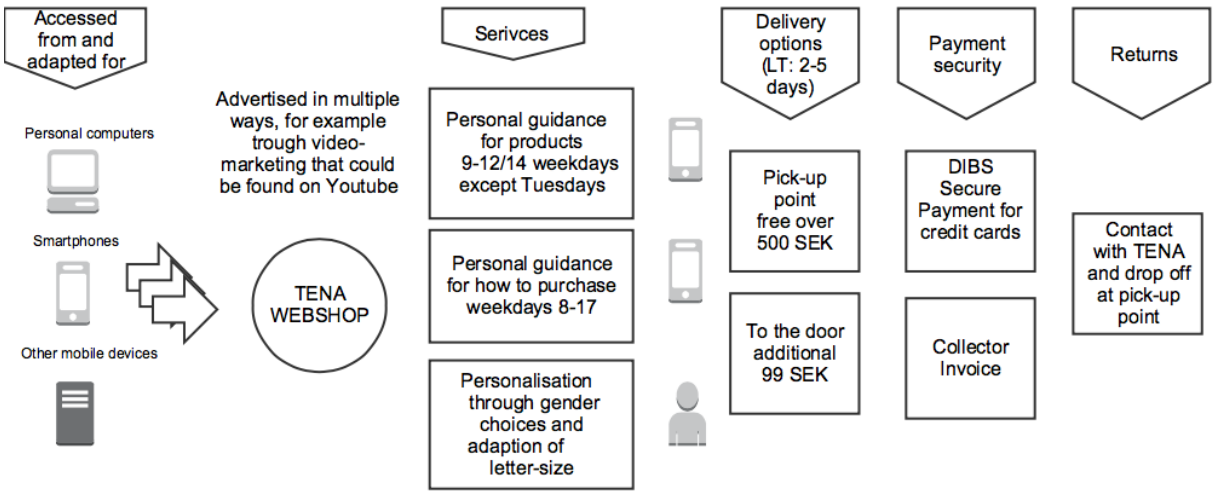


Figure 16 - The webshop's abilities and options

The webshop channel offers two options for delivery:

1. Delivery to a pick-up point (standard delivery)

[2] Viktoria Stridh, Regional Business Logistics Manager SCA Hygiene Products AB, Interviewed 2016-04-20

2. Delivery to the door of the consumer's home

Around 15-20 percent of the customers use the option delivery to the door and consequently around 80-85 percent of the customers choose to retrieve the products at a pick-up point according to Ekman[3]. Both alternatives have a lead-time of two to five days. The option with pick-up point offers free delivery for all order over 500 SEK, otherwise an additional cost of 49 SEK is added to the price. The second alternative with home delivery cost 99 SEK and there are no free delivery offers. With home delivery, the customer gets notified by the transporter that delivery will be made. They can then discuss in closer detail date and time for delivery. The package is, if the customer is not home or not responding, left outside the door. In other words, the delivery may be unattended.

Sweden was one of the last countries in Europe to launch the webshop for TENA's products. The reason for it to be launched was mostly about making the products available for all customers in Sweden no matter location, says Ekman[4]. Further he explains that another reason is also to attract first time consumers and make them loyal to the brand. The idea is to, by sharing information about the option to receive the products on prescription, migrate the webshop channel to the reimbursement segment. The webshop has a low percentage share of overall sales in Sweden, but it is growing.

SCA has four factories in Europe producing incontinence care products for the Swedish market according to Christensen[5]. The products are delivered to the central warehouse in Falkenberg, Sweden. Today, the procedure is solved by using a LSP called Älvsered Logistik who is responsible for the whole process from Falkenberg to end-consumer. They collect the goods at Falkenberg and store them at their warehouse in Älvsered and further, handles all transports from the warehouse to either end-consumer or a pick-up point. This set-up is about to change in May this year, 2016, as SCA has according to Stridh[6] outgrown Älvsered Logistik's capacity and will from now on handle their own goods in Falkenberg in a specified location adapted solely for the webshop.

Customers of the webshop is located in almost all parts of Sweden, except for in the north. For the four last month, the ten counties with the highest percentage share of visitors on

[3] Fredrik Ekman, Key Account Manager SCA Hygiene Products AB, Interviewed 2016-04-18
[4] Ibid.
[5] Anker Christensen, Logistics Manager SCA Hygiene Products AB, Interviewed 2016-04-21
[6] Viktoria Stridh, Regional Business Logistics Manager SCA Hygiene Products AB, Interviewed 2016-04-20

the website is shown in figure 17. They are presented firstly with the amount of sessions in the county and in parentheses the percentage share of total sessions in Sweden during the four-month period. As can be seen, the numbers of sessions are still very low and centered in counties with larger cities. Stridh[7] states that the Swedish webshop has around 300-500 orders per month currently, but believes that is about to increase markedly, a statement Ekman[8] agrees with.

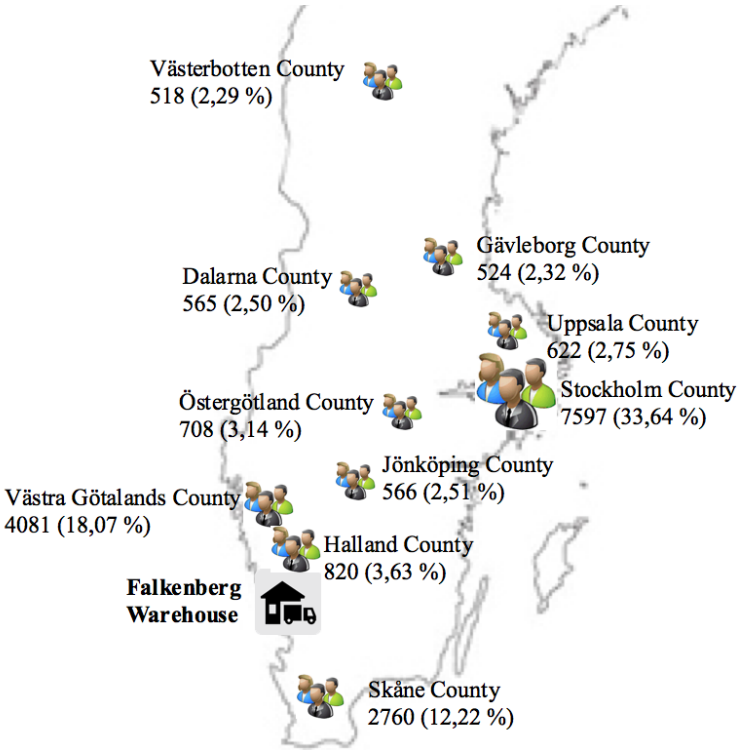


Figure 17 - Sessions during the period of January to April 2016 for the TENA webshop

Forecasting for the webshop is performed in SAP Demand Planning System. The products have a lead-time of two to five days after being purchased on the webshop and if there is a stock out, the products can easily be ordered from the central warehouse, according to Ekman[9]. In other words, keeping the right safety stock is currently not very important for SCA as it does not affect the consumers. Information sharing is also done from Market and Sales department to SCA logistics and Älvsered if they are, for example, planning to launch a new campaign. Then a refill of the involved products can be made in advance. According to

[7] Ibid.

[8] Fredrik Ekman, Key Account Manager SCA Hygiene Products AB, Interviewed 2016-04-18

[9] Fredrik Ekman, Key Account Manager SCA Hygiene Products AB, Interviewed 2016-04-18

Ekman[10], he believes that no such information sharing exists between Älvsered and their transportation partners as the volumes are still very small. Since Älvsered is the only LSP, SCA shares their information only with them. With the new set-up, SCA will themselves take care of the warehousing activities and only purchase the transportation from Falkenberg to the end-consumer.

Return rates for the webshop are very low argue Ekman[11], under one and a half percent. The return process can be seen as quite complicated. SCA provides a return form with the shipment. In order to return, the customer needs to contact the TENA webshop in advance, either by mail or phone. The product must be intact and sealed in order for it to be returnable. Further, the customer need to fill out the return form, either the one sent with the shipment or if lost, print one new. The return form incorporates also a return label that should be placed on the package. The package must then be delivered to the closest postal office; the return is paid by SCA. The customer cannot return the product in another channel such as pharmacies or retailers selling TENA.

5.4 THE PURCHASING PROCESS OF LOGISTICS SERVICES

The purchasing process for logistic services of TENA is usually time consuming and complex, especially for the reimbursement segment. In the Nordic region, the government is very generous with providing incontinence care products on prescription according to Ekman[12]. This makes the segment for private customers considerably lower than in many other regions. When purchasing logistics services for other segments then the webshop, SCA goes out on a tender where they present their specifications to different LSPs. The LSPs deliver a solution and a price to SCA who then chooses the most suitable one. This process is done for each market and according to Stridh[13], the requirements put on the suppliers differ for each country, but they are commonly very fixed and the choice is made amongst those that fulfill the requirements, based on price.

[10] Ibid.
[11] Ibid.
[12] Fredrik Ekman, Key Account Manager SCA Hygiene Products AB, Interviewed 2016-04-18
[13] Viktoria Stridh, Regional Business Logistics Manager SCA Hygiene Products AB, Interviewed 2016-04-20

5.5 THE PURCHASING PROCESS OF LOGISTICS SERVICES FOR THE WEBSHOP

Stridh[14] says that the procedure for purchasing logistics services for the webshop is not very established since the volumes are still low. She means that if the volumes were bigger, SCA would have no other choice than to establish a more sustainable solution with a logistics LSP. Currently, this will be solved by using the already existing warehouse in Falkenberg, who will establish a separate storage adapted solely for the webshop. The inventory in Älvsered will be moved in May this year, 2016, and Falkenberg warehouse will then be responsible for warehousing activities of the goods. The transportation from Falkenberg to end-consumer will most likely be handled by one provider who already has established contracts with SCA for other channels. The same contract can be used for the webshop since the volumes are small. Stridh[15] estimates that if the orders from the webshop exceeds 3 000 per month, then the purchasing process should be reevaluated. She also states that the current solution, established in connection with the launch of the webshop in 2012, has only been evaluated for the first time now.

Stridh[16] says that for the webshop, the most important dimensions whilst evaluating logistics providers is the location of the warehouse. She mentions that they want to be close to the consumers. Furthermore, she states that since the webshop handles such small volumes, it is important for them to use a smaller supplier so that SCA becomes a more important customer and further has more bargaining power. She continues by mentioning that they also value service and low cost.

[14] Ibid.
[15] Ibid.
[16] Ibid.

6 FINDINGS FROM INTERVIEWS AND SURVEY

This chapter presents the results from the conducted survey and interviews. The result, in cooperation with the theoretical and practical framework, works as a foundation for the analysis and conclusion of the thesis. The collection of material consists of twelve in-depth interviews and a survey answered by eight different logistical partners. Initially, there is a subchapter covering the most important information from the interviews. Lastly, the result of the survey is presented with figures and additional comments.

6.1 INTERVIEWS

In this section, information that has been found during the interviews with participants from LSPs as well as expert in supply chain management in this thesis is presented. The section is split into different subchapters to make separate the subjects.

6.1.1 Logistics in Sweden

According to Kolderup-Finstad[17], 80 percent of logistics services in Sweden is today outsourced and PostNord is holding a share of around 50 percent of all post-packages in Sweden. Gibel[18] states that we have a very well established postal infrastructure in Sweden. Other countries use international networks, but in Sweden we have a strong internal network with for example, PostNord, DHL and Schenker. He continues by stating that liquidation of the post was done early in Sweden which has enabled for other actors to take market shares, such as Schenker Privpak or DHL Service point. Also internet is very available in Sweden, which has contributed to normalize picking up packages at a retailer or pick-up point, for example ICA.

Kolderup-Finstad[19] argues that Logistics-Sweden is small with very few actors. He believes that this is due to economies of scale and that smaller logistics providers struggle to survive on the market. He continues by mentioning that smaller actors cannot offer the same services as the larger ones nor do they seldom have warehouse management systems (WMS). WMS is primarily used as a tactical tool when normal spreadsheets cannot cover current inventory and workload. The motivation to use WMS is to support sales growth or improve performance in order to increase customer satisfaction and efficiency.

[17] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[18] Tom Gibel, Director Human Resources, Interview 2016-04-26
[19] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08

Holmberg[20] claims that larger actors go out on a tender with their detailed description on what they demand whereas smaller actors purchase their logistics services ad hoc. A tender usually starts with the customers specifying their requirements along with properties and data. Then the LSPs offer different solutions on the requirements and asks the customer if they are willing to make any changes to create a more suitable and profitable solution. Some customers are open to changes, some are not and only focuses on the price. For the former ones willing to make changes, the LSP become a kind of logistics consultant according to Holmberg[21].

Jarnegren[23] argues that Logistics-Sweden has less imagination than for example Holland and that Sweden is generally not very good on offering or demanding innovative logistics solutions. He states that a customer has very clear specifications on what they want to purchase from a LSPs and that price often is the most interesting part. This limits the possibilities for the LSP to elaborate on potentially better solutions. He argues that the customers always get what they define but if the LSP had more influence on the process and could offer a new and better solution that might increase the logistics cost with two percent but on the other hand decrease the internal cost with five percent. The customers cannot compare these cost and thinks it is too complicated.

Andersson[22] agrees with this statement and points out that comparing solutions is a real time problem. Companies strive to have a clear image of what they want and compare price as this is usually the simplest way. If LSPs offer different solutions to the company, it is very difficult to compare them. One solution to this may be that the requesting company is requesting a standardized answer, which is not good from a development perspective, or the evaluation may only be based on comparisons of costs which then will overlook the differences in performance. The area is very complex according to Andersson[23] and Holmberg[24], it is not easy to understand the total cost as well as the total gain of different solutions.

[20] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[21] ibid.
[22] Dan Andersson, Associate Professor Chalmers, 2016-04-09
[23] ibid.
[24] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15

6.1.2 E-commerce Growth and Multi-Channel Distribution

According to Holgersson[25] there has been a misconception of the growth being huge, it has not grown in that way and it will not grow in that way. Today people usually shop online to get a lower price, but then you don't receive the goods until six days later. He says that it might be a question of generations but in order to really take off and reach levels of 20 to 30 percent, home deliveries really have to fulfill a functions of its own.

"If e- commerce is to reach 20-30 percent it has to have its own value, and a value that exceed the cost."

Johan Holgersson[26]

Halldorsson[27] who was a postgraduate and a guest researcher in the US at the start of the dot-com era in the beginning of the 00s sees a notable difference in how the logistical infrastructure is used now. Back then it crashed but now the e-commerce is growing.

"The biggest trend today, when it comes to buying patterns, is the increase of online sales"

Nikolai Kolderup-Finnstad[28]

Jarnegren[29] agrees and says that we have seen a growth of 35-40 percent in that segment the latest couple of years. That kind of growth cannot continue forever he continues, but yet for a while. Gibel[30] says that the increase is up to 50 percent and not yet estimated to ease. Kolderup-Finstad[31] on the other hand predict that the growth of e-commerce will continue to increase but state that the current growth rate is of some 18-20 percent. He believes that it will continue with the same growth rate for the upcoming three to four years and then stagnate to a more stable but still increasing growth rate.

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[25] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04
[26] ibid.
[27] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[28] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[29] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[30] Tom Gibel, Director Human Resources, Interview 2016-04-26
[31] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08

The increased e-commerce has affected companies in many ways. Kolderup-Finstad[32] states that more and more companies need to work in multi-channels for their distribution of goods. Pure e-commerce companies see that customers demand for physical stores to gain credibility and aid service and traditional retailers open up online channels to increase visibility and availability. Kolderup-Finstad[33] continues by mentioning that there should be different solutions for different channels. However, he states, very few companies incorporate various solutions for their channels today.

Kolderup-Finstad[34] has also noticed an increased pressure on the LSP where customers demand for shorter lead-times on delivery which in turn means that planning needs to be faster, which in turn requires for customers to share information faster. He continues to say that customers may not always understand this implication and just send over material and expect the LSP to sort it out.

"The climate for LSPs in Sweden today is tough and customers puts a high pressure on us to lower prices"

Tom Gibel[35]

Another issue state Gibel[36], is the lack of cost knowledge consumers have today. Consumer today do not understand the real price for home delivery, nor do all companies. This is mainly due to that companies use free delivery as a tactics for their online channels. This makes the customers misunderstand the actual cost, which in turn puts a lot of pressure on the LSP. Furthermore, argues Gibel[37], consumer prefer to choose exactly the time window for delivery, which is not possible if the LSP wants to make the routes optimal.

6.1.3 Difference in Logistics for Traditional and E-Commerce

Gibel[38] states that there is a price difference in warehousing and transportation but also that this price differs for each solution. He points out that logistics for online channels are by far the more expensive than for traditional channels. Kolderup-Finstad[39] agrees that home

[32] ibid.
[33] ibid.
[34] ibid.
[35] Tom Gibel, Director Human Resources, Interview 2016-04-26
[36] ibid.
[37] ibid.
[38] ibid.
[39] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08

delivery initiated by e-commerce increases the cost. He estimates as well as Holmberg[40] that the cost is about twice as high as for traditional retails, excluded costs for returns.

Jarnegren[41] explains that there has been a shift in power in the two context. In the B2B context the supplier is the one setting the terms whereas in a B2C- context it is the end-consumer who is dictating the terms for the delivery. He means that for the transporter, there is no actual difference in the purchasing process for traditional retailer and online sales. On the other hand he says, the warehousing differs. There are more orders, but less items in each order, which increase the cost for warehousing. Furthermore, online channels skip the intermediary, so the offline store is moved into the warehouse where we, instead of the customers, pick. Holmberg[42] agrees here and talk about that the shop moves into the warehouse.

One will not focus on whether the product of service is bought online or offline.

"The shop moves into the warehouse"

Anders Holmberg[43]

This increases the cost for warehousing. Furthermore, all participants agree that the cost for transportation is higher for the last mile. It can be optimally planned and achieve somewhat the same price as traditional transportation to retailers says Holmberg[44], but it is rare and demands for accurate delivery information. According to Halldorsson[45] actors of established flows have worked with the same customers and with the same processes for many years and have had time to work on them, whereas there is more ad hoc for actors with e-commerce channels.

Holgersson[46] explains that e-commerce, although digital, has an analogous base- being the physical transportation of goods from one place to another. Ever since it started, e-tailers have been in a position where the physical flow needs to adapt to the existing standards that logistic providers have built. There are such high volumes entering our systems, and then we

[40] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[41] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[42] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[43] ibid.
[44] ibid.
[45] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[46] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04

set the terms, and that is how it has been. The goods owner has had to adapt and adjust to a rigid and traditional environment, an environment and a system that doesn't even fit them.

6.1.4 E-Commerce Returns

Holmberg[47] argues that for normal products, the return rate on online sales channels are around five to ten percent, however much higher for clothes and shoes where the rate can reach up to 45 percent. Halldorsson[48] agrees that the rate of return for products purchased online is very high around 20-30 percent for some products. Kolderup-Finstad[49] concur with this statement and says that companies, such as Nelly, have a return rate of around 40 percent. He says however, that the problem of returns lies on the focal company and not the LSP, something that Holmberg[50] agrees upon. They mean that as a LSP, the problem of increased cost lies at the ordering company and does not affect the LSP directly. Gibel[51] argues that online sales increase the return rate and may affect the LSP. One problem he has noted is that home deliveries, not able to be delivered since the customer is not home, is stocked in terminals not made for inventory. This increases the overall cost, but he also mentions, that this cost is covered by the focal company.

A trend noted by Holmberg[52] is that you see companies' ship more than one size to the customer in order to have only one sole return instead of having the customers try several times. He believes that in the future, there will be collection point where the goods can be returned. Gibel[53] agrees and says that the most successful e-channels have options such as 365 days of free return. Others are working on reducing the number of returns by offering a greater variety to be delivered from the start so that there is only one return back instead of several. This makes customers safer when purchasing online, which increases the customer segment markedly, according to Gibel[54].

[47] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[48] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[49] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[50] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[51] Tom Gibel, Director Human Resources, Interview 2016-04-26
[52] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[53] Tom Gibel, Director Human Resources, Interview 2016-04-26
[54] ibid.

Halldorsson[55] was involved in a project where the companies' return policies were studied. They found that the more generous the policy, and the simpler the process the higher the return rate. He divided the different types of returns into at least four kinds; return to postal office, return to collection point, return to companies owning physical stores or, return to a store with products from several producers. It is beneficial in an economic, environmental and customer service perspective to use a physical store. Doing so, the store can work as a blocker to moving it upstream. For some products the value during a return process goes down just because time passes and it might not be worth to transport them back, instead they are disposed. Another complication of the subject is who is going to perform the return in a store, if everyone should be able to inspect the product and decide what to do from there. Stores might not be able to repack or modify the product. Another, newer issue is whether, for example, the pharmacies should be able to take care of returns that haven't been bought there. However, Halldorsson[56] do not think that the world is ready for that.

Holgersson[57] approves that returns need to be considered in a new way. We should try to make an exchange instead of just retrieving the goods in order to have a more efficient system of delivery and retrieval. As of now it is very ad hoc, expensive and wasteful.

6.1.5 Environmental Impact of Transportation in the Future

The majority of the participants agree that future environmental legislations will, to some extent, affect the cost of transportation with an increase. Kolderup-Finstad[58] states that trends points towards this. Gibel[59] says that he hopes that an increase of the price will be seen, especially for the e-commerce segment. It is according to him quite a new channel and it has been advertised as a cheaper solution than offline sales. He believes that this will change in the future, as companies in the long run need to cover the actual costs for transportation. He also mentions that there might be environmental legislations that can increase the price, potentially taxes influencing city logistics.

[55] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[56] ibid
[57] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04
[58] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[59] Tom Gibel, Director Human Resources, Interview 2016-04-26

Holgersson[60] explains that they have had an aggressive environmental policy. All of their cars keep a certain standard and they are taking trailers by train and only use trucks for the first and last mile, and have a large share of electric cars. But in order to be really environmentally sustainable it is not enough to solely change the type of fuel. The system needs to change in order to plan and consolidate. For a long time, the concept of city logistics has been discussed, that there should be reloading terminals close to the cities, and then only electrical distribution cars can enter the cities to deliver. That, in combination with new legislations, concerning how large share of the vehicle fleet that have to run on alternative fuels and how much traffic that is allowed in city centers, will influence the future market for transportation in urban areas.

6.1.6 Evaluation of Logistics Service Providers

Kolderup-Finstad[61] argues that the main focus when choosing a LSP is the price. Customers are also focused on shorter lead-time as well as quality of services, but in the end, money is the most prominent factor. Jarnegren[62] agrees to some extent, but claims that not all customers choose LSP based solely on price. He mentions that customers with low value goods tend to choose more on price since transportation stands for a larger share of the overall cost and is eating of the margins. He continues to say that other customers look for an overall logistics solution and see logistics as a way of increasing their competitive advantage. For example, some logistics firms can offer delivery inside the house with installation of the product, which for some companies is more important than the price. Gibel[63] see that their customers look at two factors, price and quality. He hopes that quality is the most prominent one, but mentions that it differs for each client.

"I think that our customers choose us because we have the right type of solution at the right place".

Anders Holmberg[64]

Holmberg[65] says that there are two major hygiene factors; to be at the right place (close to harbors, airports, infrastructure and consumption) and to offer the right solution. These two

[60] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04

[61] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[62] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[63] Tom Gibel, Director Human Resources, Interview 2016-04-26
[64] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15

are what makes a logistics provider attractive. He then continues by saying that if these dimensions are fulfilled, then price is the most important factor when choosing LSP amongst those offering the right service.

Kolderup-Finstad[66] also mentions that the environmental issue is beginning to appear on the agenda, especially for bigger companies who sees a demand from their customers to be more proactive. However, this issue is still not a cornerstone whilst choosing LSP. Rogerson[67] agrees and argues that the environmental issues are there, but she believes it does not actually change anything yet. When looking at articles about the environmental impact on logistics, one can see that it is still not a prominent factor, she argues.

Furthermore, according to Holmberg[68], in order for a company to actually change logistics provider, they must really be unsatisfied since moving stock is expensive. He has noted that on a scale of satisfaction from one to ten, the customers noting the provider with one to three are the ones dissatisfied enough to actually change provider, the other ones generally stay.

6.1.7 Sharing of Information between Logistics Service Provider and Customer

Jarnegren[69] says that the information sharing varies a lot between each individual customer. The B2B flows are quite stable and they provide data on a regular basis and it is usually correct. The B2C segment however can be very fluctuating and less detailed. He mentions further that for B2C customers, the information is more detailed and correct for larger tenders. Furthermore, Kolderup-Finstad[70] also agrees that the information differs a lot from each customer and that correct information is important to the LSP.

Holmberg[71] says that their customers share everything from the shape of the goods to packaging instructions as well as lead-time and delivery options. The information is necessary in order for the LSP to plan the capacity. The communication with the customers needs to be two handed. Some customers demand us to pick clean every day, in other words, to never

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[65] ibid.
[66] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[67] Sara Rogerson, Doctoral Student Technology Management and Economics, Interview 2016-04-27
[68] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[69] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[70] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[71] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15

leave the warehouse at night without picking each order that has been placed. Providing that service is very expensive and demands for us to keep an overcapacity, says Holmberg[72].

Johansson[73] argues however that sharing of information between customer and LSP is extremely important. Formerly, one could rely on experience and what was shipped last year during the same period. Today the demand is more fluctuating and real time and accurate information is very important in order to decrease cost for the LSP.

6.1.8 Customers Affecting the Price of Logistics Services

There are some basic things says Jarnegren[74]; that they are EDI-coupled, so that the LSP can handle everything electronically. The rest is according to him dependent on the customer and how the LSP can build synergies with their existing system and in their own flow. Gibel[75] argues likewise that customers should adapt their packages so that the LSP can achieve synergies with the existing flow.

"How do you fit your goods into the smallest possible package and decrease the volume so that you can avoid transportation of air?"

Carl Jarnegren[76]

He continues by mentioning toilet paper as an example where some companies compress the roles so that the packages eliminate waste space. He also argues that a way to decrease cost is to give customers incentives to subscribe on a product. The LSP can then plan according to solid delivery data and therefore create optimal route scheduling as well as capacity in the warehouses. According to him, this makes a huge difference on the overall cost.

Andersson[77] and Johansson[78] agree and thinks that pushing customers into subscribing is a good solution. Doing so will, according to them, make it easier to steer and coordinate with other flows which would facilitate the planning of capacity and routes for the LSP. Furthermore, mention Johansson[79], it would be beneficial for both parties, the focal company

[72] ibid.
[73] Björn Johansson, Supply Chain Manager, PostNord Fulfillment AB, interview 2016-05-09
[74] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[75] Tom Gibel, Director Human Resources, Interview 2016-04-26
[76] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[77] Dan Andersson, Associate Professor Chalmers, 2016-04-09
[78] Björn Johansson, Supply Chain Manager, PostNord Fulfillment AB, interview 2016-05-09
[79] ibid

gets the opportunity to be more flexible and thus lowering cost for the consumer. Ekman[80] agrees that he can see somewhat a trend that customers return to the webshop and that subscribing could be an alternative. Andersson[81] believes that pushing customers into subscribing can be done, depending on the customer and the product, but it may be complex.

Jarnegren[82] says that you need to be careful when creating incentives for your customers. You are still supposed to offer everything while pushing customers towards something else, such as subscribing. However, you should create advantages with this new option so that customers gain from choosing the preferred solution for the company. He states that even though customers move towards subscription, other options should still be maintained in order to not lose customers to competitors.

"Having a stable demand and customers with a large delivery time-window is a bargain advantage since it gives the logistics providers the freedom to consolidate and to plan so that they can use their own capacity and increase their fill rate - reducing the cost"

Arni Halldorsson[83]

Halldorsson[84], as well as Holgersson[85], does also think that subscription could be a way of reducing cost since the flows would then be more stable and easier to plan for. Halldorsson[86] is mentioning several different kinds of characteristics that could be used as bargain power in addition to subscribing. Using the fact that the target group is older and hence more prone to be home, making them more flexible in receiving and available in low demand hours which gives the LSP freedom to consolidate, to plan and to increase their fill rate while evening out the capacity usage. Further he mentions, giving alternatives that are suitable for the route with a better price than for unsuitable delivery times. Holgersson[87] also mention that it still has to be a certain density of deliveries and there is additional complexity since even though they have a large time-window, they might not be at home at that exact

[80] Fredrik Ekman, Key Account Manager SCA Hygiene Products AB, Interviewed 2016-04-18
[81] Dan Andersson, Associate Professor Chalmers, 2016-04-09
[82] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[83] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[84] ibid.
[85] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04
[86] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[87] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04

moment when we come and then we also have to have a good solution as hanging it on the door or likewise to maintain the flexibility and thereby keeping down the cost.

Andersson[88] continues to say that TENA's products are easily combined with other during storing and transportation. A competitor, Procter & Gamble, are focusing on this currently. He says however, that it is more important to ensure that the direction of the solution is in line with the future solution so that it is not a costly sidetrack.

"Customers have too fixed specifications when they purchase logistic services which eliminates the possibility for LSPs to elaborate on better solutions and find synergies with existing flows"

Tom Gibel[89]

Gibel[90] says that one issue they have noticed is that customers are not good enough on sharing accurate information. Furthermore, they tend to want to control the outcome and their specifications are usually very fixed. He believes that customers would gain on letting the LSP be more responsible and also handle some parts of the contact with the consumer. He says that the goal is to create a close relationship with the customer where the LSPs offers a customized specific solution. It might cost more than the initial specification, but on the other hand, it can decrease cost internally for the company. The aim is to create a solution beneficial for both parties, where the LSP works as a logistics consultant for the company. The same idea was also discussed with Holmberg[91] who argues that companies need to be more open towards changing their initial specifications. This idea is also supported by Halldorsson[92] who thinks that they should let the LSP come up with new solutions rather than being too specific to gain a better price or to cut costs.

Rogerson[93] states that there are some parts of the purchasing process in which the customers can affect the cost. The company should specify what specifications they have in terms of logistics services.

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[88] Dan Andersson, Associate Professor Chalmers, 2016-04-09
[89] Tom Gibel, Director Human Resources, Interview 2016-04-26
[90] ibid.
[91] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[92] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[93] Sara Rogerson, Doctoral Student Technology Management and Economics, Interview 2016-04-27

"Determine what specifications during the purchasing process that are changeable and which are not. If a specification is considered a cost driver at the LSP and changeable for you, make the change"

Sara Rogerson[94]

Rogerson[95] continues by mentioning that for an online sales channel, it is even more important to evaluate the supplier. The flows are very fluctuating and very dependent on other flows from the LSP. So, it is important to reevaluate during the contract period. She also stresses, that sometimes you are not able to choose amongst so many providers when you have e-commerce with small volumes. That is yet an indicator of that it is worth to come up with a new solution together with the LSP, since the effort to do so is reasonable when the actors are few.

Johansson[96] furthermore, mentions that being able to delive unattended home deliveries is preferable for the LSP since additional cost for storing returned goods is high. The focal company should also work on decreasing the return rate of their products.

6.1.9 Horizontal Collaboration of Logistics

Kolderup-Finstad[97] argues that horizontal collaboration is not possible between different LSPs. He states that collaborating would make it impossible to choose the company in charge and in the end, it could create a monopoly. For that reason, he says, people are very cautious. Andersson[1] says that there are some manufacturing companies working on finding goods from other companies that are suitable to combine with their own shipments and then let a neutral part that coordinates the transportation and warehousing. However, he says, there is already a whole industry doing just that, namely third party logistics provider industry.

"Working from home one day, my colleague noticed that there were seven different vehicles on the street delivering only to a few houses- what if all that capacity could be used jointly?"

Arni Halldorsson[98]

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[94] ibid.
[95] ibid.
[96] Björn Johansson, Supply Chain Manager, PostNord Fulfillment AB, interview 2016-05-09
[97] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[98] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29

Halldorsson[99] is also talking about using existing excess capacity. There are a lot of vehicles entering a neighborhood to do, or deliver, different things. If there were a hub where one single vehicle could collect and deliver jointly, the capacity could be used in a more efficient way both environmentally and economically. However, he mentions, there would be a trade-off between time and that people are a bit suspicious about unconventional deliveries. It will take a while before we get used to the uber-thinking in other areas.

If the share will rise from about 10 up to 30 percent it will be a lot of goods changing channels and changing flows and there will no longer be valid to think in terms of ”we are the green players and this is ours and you are the blue players, that is yours” Holgersson[100] said. Instead, he continues by mentioning, there have to be some sort of cross-mixing system where one actor is the platform-owner, maybe some sort of IT-company, who sources capacity from other actors. He also says that when designing new cities, it is discussed having only one or a few buildings accessible for deliveries and that families could take turn to deliver or having a gatekeeper minding that. Another possible scenario mentioned was people subscribing to a place in a warehouse where the weeks' online purchases are collected and then collectively delivered once a week.

One could compare it with the airline business says Johansson[101], where collaboration is present now. We have solutions where a company only delivers different options for the customers where they have agreements with their customers and are able to reduce prices. He believes that the same will happen with logistics, we will be able to buy logistical services in many different ways in the future.

6.1.10 Trends within Logistics

Most participants agreed that one of the biggest trend in Sweden today is e-commerce, affecting logistics drastically. Kolderup-Finstad[102] argues that e-commerce is more developed in countries such as the US and UK, and is now finally starting to bloom also in Sweden. Consequently, with an increased e-commerce he mentions that more and smaller orders are handled as low quantities goes directly to customer instead of shipping large quantities to retailers.

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[99] ibid.
[100] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04
[101] Björn Johansson, Supply Chain Manager, PostNord Fulfillment AB, interview 2016-05-09
[102] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08

"One trend, inspired by globalization, is the increased demand for customization"

Nikolai Kolderup-Finstad[103]

Customers today expect a larger range of products, at a lower cost and with shorter lead-time. Looking at it from a LSP's perspective says Kolderup-Finstad[104], this trend needs to correspond to the increasing demand from our customers to keep inventories levels as low as possible and to meet shorter lead-times, sometimes even the same day. This makes forecasting even more difficult, and with the changing world of today it is hard to predict the need of tomorrow. Furthermore, he states that trends show that customers demand more flexible deliveries, to the office or at home, during all times of the day as well as the weekend. Gibel[105] agrees that this trend is present.

Holmberg[106] thinks that in the future there will be smaller stores for both showroom and collection of online sales. Kolderup-Finstad[107] agrees and points out the increasing need for warehouses on the border of bigger cities. He continues by mentioning a trend that pure e-commerce companies start opening physical stores in order to gain credibility and availability.

Kolderup-Finstad[108] suggests more pick-up points instead of home delivery as a solution for increased demand of e-commerce. One problem with home delivery today is the delivery time-window, when someone needs to be home in order to receive the goods which is not possible for a full working family. He argues that one of the main reasons that home delivery with e-commerce has worked well in countries such as the US is the concept of housewives, always home to receive the goods. He says that the future increase of transportation cost demands for new solutions.

Jarnegren[109] proposes that more consolidations will be needed. He believes that in the future we will not see shorter lead-times but a more precise delivery time instead. Gibel[110] argues that pick-up points should be more proactive since they can only receive smaller goods

[103] ibid.
[104] ibid
[105] Tom Gibel, Director Human Resources, Interview 2016-04-26
[106] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[107] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[108] ibid.
[109] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[110] Tom Gibel, Director Human Resources, Interview 2016-04-26

today. Rogerson[111] agrees that home delivery adds additional costs as well as an increased environmental impact. She says that the customer pattern differs between bigger cities and the countryside. On the countryside the customers are more accepting with a longer delivery time, however, they want a smaller delivery time-window. In bigger cities on the other hand the delivery should be made faster and delivered to where the customer is, for example at work or at home. This study was according to Rogerson[112] an international study but, is of interest for other Sweden as well.

Holmberg[113] believes that country borders will be less visible in the future. When shopping online customers tend to care less about the products origin. It is easier and faster to cross country borders, so to establish production and such where it is less expensive will be more important than today. He notes, on the other hand, that it is also important to be close to the customers, so one needs to take both of these aspects into consideration.

"3D printing will revolutionize logistics worldwide as material can be sent to the customers who then can print the product they prefer"

Anders Holmberg[114]

Halldorsson[115] thinks that the reason for which the dot-com companies in the beginning of the 00s crashed was because they did not back it up logistically. Although customer where more reluctant to disclose confidential information the payment worked well, as did the websites and catalogues, but they did not have sufficient logistical infrastructure. They thought their existing logistical systems could manage the change, but it did not work out. At the time, they did not have the technology, something that we have today. We are in a time where everyone is doing quite well so it is time to evolve and find innovative ways of using the technology. Actors should go crosswise to the industry and be unconventional.

Holgersson[116] refers to Uber and Airbnb, whom are all about owning the platform without tying up capital in physical assets. He said that all of their competitors have been focusing on B2B and that there it is all about branding, and that might not be the model of the

[111] Sara Rogerson, Doctoral Student Technology Management and Economics, Interview 2016-04-27
[112] ibid.
[113] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[114] ibid.
[115] Arni Halldorsson, Deputy Head of Department Technology Management and Economics/Professor Chalmers, Interview 2016-04-29
[116] Johan Holgersson, SVP Marketing & Director e-LABS Bring, Interviewed 2016-05-04

future. Technology push should be separated from market pull, which will dominate in the future.

6.1.11 Future Warehouses

One of the major problem for warehouses today is having capacity-wise the right manpower. Holmberg[117] says that seasonal peaks as well as campaigns makes the need for manpower in the warehouses unstable, and to have ordinary staff to cover all peaks is impossible and very expensive. Therefore, warehouses need to hire consultants with less experience and knowledge, which affects the efficiency. One solution to this is automated warehouses which he believes we will see more of in a couple of years. Kolderup-Finstad[118] agrees that there will be more automated solutions, especially for high value goods with a large range of article variety. Although most respondents agreed that low value, bulky goods with few article-numbers were not ideal for automated warehouses. Jarnegren[119] countered with that no kind of picking or handling is ideal for that kind of goods, since the handling will be relatively expensive however.

"There will be automated warehouses solely focusing on e-commerce in order to increase efficiency"

Nikolai Kolderup-Finstad[120]

Holmberg[121] also believes that there will be specialized sites, shared between several e-tailers, where they can perform their warehouse activities, such as pick and pack, in collaboration. Kolderup-Finstad[122] also points out that there will be more cooperation between companies, where competitors will cooperate on logistics in order to decrease costs.

6.2 SURVEY

Presented here is the result from the survey consisting of questions regarding logistics and e-commerce sent out to logistical partners. The questions followed by only the answers is presented in figure 18, only the responses that was chosen are shown. The first two questions

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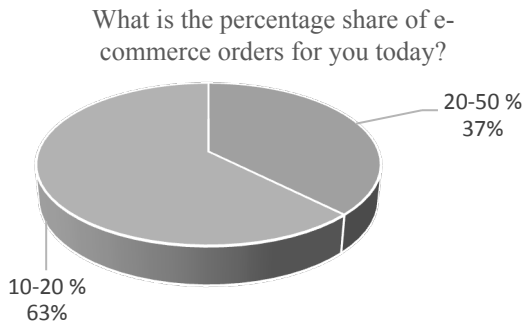
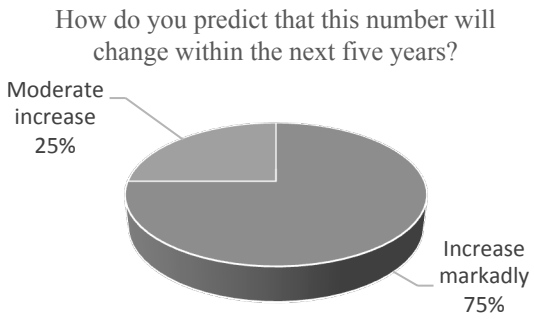
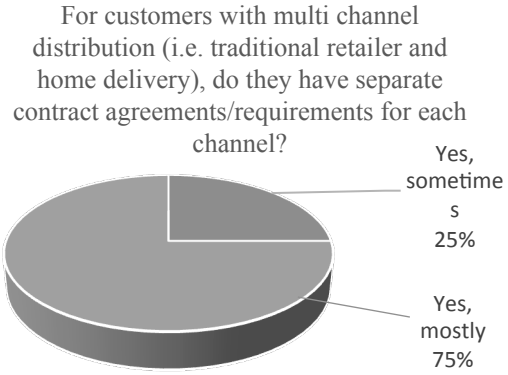
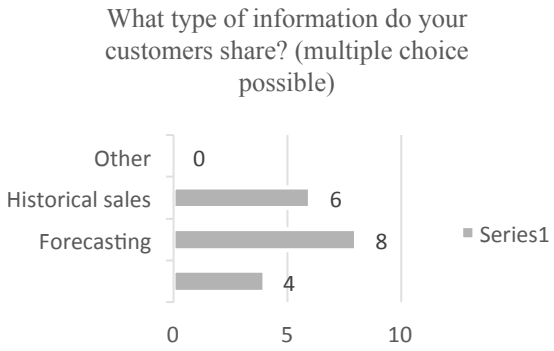
[117] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[118] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08
[119] Carl Jarnegren, Partner Manager Bring, Interview 2016-04-21
[120] ibid.
[121] Anders Holmberg, Strategic Business Development Manager Schenker Logistics, Interview 2016-04-15
[122] Nikolai Kolderup-Finstad, Solution Designer Schenker Logistics, Interview 2016-04-08

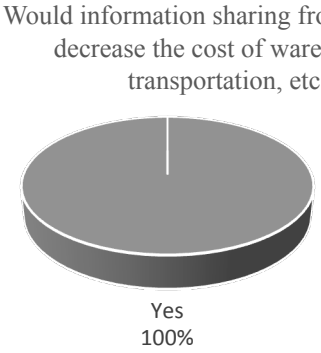
are focusing on e-commerce and how much it will grow in the future. The following questions focus on sharing of information, innovations and if a customer can affect pricing, see figure 18 for the division of the eight answers.

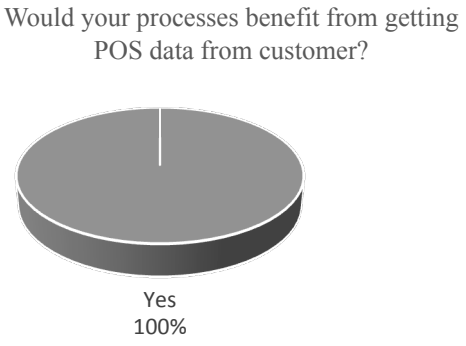


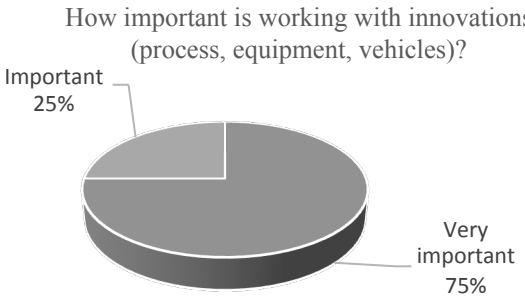


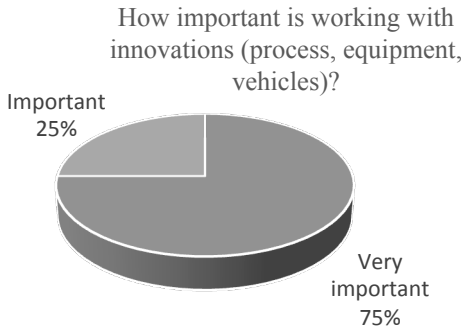












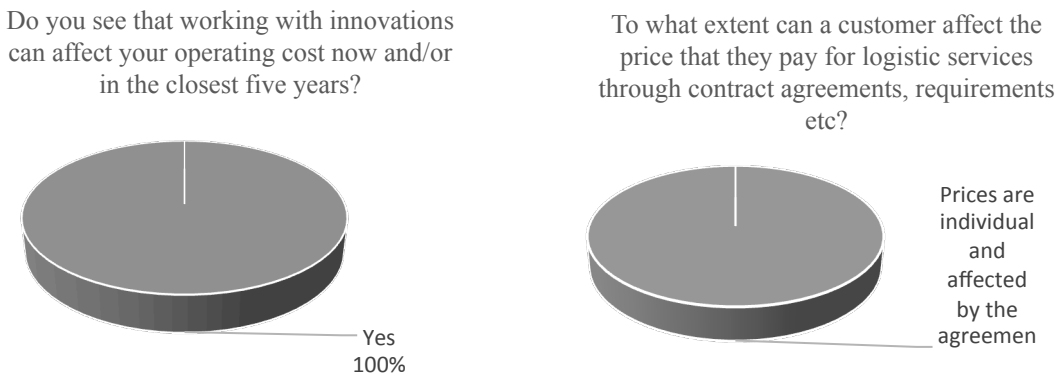


Figure 18 - Questions and answers from the survey

The last questions was "what are the most important trends for logistics providers within home deliveries of goods purchased through an online sales channel" and was optional Three responses were made:

- That customer themselves have an option to choose delivery method. Same/next business day. Home/Office or access point.
- Flexibility in delivery, evenings, weekends, to a customer's workplace etc.
- Rapid growth, increased focus on shipment progress (track and Trace, value added services)

7 ANALYSIS AND DISCUSSION

The following chapter is a discussion based on the empirical results and the theoretical- and practical framework. The chapter intends to follow up and discuss the issues presented in the formulation of the problem.

The disposition follow figure 19, where the different research areas that have been treated are on top, below are the analyzed parts starting with the PEST-analysis to understand the current market for incontinence products initiated by an online sales channel. The analysis presents the current situation as well as what external factors that might affect the future. The market analysis has used existing numbers and made forecasts based on existing theories, therefor the results of these forecasts are shown and discussed in this chapter. Further on, last mile deliveries in terms of differentiation to traditional retailing, cost drivers and trends are analyzed. Moreover, how customer evaluate LSPs is analyzed followed by how customers can affect pricing and service. Lastly, the current situation for TENA's webshop is analyzed as well as future suggestions for the purchasing process of logistics services, the two subchapters are partly built on the analysis of the earlier subchapters.

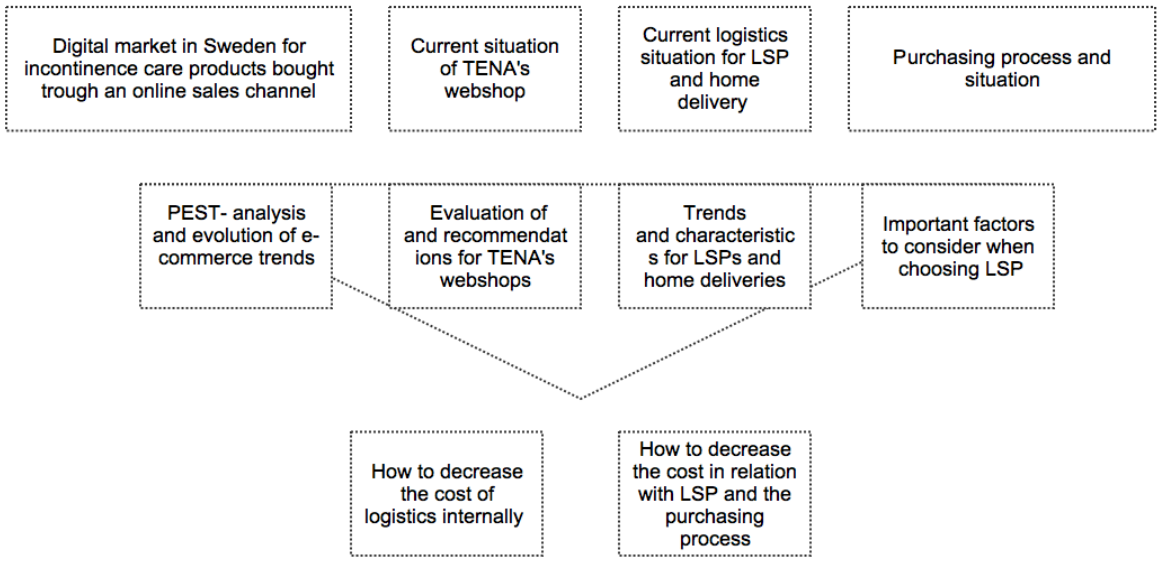


Figure 19 - Disposition of discussion and analysis

7.1 MARKET AND PEST-ANALYSIS

The literature research made in this thesis presented five growth factors for e-commerce adapted from the study made by Ho, et al. 2011. They found these five to be the most prominent ones after extensive investigation. Furthermore, demographic changes were

found, both in the literature and from employees at SCA, to influence the incontinence care market, in general, and has therefore also been included in the PEST-analysis. What can be derived from the framework is the following, table 10.

Table 10 - PEST-Analysis of the digital incontinence care market in Sweden

Political	• From the literature it is shown that City Logistics is a movement that might affect the future digital market for digital incontinence care. This is mainly since there are numerous of stake holders being involved in the question of vehicles in urban areas. This in combination with the design of "new Cities" can lead to political engagement and decisions negatively affecting the market. The politics around reimbursement is also highly affecting the market but no conclusions of a potential change could be drawn.
Economic	• A very well-functioning ICT infrastructure, with high investments from both tech companies and the government in Sweden. • Decreased venture capital availability in Sweden, but a high entrepreneurial drive. Sweden is a well-known country for tech-start-ups and foreign investors. There is a well-functioning ICT infrastructure which makes Sweden a country that produces many new companies. • Very high finance card penetration and estimated to reach full penetration within a ten years' period.
Social	• Increase of around 250 000-350 000 65+ year-olds in Sweden in a ten years' period. Otherwise stable on the other segments of the population. • Relatively high education level with a great volume of people with higher education. • E-commerce does not, for most products, add additional value of its own. If the home delivery, as for online groceries, could solve a problem for the consumers the market would increase.
Technological	• Currently around 94 percent but full internet penetration can be expected in the future, somewhere around 96-97 percent within the next ten years.

7.1.1 E-Commerce Growth in Sweden

Sweden has one of the highest Internet penetration levels in the world and there has, since the economic crisis in 2008, been over 90 percent penetration. The current levels reach up to 95 percent and most people have internet-access both at work and at home. Samadi, et al. (2015), in his study found that younger people, generation Y, are more prone to use internet and purchase online. The population is changing and the now younger ones, with more advanced IT-knowledge, will later be in the older segment. As was found by Statistiska Centralbyrån, almost 100 percent of our younger population, under 45 years old, use internet

today. When they reach the retirement age, we will most likely see an increase to almost 100 percent penetration for the whole population in Sweden.

Sweden has, according to the study performed in this thesis, a very well established base for e-commerce growth as well an increased demand for incontinence care products in general due to demographic changes. When looking at the e-commerce growth during the last year, one can see that the growth has been exponential since 2005. Meeker (2015) stated that the United kingdom was a couple of years before Sweden in e-commerce, as can also be seen on the higher percentage of retail sales that is made in the UK compared to Sweden. He pointed out that they have had an exponential trend and that Sweden most likely will follow the same path. By using the previous years' revenue of e-commerce in Sweden, an estimated exponential trend, following previous years' curve, could be calculated and is presented in the following graph, figure 20.

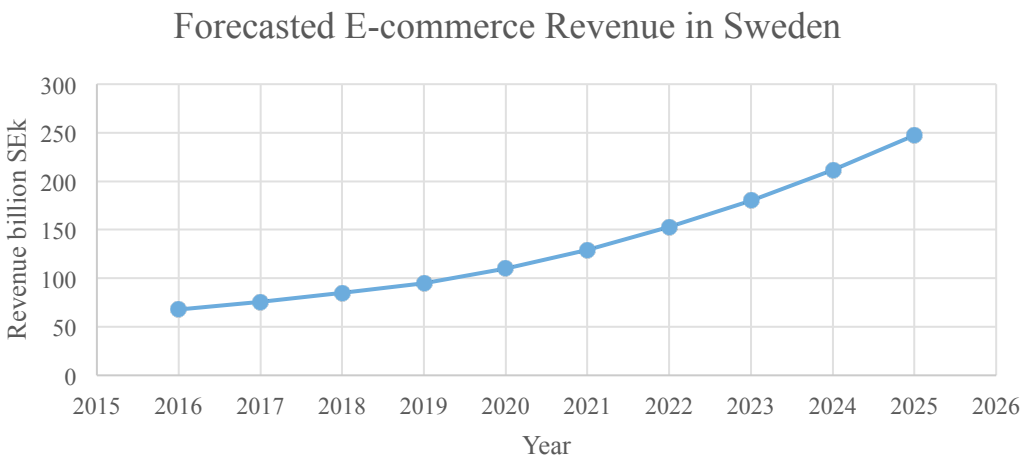


Figure 20 - Forecasted revenue of e-commerce as calculated from previous years result with an exponential trend

This forecast is an estimation of the market and valid if it follows an exponential trend as is the case for many other countries, such as the UK and US. The trends show that e-commerce will reach a level of a little bit under 250 billion SEK in 2025, an increase with 500 percent. This might seem as a very high number, but taking into consideration the readiness that Sweden has towards e-commerce and the ICT infrastructure, the value as a minimum, is reasonable. In addition, both interviews and the survey indicated further growth. Furthermore, since those affected by urinary incontinence mostly are 65+ year-olds, the technical knowledge in this for the customer base is lower and they are more likely to shop offline. This will also affect the overall growth rate and one can therefore conclude that 500 percent is in the lower range.

7.1.2 Demographic Changes Effects on the Incontinence Care Market

The extensive research made by Statistiska Centralbyrån (2016) showed that the population of elder, 65+ year-olds, will during a ten years' period increase with around 300 000 persons, which represents a 16 percent increase. As could be seen under the chapter practical framework, figure 13, the population of 65+ year-olds people has steadily and linearly increased in Sweden during the last ten years. If the same growth rate would continue over the upcoming ten years, one could calculate the following graph, figure 21. Here the increase has been set to a continuous growth calculated from figure 13 in the practical framework by using a constant change derived from the period 2005-2015. What can be seen is that the increase would be 347 136 people during the period of 2015-2025, which correspond quite well to the forecast made from Statistiska Centralbyrån (2016). One can therefore conclude that we will see a somewhat linear increase the upcoming ten years and that the segment of 65+ year-olds in Sweden will most likely increase somewhere around 250 000-350 000. Even though all evidence noted in this thesis points towards this direction, this statement is just an estimation.

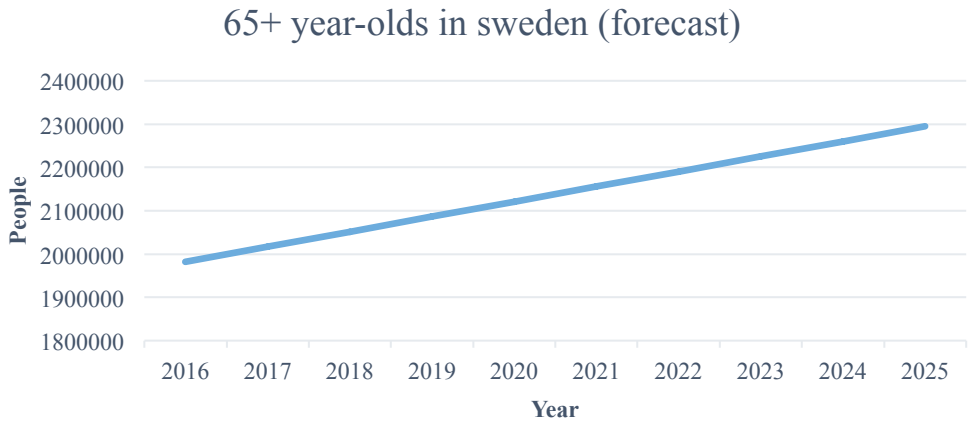


Figure 21 –Forecasted population growth of those over 65 years old in Sweden as calculated from the population growth the last ten years in Sweden.

The other three age segments; 0-24 year-olds, 25-44 year-olds, 45-64 year-olds has somewhat been stable the last ten years with a small increase of around 100 000 for each segment. Since fertility rates are declining and furthermore, trends in Europe are pointing towards a small decline in population (United Nations, 2015), one can assume that these segments in Sweden will have relatively small changes. We will therefore, most likely, see a population distribution that is changing towards a higher number of 65+ year-olds people in Sweden and a stable or declining younger population.

When analyzing the prevalence of urinary incontinence, one can conclude that not many reliable studies has been performed on the population since the results vary greatly from each study, and since the nature of the condition might make people less eager to reply if affected (Milsom, et al., 2014). If the population of those under 65 years old stands stable and if we have an increase of the lowest estimated of those over 65 years old, in other words 250 000 people, the following number can be expected, see table 11.

Table 11 - Population 2015 and an estimate of the population 2025

2015		**2025**	
< 65 years old	> 65 years old	< 65 years old	> 65 years old
7 903 709 people	1 947 227 people	7 903 709 people	2 197 227 people
= 9 850 935 people		**= 10 101 017 people**	

Of those under 65 years old, we have found that the lowest possible prevalence of UI is 8.5 percent for women and 1.6 percent for men. If we assume that women and men are equally distributed in Sweden, then we would have 5 050 509 men and 5 050 509 women. For those over 65 years old, the lowest found prevalence of UI was 8.5 percent respectively and 6.9 percent for women and men. It they are also considered to be equally distributed in the population, the following number can be calculated of prevalence in Sweden 2015 and 2025, table 12.

Table 12 - An estimation of lowest possible affected by UI in Sweden 2025

Affected by UI in 2025	**> 65 years old**	**< 65 years old**
Women 2015	335 911	165 514
Men 2015	63 230	134 359
All 2015	**699 014**	
Women 2025	335 911	186 764
Men 2025	63 230	151 608
All 2025	**737 513**	

The result show an increase of some 5.5 percent of prevalence of UI in Sweden due to demographic changes the upcoming ten years. In other words, with this calculations, the

changed population will increase the people affected with some 5.5 percent. Furthermore, these calculations are made with the lowest found prevalence of UI, which several studies point towards is too low, as can be seen in the practical framework. As many as 60 percent of the men and 70 percent of the women are, for example, according to the study of Irwin, et al. (2006) the actual numbers of those that might be in need of lighter UI protection. So, in other words, the numbers used are most likely much lower than the actual relevance, and furthermore, the increase will probably be much higher than 5.5 percent.

7.1.3 Estimated Market for the TENA webshop in Ten Years

If the growth for the ten next years is estimated to be 500 percent due to e-commerce growth and 5.5 percent due to demographic changes, the following calculation can be made to find out the amount of orders the webshop will have in 2025 using the order-volumes of today, (300-500 per month). The estimated quantity will then be 1 517-2 528 orders/month.

One needs however to keep in mind that this is a low estimation. Additional factors that could affect the outcome are:

- By using an average value for prevalence or make an extensive research of the actual population would most likely contribute to a much higher actual prevalence and furthermore, a higher increase with the demographic changes.
- The growth rate of e-commerce is probably not accurate for this channel and in general much higher due to:
    - The webshop is a relatively new channel, not very well established in the customer base. As customers are getting more used to shopping online and are more aware of the benefits, the order numbers will probably increase.
    - Most customers are today digital immigrants; this will change as we grow older. When the now younger segment turns older, they will be more prone to purchase online and this will affect the growth rate.

7.1.4 Evaluation of TENA's Webshop

The webshop handles low volumes of around 300-500 orders per month in Sweden. Consequently, the profitability of the online sales channel of TENA products does not influence the result markedly. In order to establish guidelines for the purchasing process of logistics services for the webshop, the current webshop situation was analyzed.

Evaluation of the TENA webshop after success factors and trends mentioned in the literature research is shown in table 13.

Table 13 - Evaluation of trends and abilities of TENA's webshop

Type	Trend/ Ability	Performance/approach
Technological	Mobile friendly websites and applications	The webshop is accessible from all kinds of connected devices and adapted for them, which is beneficial according to Tomas and José (2015).
	Video-based marketing	TENA has several marketing videos on YouTube.
	Increasing trust in e-commerce companies	TENA uses payment services that are known and trusted in Sweden.
	Invention of new technology and devices	For instance there is the "smart diaper" which drags attention to the brand and could by that attract customers.
Demand-driven	Impact of social commerce	The webshop have different options for men and women and you are able to make the letters bigger or smaller. Customers can contact TENA for guidance for products and for purchases but that is only available during a rather short period of the weekdays. No reviews at the webshop.
	Personalization	
	The Social Customer	
	Faster service	The service is between 2-5 days, which is not standing out as particularly fast.
	Always-on shopping	The webshop is always available as long as you do not need guidance.

Viewed in the perspective of the trends and success factors mentioned by Tomas and José (2015) and by Turban, et al. (2015) TENA's webshop is performing well but should make more effort for service and availability. This could be done by for example increasing the opening hours for personal guidance and by adding a Frequently Asked Questions-section in order to help out during the time that the telephone-assistance is not available. It is possible that it is not profitable yet to increase the telephone hours but maybe it is worth looking at it for the future. Analogously, it is possible that customers demand faster service and a way to offer that in a profitable way needs to be found. Different ways of affecting the cost will be discussed in 7.3.2. Another area of concern is The Social customer. This more aware customer seems to be important in the future and it is therefore of essence that they are

offering services in a responsive way and that TENA is aware of their presence and finds ways to further personalize in order to satisfy them. A way to keep track of what is said about TENA is to allow for customers to review products and in that way open up for the social customers as well as for having accessible information about areas of improvement.

7.2 CHARACTERISTICS OF LOGISTICS ASSOCIATED WITH AN ONLINE SALES CHANNEL

There is a switch of context from B2B to B2C when introducing an online channel which implies that companies need to rethink their delivery methods in order to reach all customers. The shift of responsibility over the last mile of transportation for a product from the end-consumer to the suppliers implies additional costs. As seen in the interviews, there has been a power switch from the actor supplying the wholesalers to the consumers. They are now the ones whose demands are dictating the characteristic of the delivery. E-tailers are using logistics as a mean of competition and are often offering deliveries for prices that are not reflecting the actual cost, deliveries that are flexible in time and quantity and within time frames that are not profitable.

Returns of goods is another phenomenon that now LSPs handles to a larger extent than for traditional retailing. In the literature and in the interviews it was noticed that the management of those is both costly and has a great importance when it comes to customer satisfaction. Companies acting in multiple channels have an advantage when it comes to returns, since they can use their physical stores for handling returns and thus keeping the customer satisfied whilst having a cheaper return transportation. However, for companies that do not have their own physical stores, it is more complicated to make the goods go back through another channel than it came from originally. In one interview it was said that it is too early right now, but it may be possible in the future, to think of a retailer selling several brands handling the returns. This despite the complication, so it could be worth keeping an eye on that if the number of returns increases.

7.2.1 Trends within Logistics of Home Deliveries

All information gathered, from both literature and empirical findings, point in the direction of an increase of e-commerce in the near future. Data from the past years show that e-commerce has already increased, and as it seems, the growth will continue. Interviews showed that this was indeed the largest trend and that all other trends within last mile delivery is dependent, in some way or another, on this increase. There are several other trends directly

linked to the increase of e-commerce, as shown in figure 23, which has been found through the empirical findings as well as the literature research.

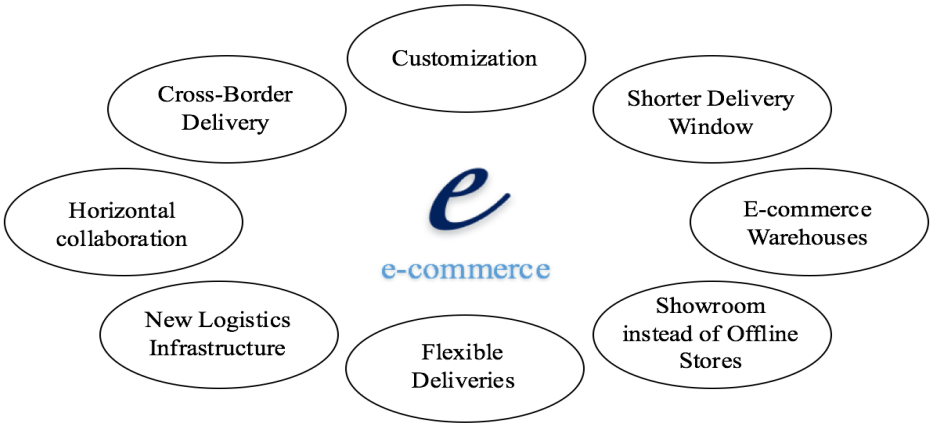


Figure 22 - Trends within logistics of home deliveries that have been found in this thesis

- **Shorter Lead-Times and Delivery Time-Windows**

  Most of the respondents from LSPs explained that they saw an increased demand for shorter lead-times both from their customers and the consumers. They also saw an increased demand for shorter delivery windows as well as increased flexibility in delivery address and time. Consumers and customers demand for shorter lead-times, but that requires a higher price and less flexibility for the LSP. In other words, trends point towards a higher demand for flexibility in delivery from the consumer side.

- **Flexible Deliveries**

  The costumers are not the only ones that wanted flexibility but conversely the LSPs as well demand for a higher flexibility in deliveries to enable optimization. Yet, consumers today do not understand the actual price for last mile deliveries, as noted in the interviews and as mentioned before, companies use a marketing strategy to offer free home deliveries in order to gain customers in a tough competition. That is a contributing factor to why consumers lack knowledge of the actual cost as they focus on the removed intermediary. An intermediary who normally would take a part of the marginal. However, for products with characteristics similar to TENA's, the order fulfillment cost is still expensive.

- **Customization**

  As internet enables a large availability for customers, Thomas and Jose (2015), argues that we will see an increased demand for customization of products and services as well as an increased demand for a larger product range. The social customer further evokes this need.

- **E-Commerce Warehouses**

  Trends found in the literature show that the goal is to achieve high service and low cost at the same time, which stresses the use of a state of the art logistics system. E-commerce demands a higher warehouse capacity which is more difficult to plan for and further stresses the need of a new logistics system. This system would be dependent on logistics centers with different characteristics than traditional warehouses. These new centers should be designed for e-commerce, with a higher product variety and layout for picking as if in an offline store. Many of the respondents as well argue that the future for warehouses will be separate solutions for traditional retailing and e-commerce. Furthermore, they point out that more and more warehouses will be automated in order to increase efficiency in picking and packing. As of today, many multichannel actors have an e-channel that is relatively small and that is therefore not handled completely separated. However, as these channels are prone to grow fast, it is important to be proactive and to make changes that are in line with the overall goal when the tipping point is reached. In the interviews many argued that we will see more warehouses outside of the cities with increased use of consolidations and logistics centers close to cities in order to repack and decrease cost by using economies of scale.

- **Horizontal Collaboration**

  Another trend that has been noted from the empirical study as well as in the literature is that companies most likely will experiment on how to collaborate horizontally in order to decrease logistics cost. This means sharing space in warehouses as well as using merged deliveries. From the example with seven different vehicles in the findings from the interviews, one can conclude that with an increase of e-commerce, companies cannot exclusively deliver their products to their customers as it would be less cost efficient and decrease customer

satisfaction. Instead initiatives as ELUPEG and CO3 are trying to benefit from more efficient capacity utilization moving in the direction of horizontal collaboration.

- **Showroom instead of Offline-Stores**

  The interviews indicated that offline stores will be switched to smaller premises that will function as showrooms. These showrooms will enable customers to experience the product beforehand the purchasing as well as trying on different sizes. In other words, the use of showrooms will most likely decrease the overall return rate on e-commerce as well as increase customer satisfaction. This will increase the benefits of having a physical store. For incontinence care products the offline store could function as a place where customers can have expert contact and help and where the customers can see the products, quite similar to what the customers can do today at the pharmacy.

- **Cross-Border Trade**

  Although cross-border trade has been described as rather uncomplicated for countries within the EU in the interviews and that there will be less borders in the future, there are still barriers such as legislations in different countries, taxes, etc. that makes cross-border trade complicated. Moreover, making deliveries to several countries from one country does necessarily not cause economies of scale for the transportation.

7.2.2 What TENA could do to Decrease Cost of Logistics

In the interviews and in the literature there has been recommendations and factors that could contribute to the logistical success of an e-channel. From both interviews and the survey it has been concluded that customers to LSPs can themselves affect the prices they get. Also, some of TENA existent and possible advantages in a purchasing situations has been highlighted.

That last mile deliveries implies additional costs for both warehousing and transportation has emerged from both the practical framework and the empirical study. Interviews show that the cost of logistics is about twice as high for last mile deliveries. The cost is distributed with around half for warehousing and half for transportation. Fernie and McKinnon (2004) incline that there are some characteristics for home delivery initiated by online sales that change the way LSPs operate. These characteristics correspond to the empirical result of this thesis and

the cost drivers found are presented here, firstly in an overview in figure 23, and after in text followed by how the cost could be reduced.

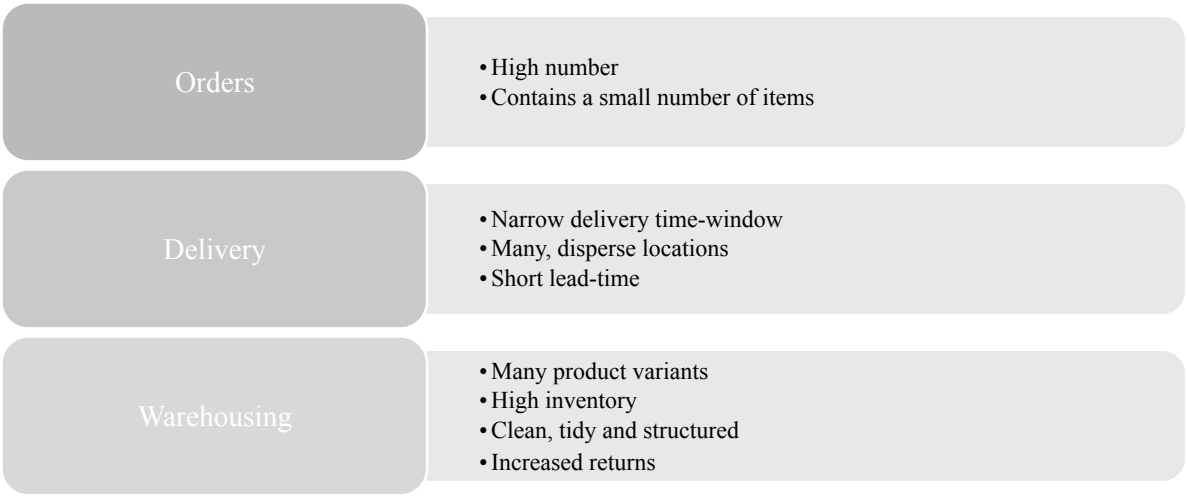


Figure 23 - Cost drivers in last mile deliveries

Online sales switch the traditional business customer to the private customer at home. The demand is fluctuating and consists of many orders that contains a small number of items, often just one, too many different delivery locations. When eliminating an intermediary, the retailer, it is not only the cost of handling the smaller goods that complicates, the packages also need to be presentable to the end consumer which increases the need for neat handling and demands a more structured warehouse. Returns require additional transportation, inspections, eventual modifications and packaging, storing and redistribution which sometimes is that costly that the products instead are thrown away. For traditional retailing the fluctuations are smaller, the orders larger and they are destined to a smaller amount of places. In conclusion, e-channels logistics costs are normally higher because increased order handling, picking and packing, higher inventories, difficult planning, higher transportation cost per product and a higher number of returns. This could be improved by an increased number of collection points, by subscribing customers and by collaboration:

- **Collection Points**

  One can conclude that less delivery locations that comprise more orders would decrease the cost of transportation. That can be achieved by delivering to collection points instead of to the door, this is already encouraged by incentives but further incentives could be created.

- **Subscription**

  As understood, the variations in demand and locations creates difficult planning and overcapacity. In order to smoothen and stabilize the demand variations and to enable a more optimal planning, subscriptions should be encouraged. This is mentioned in several of the interviews and would imply that customers need to put less effort in to ordering. It would also mean that routes could be planned for much earlier since the locations and orders are known in advance, analogously the capacity planning for production and warehousing is simplified and more optimal. Still, there are individual variance and the subscriptions should therefore be adaptable so that they do not result in an in involuntary buffering eventually creating fluctuations.

- **Collaboration**

  In the interviews it was mentioned that TENA could look for a competitor to share the logistics activities with in order to increase the volumes treated and transported in order to achieve economies of scale. It was also mentioned that they should look for a partner that had similar flows, for instance a food deliverer, in order to decrease the costs. This is a good way of reducing the transportation cost per product and to attract customers.

  Furthermore, increased flexibility in delivery time-window makes the routing process easier to optimize. In other words, longer lead-times for delivery as well as more open delivery time-windows increase the possibilities for the LSP to keep costs low.

Today the numbers of orders are quite small, that is however, likely to change. In the future and then TENA should use and evolve the factors that make them attractive as a customer for LSPs. In addition to collaboration, subscription and deliveries to collection points TENA could emphasize the following factors:

- **Growing Target Group**

  The target group is, due to demographic change expected to grow and so is its purchasing power. That means that these customers are likely to buy more products online in the future which enables consolidation. Apart from being a growing group, they are also stable customers since incontinence is, except for

the lighter forms, chronic. The need for the product therefore stable both in terms of needs and in amount.

- **Long Delivery Time-Window**

  TENA offers a product that has an older customer segment who are much more available than others since they are more prone to be at home during the day. This means that the LSP can have a more flexible delivery window and utilize low demand hours for delivery, during these hours are also the salary for transporter normal rates, as is usually not the case during weekends and nights.

- **Very Few Returns**

  For many types of products, the return rate is around 10-40 percent as stated in the interviews. For TENA it is about 1,5 percent which is in comparison very low. Few return means less extra work and simplifies capacity planning making it a notable strength.

7.2.3 What to Consider when Choosing Logistics Service Provider

In 2006, Coltman, et al. stated that the three most important criteria where reliability supply chain flexibility and professionalism. That can be interpreted as those things were not taken for granted at the time and if the LSP did not perform as wanted, or possibly the relationships weren't as functioning as they could have been. This was early in the e-commerce context and it is known that many companies have not been efficient there until now.

Today information systems, financial performance and past performances are qualities that were considered more important. Quality has been more or less prominent during the years and is now still not as important as delivery-time and cost, which is surprising but goes along with what Holmgren said about customer loyalty. It is expensive changing and customers tend to avoid that that unless they are very unsatisfied. It is also reasonable to assume that there are different criteria that matter for b2c and b2b. Here the most important criteria where completion time, cost and accurate deliveries showing that now, when the trust is higher, what is sought for is more performing systems in order to be competitive. One reason for that e-commerce draws additional attention to delivery factors is that the consumer is directly affected by it in a B2C-context. Whereas in a B2B-context, a delay would usually not affect the consumer.

As Furness (2015) claimed, it is important to keep the flexibility, especially if the connection is to the end-consumer and as the characteristics of e-commerce involves changing demands. So it is important, as many LSPs have stated, to avoid going to much on price and instead try to create a competitive advantage by choosing a new solution. From the interviews, it was also clear that cost was an overall important factor but that also other factors influenced the choice of LSP. Some of the respondents claimed that their customers chose them because they are able to offer the right services at the right time. They argued that being close to infrastructure is very important, as well as offer the right solution for the customers. Another respondent claimed that is was about cost and quality, and hoped that quality is the most important one, though knowing that is not always the case.

Another issue that has started to appear on the agenda is the environmental concern. The respondents argue however that it is mainly the larger companies that have the economic possibility and pressure that evaluates logistics services provider after this factor. However, in the end, they say that it is not the cornerstone in the decision making. This is, however of academic interest shown in different scholarly articles and was also discussed in the expert interviews. In the literature an interest around City Logistics could be identified and it is likely that greater cities will influence the logistics and the actors in such areas to be more proactive.

So given the above reasoning a company in the incontinence care industry should, when buying logistics services for the last mile delivery, look for a service provider that offers them a new flexible solution where completion time, cost and accurate deliveries are guaranteed. It is also worth letting the LSPs come up with new solutions in order to assure a lower cost.

7.2.4 The Influencing Factors of the Purchasing Process

In the purchasing process each step is dependent on the former step, making the first step the most important. As it is a service being bought it is even more important that the purchasing company has a clear vision of what the objective with the purchase is as claimed in the interviews and by van Weele (2010). Giving clear specifications enables getting what is sought for, unless there is a possibility better solutions can be found by an external party. Then specifying the objectives but avoiding being too specific could be better as was mentioned in the interviews. On the other hand one respondent explained that it would create more complexity in evaluating the alternatives. However, it is still possible to narrow down the possible candidates and then evaluate the different solutions.

The most important factors influencing the different steps in the purchasing process as was mentioned by Rogerson (2013) in the theoretical framework with additional input from the interviews are shown in figure 24. The figure is an overview on how a company in the incontinence care industry with similar characteristics to TENA should meet the influencing factors.

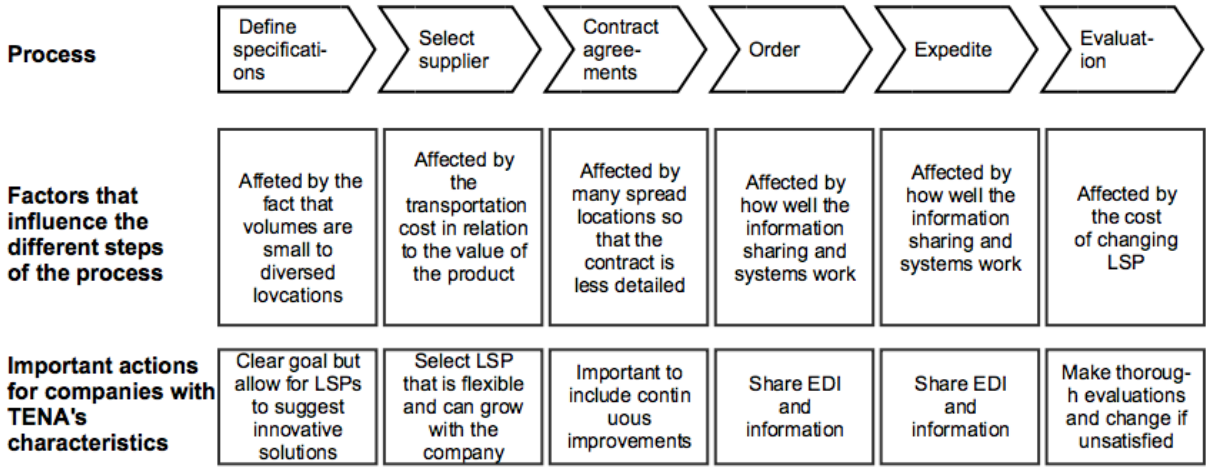


Figure 24 - Concerns for a company with TENA's characteristics during the purchasing process

7.3 SPECIFIC RECOMMENDATIONS FOR TENA'S WEBSHOP DURING THE PURCHASING PROCESS.

Based on figure 24, the following subchapters explain the recommendations for how TENA should work during the purchasing process, in order to increase service and decrease cost when choosing and maintaining a LSP for the webshop's last mile deliveries.

7.3.1 Define Specifications

In order to establish accurate specifications, TENA should in an initial state make an extensive market analysis on their customer segment to understand their demand. Furthermore, an investigation of competitors' solutions and offerings needs to be evaluated. In order to understand what the customers really demand for, TENA also needs to take initiatives and not solely rely on the information gathered directly from consumers. For example, many consumers may prefer subscribing to the products, but may not come up with that idea by themselves.

TENA should decide which specifications that are fixed and which that are changeable. LSPs are looking for as flexible solutions as possible and they want to be able to modify the solution to enable synergies in their existing flow. If TENA has looser specifications, they

offer them a larger possibility to impact and furthermore, decrease the price setting for both them and TENA.

7.3.2 Select Supplier

Using the bargain powers make them more attractive to LSPs, and may also decrease cost. They should make sure to have a close collaboration with the LSP to make sure that they together find the most suitable solution for both. Using a LSP that has deliveries within the same customers' segment and/or have high value, heavy products can be of gain for TENA. They should also make sure that they present which specifications they can change in order to decrease. It is also important to look out for new innovations and more unconventional methods of deliveries as this is a field in movement today, as was noted in the survey where respondents stated that working with innovations decreases the cost of delivery.

By having a close relationship with the LSP, they can share information on cost drivers. If the focal company sees that a cost driver is indeed a specification that is not important, they should modify it to eliminate unnecessary costs.

One interesting area is collaboration to reduce the excess capacity. Yang, et al. (2015) discuss the phenomena and found that in order to optimize warehousing and transportation, companies would gain on collaborating. Van Breedam (2016) claimed that it is the most optimal way to design a supply chain. Many of the respondents agree that it is a good solution, but also raise a concern that it might create a monopoly and it would be difficult to choose which company that should be in charge. Keeping this in mind for future selections can be beneficial.

7.3.3 Contract Agreement

Since TENA has got customer at many different locations it is important to find a way to still be detailed in the contract to keep track of costs and to leave room for continuous improvements as the customer-base is changing and so are the different solutions.

7.3.3.1 Pricing

A part of the contract agreements is the pricing. All respondents argue that in order to decrease cost for logistics services, a more collaborative relationship needs to be established between the focal company and the LSP. A collaborative relationship would encourage the parties to work closely in order to find a solution best optimized for both.

7.3.4 Ordering and Expediting

It is important to share accurate and extensive information with the LSPs at all times since the order intake fluctuates and is hard to forecast. The best possible way is by having an EDI coupled system where information is automatically shared between all parties involved in the logistics. All respondents of the survey found that important, however, many companies lacked when it comes to information sharing. For many LSPs that is a minimum for using them as a supplier.

7.3.5 Evaluation

Evaluation is more important in e-commerce since the market is changing. In order to stay in the forefront TENA should keep track of new innovations and new collaborations between companies with whom they can achieve synergies. The evaluations need to be done regularly in order to ensure that the LSP is the best choice in terms of cost and innovations. When making changes it is important to remember the overall goal for the future so that the new solution is in the right direction.

8 CONCLUSION

The purpose of this thesis is to investigate how a company, selling incontinence care products through an online sales channel in Sweden, can affect the cost of last mile deliveries, before and during the purchasing process of logistics services. In order to arrive at the final purpose, the digital market for incontinence care products in Sweden was estimated. Built upon that estimation were the propositions for how costs can be reduced before and during the purchasing process. These areas are here concluded.

The digital market in Sweden for incontinence care products is expected to grow. Currently, it is a technologically advanced market with high Internet and finance card penetration, high education level, a well-functioning ICT-infrastructure and a generous reimbursement system. Nevertheless, an increase of available venture capital and internet usage would be causing a higher increase. The demographic change further enlarges the market and the number of orders is expected to increase with over 500 percent by the year of 2025. That estimation is careful and thus probably lower than the actual outcome. Factors that were not quantified will also influence the future market. The channel is currently rather new and giving it time could change the base used for the forecasts. Analogously, the consumers in the future will be more used to online purchases. Further, if home deliveries could bring value of its own, for example by delivering consolidated goods on weekly basis, consumer can save time instead of spending it at home, waiting. An increasing market necessitates evaluations of the value proposition as well as new solutions.

In order to internally reduce cost, the company should aim to be more transparent in their pricing and start creating further incentives for consumers to choose collection points. Equivalently, subscriptions could solve problems such as fluctuations, capacity planning and routing, well in advance. It would also simplify collaboration with other companies delivering to the same target group, with the same frequency. Collaboration for warehousing and transportation could be beneficial if finding the right partner and could also be used in the purchase of logistics services as bargain power. The same goes for the above-mentioned improvements and with their characteristics such as; having a stable, growing target group that allows a large delivery time window and have very few returns. Having and using their bargain power in purchasing situation of logistic services is one way of reducing cost.

When looking for logistics service providers, the company should consider them who can offer new flexible solutions with short completion time, low cost and accurate deliveries. Whilst creating specifications for logistics services, the overall goal is important as well as not being too specific in order to leave space for different solutions. The company should also early share as much data as possible. Important to remember is also that evaluation of logistics service provider should be made regularly, even though the channel stands for a small share of total orders and even though the channel might not have the primary purpose of being the most profitable channel on its own. The evaluations should aim at creating solutions that go along with the long term goals of the company. When the market increases, then the purpose of the channel might change, evoking needs of being more profitable.

These conclusions are drawn for TENA’s webshop in Sweden and for companies with similar characteristics, based on market information that is very carefully used. In order to have more certain conclusions a thorough investigation of how the market can grow with the help of similar markets should be performed. Further research could also concern new innovative solutions and the actual result of using them. Moreover, additional research could include several countries to find out whether a common solution is beneficial.

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APPENDICES

In this chapter, all appendices used in this thesis is presented. Firstly, the questionnaire sent out in the survey is presented followed by a model, written by Taylor, et al. (2015), which has been used in order to create a semi-structured interview protocol. After follows all final questionnaires used in all the interviews in alphabetical order based on the respondents' surname.

APPENDIX A

Questionnaire for the survey:

1. Which continents do you act on?
    a. North America
    b. South America
    c. Europe
    d. Australia
    e. Asia
    f. Africa
2. What is the size of the company?
    a. Large
    b. Medium-sized (<250 employees, <EUR 50 M turnover)
    c. Small-sized (<50 employees, <EUR 10 M turnover)
    d. Micro-sized (<10 employees, <EUR 2 M turnover)
3. What kind of logistics service provider are you?
    a. 3PL
    b. 4PL
    c. 5PL
    d. Other
4. What is the percentage share of e-commerce today?
    a. Over 50 %
    b. 20 – 50 %
    c. 10 – 20 %
    d. 5 – 10 %
    e. 0 – 5 %

5. How do you predict that this number will change the next five years?
    a. Increase markedly
    b. Moderate increase
    c. Stagnate
    d. Decrease
    e. Other
6. For customers with multi-channel distribution, do they have separate contract agreements/requirements for each channel?
    a. Yes, mostly
    b. Yes, sometimes
    c. Yes, but rarely
    d. No
    e. Other
7. What type of information do your customers share?
    a. Point of sales
    b. Forecasting
    c. Historical sales
    d. Other
8. Would information sharing from customers decrease the cost of warehousing, transportation, etc.?
    a. Yes
    b. No
    c. Other
9. Would your process benefit from getting POS data from customers?
    a. Yes
    b. No
    c. Other
10. How important is working with innovations?
    a. Very important
    b. Important
    c. Not important
    d. Other

11. Do you see that working with innovations can affect your operating cost now and/or in the future five years?
    a. Yes
    b. Maybe
    c. No
    d. Other
12. To what extent can a customer affect the price that they pay for logistic services through contract agreements, requirements, etc.?
    a. Prices are individual and affected by the agreements
    b. To some extent
    c. Not at all, the rates are set

APPENDIX B

The steps that were used in order to generate the interview protocols used in this thesis are here presented. The steps are based on the theory written by Taylor, et al. (2015).

1. Pick a topic that is interesting to you

It is of importance to choose a topic that interest the authors in order to create a good cooperation between the interviewer and the person being interviewed.

2. Research should guide your questions

Before even writing down questions, one needs to be more familiar with the type of persons that is about to be interviewed. Articles regarding the type of person should be read in order to get a better understanding in how the person may react.

3. Use a script for the beginning and the end of your interview

Before beginning the interview there will be lots of information that all participant should be informed about likewise. The information in the protocol should prompt you to share critical information and details about your study.

4. Questions should be open ended

The intention is to pose questions that result in discussion, the goal is to uncover as much as possible about the participant's perspective of the question.

5. Start with the basics

Start with basic questions such as information about the interviewee in order to warm him or her up. This method creates trust between you and the participant. The questions about the participant should be based on literature regarding the participant. If an interview is to be conducted with a supply chain manager, questions should be based on theory regarding supply chain management.

6. Begin with easy to answer questions and move towards ones that are more difficult or controversial

The idea is to slowly build confidence so that when the more difficult questions arrive, the interviewee has more trust in you as an interviewer.

7. The phrase “Tell me about…” is a great way to start a question

This phrase makes it clear that the interviewee is supposed to elaborate and talk for a while. The questions invite him or her to discuss the topic you chose.

8. Write big, expensive questions

Writing big expensive questions can lead the interviewee to places you did not see before and these are often the things you have most use of. Furthermore, using small detailed questions narrows the possibilities for the interviewee to put their own perspective into the answers.

9. Use prompts

For each questions write down prompts so that each answer can be guided in the right direction. When asking big, expensive questions the answers may end up anywhere, with prompts, the interviewer has a possibility to direct the questions.

10. Be willing to make “on the spot” revisions to your interview protocol

Be ready during the interview to ask additional questions based on the answers you have received from the interviewee. These questions can in the end be the most valuable in order to draw conclusions.

11. Do not make the interview too long

The time of the interview should be adjusted after the interviewee. Furthermore, an interview should not be conducted for too long time as this only creates a lack of interest from the participants.

12. Practice before the actual interview

Make sure to practice the questions on someone else before the actual interview.

13. Make sure to set up a second interview short after the first one

In order to make sure that all questions have been properly answered, a second interview should be set up in close relation with the first one. After summarizing the first interview, some questions may not be clearly answered. Furthermore, new questions asked to other persons in interviews after your first one may be of interest to pose to each person interviewed.

14. If needed, clear the interview with your university's Institutional Research Board (IRB)

Furthermore, Taylor, et al. (2015) continue by presenting useful tips before, during and after the interview;

15. Start with your script

Follow the script during the whole interview, even though you have conducted the same interview several times before.

16. Collect consent

Before the interview is conducted, make sure that the interviewee has plenty of time to read through the questions. Collect their consent and make sure that they sign the consent form, if not, do not conduct the interview with this participant.

17. Record the interview and make small notes

Make sure to not take longer notes during the interview, it will take up both your and the interviewee's valuable time. Record the interview and note only your thoughts.

1. Arrange a quiet calm location for the interview
2. Make sure that all participant block of enough with time
3. Have a genuine interest in the participants
4. Use basic counseling skills

It is valuable to read on counseling techniques in order to improve the way in which you listen and ask questions.

5. Keep it focused

Make sure to stick to the script and do not lose yourself if the interviewee strays too far from the questions. Your prompts and script is there to guide you through the interview, remember that you are in control.

6. Listen
7. End with your script

Make sure to use the same ending to each participant in the study. It will contain important information and as an interviewer you are sure that all information is shared before ending the interview.

APPENDIX C

All questionnaires used during the interviews is here presented in alphabetical order based on the respondent's surname.

Andersson Dan

- How do you think that the growth of increased online sales (and deliveries) will affect the purchase of 3PLs and the cost?
- What other trends do you think will influence the purchase process and the requirements for 3PLs?
- What are the trends today, according to you, when it comes to buying patterns?
- If an e-commerce logistic solution is not working as it is what you think about the actions to either centralizing the volumes to a Nordic solution, or to push customers into subscribing.
- Do you think it is possible to push customers into subscribing?
- Why is it unusual in Sweden that the purchasing of logistics services involves adaptation to a new solution that the providers comes up with?
- How about taking in a consultant to examine the solutions, someone who is an expert on the area?
- For a Nordic solution do you think that there could be any concerns with cross-border deliveries? What are the implications? What are the legal risks?
- Why is that?

Christensen Anker

- How many factories in Europe do you import incontinence care products from?
- How are you planning for the new webshop storage in Falkenberg?
- Who is responsible for refilling incontinence care products for the webshop and how is it done?
- Will you be responsible of buying transportation for the webshop when the inventory is moved to you in Falkenberg?
- How will you handle returned goods at Falkenberg from the webshop?
- How are your inventory levels? Service level?
- What logistic partners do you use in each country?
- What is the capacity for the Falkenberg factory?

- What is the difference in the processes (marshaling, routes, etc.) For home-delivery and other destinations.

Ekman Fredrik

- How do you think demographic changes and the increasing age distribution will affect the incontinence care market?
- What are the trends, according to you, when it comes to buying patterns of your customers?
- How many customers return their incontinence care products after buying them online and what do you think about that? How do you handle returns? Do you think that an increase of online sales will result in more returns?
- Does your customer prefer express delivery or are deliveries on a more planned basis? How do you think that this will change in the future?
- How are your customers distributed in age etc., webshop/ traditional? Has that changed a lot?
- Do you experience that your younger customers are more open towards online sales channels? What do you believe is the major reason to shop online for your customers? Discretion, convenience?
- Do you believe that the customers shopping online would agree to only collecting their products at pick-up points?
- Do you experience that the demand from your webshop is stable or fluctuating?
- Which channels do you operate in to reach your customers?
- Are you using more than one channel to reach another customer segment solely or to what degree is it used to enhance multichannel use from you customers? (For example search for information online and purchase in store, etc.)
- Does the launching of your webshop create channel cannibalization?
- How do you handle price coordination, price setting and forecasting for your online sales channel?
- What is the difference when it comes to delivery, warehousing, etc. for you different channels?

Gibel Tom

- How is the purchasing of logistic services looking today in Sweden compared to the countries?
- Is there any difference for the customers when purchasing LSP for online sales channels as opposed to traditional ones?
- How do you foresee the growth of home delivery initiated by online sales?
- What is the price difference between ecommerce and traditional retail sales?
- Can customers affect their prices by any actions? By size? By negotiations?
- What do you think about returns, are they considered to be a problem? Are you currently working on a way to reduce them?
- In what way are you working on making deliveries more efficient? For example bringing something else back.
- How is DHL My ways working?
- What is most important for your customer when evaluating you?
- Will the price for logistics change in the future?
- What are the most important trends for logistics providers in general and more specific within home deliveries of goods purchased through an online sales channel?
- How is the climate for logistics providers today?
- Any specific thoughts for low value, bulky products

Halldorsson Arni

- What is the difference, according to you, in purchasing logistics service for traditional channels and for e commerce channels?
- Do you think that being able to return the good affect the willingness to buy?
- Do you think it makes a big difference being able to return it a a physical store?
- But if the store is not their own?
- What do you think they can do to affect their cost of logistics?
- What to think of when defining specifications, should they be flexible or well defined?
- What would the difference be if they had subscribers?
- Can't that be a problem if the customers compare with other competitors that offer everything to the same price?
- We are now already talking about trends; do you see any other trends?

Holmberg Anders

- How is the purchasing of logistic services looking today in Sweden?
- In a tender, how does it work?
- How often are the prices corresponding to what you agreed upon?
- Are they correct?
- Is there any difference when purchasing LSP for online sales channels as opposed to traditional ones?
- How do you foresee the growth of online sales?
- How is the growth of online sales affecting companies and what they are looking for in terms of logistic services?
- How is the increase of online sales affecting you?
- What is the price difference between ecommerce and traditional retail sales?
- In a supply chain perspective, is it really more expensive if you do it as opposed to if it is done in an earlier or later stage?
- Is that valid for all product?
- Can customers affect their prices by any actions? By size? By negotiations?
- What is most important for your customer when evaluating you?
- What kind of information do your customers share and what would you prefer? How do you plan?
- Forecasts, point of sales?
- How do you think that the future environmental legislations will affect logistics and the prices associated?
- How many customers return their products after buying them online today?
- Is this considered to be a problem for you?
- You said that the highest cost of the distribution was in the warehousing activities, how will warehouses of the future be?

Jarnegren Carl

- How is the purchasing of logistic services looking today in Sweden compared to other countries?
- Can you see that that is changing?
- Is there any difference when purchasing 3pl for online sales channels as opposed to traditional ones?

- How do you foresee the growth of home delivery initiated by online sales?
- What is the difference in growth for the different channels for you?
- Is it also easier to reach new customer?
- What dimensions can you deliver?
- What is the price difference between ecommerce and traditional retail sales?
- Can customers affect their prices by any actions? By size? By negotiations?
- Do you think that would affect the number of returns?
- Cant it be a competitive disadvantage to offer only subscription if others are not?
- What is most important for your customer when evaluating you?
- Is there a limit for how small the volumes can be for a customer?
- What kind of information do your customers share and what would you prefer? How do you plan?
- Will the environmental concerns affect prices in the future?
- What are the most important trends for logistics providers in general and more specific within home deliveries of goods purchased through an online sales channel?
- You said that the highest cost of the distribution was in the warehousing activities, how will warehouses of the future be?
- Do you think low value bulky products is suitable for an automated warehousing system?
- What do you think about centralizing the distribution for example the Nordic countries?
- Isn't it also dependent on where they have most volumes and the best working system etc?

Kolderup-Finstad Nikolai

- How is the purchasing of logistic services looking today in Sweden?
- How do you foresee the growth of online sales?
- How is the growth of online sales affecting companies and what they are looking for in terms of logistic services?
- How is the increase of online sales affecting you?
- What is the price difference between ecommerce and traditional retail sales?
- What kind of services are you offering?
- …Fulfillment, 4PL?

- What is most important for your customer when evaluating you?
- How do you think that the future environmental legislations will affect logistics and the prices associated?
- How many customers return their products after buying them online today?
- Is this considered to be a problem for you?
- Do you think that an increase of online sales will result in more returns?
- Do you have any cooperation with other logistics providers?
- What are the trends today, according to you, when it comes to customer buying patterns?
- What will be changed in the future warehouses?
- The products we are talking about do not have appropriate properties for automated warehouses- what else can they do to cut costs?
- Do you think that collaborating horizontally between logistics provider?

Rogerson Sara

- What are the trends today, according to you, when it comes to buying patterns?
- Even though an online sales channel can reduce cost in some areas, the logistics can be costly. Especially for a company with low value products. Do you have any thoughts on how to, with the purchasing process, affect this?
- What do you think about syncing the flow of TENA with other products?
- How do you think that the future environmental legislations will affect logistics and the prices associated?
- What do you think about merging countries together in order to have a centralized solution?

Stridh Viktoria

- Could you please describe the purchasing situation of logistic services? How often are they revised, who performs the evaluation, and does it differ for home delivery and online sales?
- What criteria are most important for selection, and for evaluation of logistic suppliers?
- Do you have any supplier strategy for purchasing such as reducing the number of suppliers or increasing them? How many are your suppliers?
- What is the kind of relationship you would want and what do you have? (Meaning closer, collaborative or more distant).

- How important is the transportation cost and cost related to the purchase of logistic services in relation to the value of the products?
- Regarding the size of the shipments, what size are they and do they vary?
- How do you think that the growth of increased online sales (and deliveries) will affect the purchase of logistic service providers and the cost?
- Schenker suggested that companies with products like yours should ask your logistic service providers to handle your goods together with someone else's, like a competitor, which has similar goods in order to lower the cost. What do you think about that proposal?
- Do you use joint-delivery for your different channels or are they completely separated?
- Do you use the same warehouses for your different channels?