



JÖNKÖPING INTERNATIONAL
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Introducing the home delivery of prescription medicine in Sweden

An analysis of private pharmacies and their supply chains

Master Thesis in Business Administration:

International Logistics & Supply Chain Management

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Abstract

Logistics and Supply Chain Management has become a vital component in every industry in the globalised world. It is a key strategic tool for companies to deliver services and resources to stakeholders and a source of competitive advantage, consequently any failures to optimise or develop a supply chain can lead to a loss of customers, revenue and market share.

The healthcare industry, specifically pharmaceuticals, is one such industry which is highly dependent on a stable and secure supply chain to deliver both products and services. However, on an extended level the pharmaceutical supply chain is often described as less mature than the automotive or aviation industry's - both the part of the distribution channel connecting manufacturers to healthcare providers, as well as the one linking those to patients accessing medicine via authorised pharmacies.

In several countries this was at least partly due to underdeveloped Information Technology (IT) infrastructure provided by the national health care providers. IT is often the driving force and backbone of any supply chain infrastructure - without the ability to compute vast amounts of data in real-time it becomes difficult for a supply chain to remain efficient and functional.

Sweden is among the countries, which have upgraded their IT, adapted their law and thus allowed for the home delivery of sensitive prescription only (PO) medicine to patients which is, for example, already in use in England.

To analyse the circumstances for an introduction of home delivery and its implications for the supply chain a dual case study adopting an abductive approach was carried out on both the corporate and retail level of PO medicine administration - namely, private pharmacy chains in Sweden, as well as a significant player in the pharmaceutical logistics industry.

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I Introduction

This chapter provides a brief summary behind the key elements of the research subject and establishes the main problem that the study aims to address. There is also a review of key terms and the limits that this study faces in light of the subject being analysed.

I.1 Background

The modern pharmacy is an extension of the service available to patients by medical providers, such as general practitioners (GPs) and hospitals. It is the main distribution channel for pharmaceutical products and thus plays an important role in the health care system of a country. Pharmaceutical products can be grouped firstly into medicine that is termed Over The Counter (OTC) (“Läkemedelsverket - Medical Products Agency,” 2007) and needs to be used to treat generic ailments in an area that is suitable for self-care, because it is easy for the patient to self-diagnose. This group of medicine does not require the professional assessment or diagnosis from a medical practitioner and permits a patient to decide on the treatment by themselves, hence not necessitating a prescription.

According to the Food and Drug Administration (2014), the second group of pharmaceutical products, termed Prescription Only (PO) medicine, should be used by one person to mitigate, cure, treat or prevent disease or assist with more acute health concerns. They require a prescription to be administered by a GP or other suitably qualified healthcare professional and for the patient to go to a pharmacy so that the medicine can be collected. PO medicine always needs to be used with prior instruction and distributed in certain quantities over a recommended period of time because there are serious implications when used incorrectly (NHS Choices, 2012) which means that it is important to differentiate between OTC and PO medicine, due to the fact that they fulfil different purposes and face certain restrictions when it comes to their purchase or dispensing.

In nearly all cases these medicines are available to the patient via a pharmacy. Although very little has changed with regards to the distribution of PO medicine, it can be argued that the supply chain behind it has become more sophisticated as the desire to redefine the role of pharmacies with regards to health promotion, prevention, aspects of disease management and monitoring (Kanavos, Schurer, & Vogler, 2011) gains traction. Pharmacies are now seeking to improve their competitive advantage developing their direct relationship with the end patient using enhanced product service delivery via efficient and effective supply chain management.

Slack, Chambers and Johnston (2010) contend that the objective of supply chain management as a service is to meet and satisfy the needs of the end customer by supplying appropriate products when they are needed. Services, similar to industrial developments, are contributing to the global economy in ways that have never been experienced before and the supporting assistive IT used to manage this is advancing as well (Breen & Crawford, 2005). Improvements in the field of IT allowed the service providers to introduce so called Electronically Transmitted Prescriptions (ETPs) to the market, which shortened and eased the prescription process, as well as demand forecasts.

The mentioned improvements in IT and the increase in proliferation of private access to the internet (Hallowell, 2001) have also benefitted the rise in the adoption of e-commerce in business to consumer (B2C) companies, and more specifically enabling the legal purchase and home delivery of medicine via a pharmacy’s online shop. While this is already common practice for Over The Counter (OTC) medicine in Sweden it still is an issue to

solve completely when it comes down to PO medicine, which constituted the biggest segment in sales value in 2012 (Sveriges Apoteksförening, 2013). At the time the study was carried out, the patients' selection of providers offering home delivery of PO medicine was very limited and not yet implemented by any of the leading bricks-and-mortar pharmacy chains, except the former monopolist Apoteket AB.

In the 1970s, the formerly private system of pharmacies in Sweden was centralised and placed under a monopolised state control with the company name of Apoteksbolaget AB (Lindberg & Adolfsson, 2007). Following Sweden's national elections in 2006, a new government was formed who decided to sell numerous state-owned holdings in companies and started to deregulate certain markets that they believed could benefit from improved competition. One such was the pharmacy market ("Regeringskansliet - Government Offices of Sweden," 2009) which was deregulated in 2009, boasting a unique case within the Organisation for Economic Co-operation and Development (OECD) (Sverige Apoteksmarknadsutredningen, 2008).

It was stated that deregulation sought to ensure that Sweden's "equal access to pharmacy service" was available to every resident ("Oriola KD," 2012) and therewith also conserving accessibility to pharmacy in rural environments (Sverige Apoteksmarknadsutredningen, 2008). The deregulation in Sweden was followed by a significant rise of 200 pharmacies within the first subsequent year and the founding of pharmacy chains, but the aim of better access in rural areas could not be achieved (Vogler, Arts, & Sandberger, 2012). Distribution became decentralised as competing organisations sought to manage their own logistics and supply chain, beyond what had previously existed with the Swedish state.

1.2 Problem definition

Pharmacies offer an important and often vital service to patients following their initial or continued contact with a medical provider. They are the final authorised outlet who can administer PO medicine both accurately and with a high level of safety. In other countries such as England and the USA, this is provided not only via face-to-face distribution by bricks-and-mortar locations, but also via e-commerce and home delivery solutions. Such a service has been introduced successfully via the National Health Service (NHS) in England and the USA where the Federal Trade Commission has noted that mail-order pharmacies have become important and efficient low-cost distribution channels (Hyman, 2005).

While the e-commerce trend, boosted by the well documented business advantages of multiple channel distribution (Coelho & Easingwood, 2004) - especially home delivery - (Simchi-Levi, Kaminsky, & Simchi-Levi, 2008), has slowly been encroaching upon private pharmacies in the aforementioned countries where the home delivery of PO medicine has become common practice, in Sweden it remains in its infancy. It is important to distinguish between delivery to a pick-up point and delivery to the patient's door, which is considered home delivery throughout this study. Following the deregulation of the pharmacy market the market for distance sales including home delivery of PO medicine is open to any trustworthy and registered pharmacy chain in Sweden (Sverige Apoteksmarknadsutredningen, 2008), but this market segment remained almost uncovered at the time the study was carried out. Except Apoteket AB's Mina Recept service ("Apoteket AB," 2014), the online only pharmacy Apotea AB has exclusively offered home delivery of PO medicine to patients, albeit restricted to addresses in Stockholm.

Consequently, the authors suggest that Sweden currently has a disconnect between patients' potential needs for additional methods to obtain medicine and its pharmacy chains'

ability to provide them, despite having created the legal foundations for the introduction of home delivery services for PO medicine during the deregulation in 2009 - this disconnect highlights that there would be an opportunity for said companies to offer this service. Nevertheless it cannot be taken for granted that the recent liberalisation of the market alone would prove to be a sufficient stimulus for private pharmacies to enter it, given the fact that there is no consideration of other important factors such as profitability, investment capital needed and so forth. It should be assumed that a decision to offer home delivery of PO medicine by private pharmacies would require them to adapt their supply chains in order to meet the demand.

As a result of finding scant amounts of literature and research on the circumstances under which the introduction of the home delivery of PO medicine to patients is deemed sufficient by the pharmacy chains, it has been assumed that there exists a gap in literature. This study is carried out in order to address the aforementioned gap and make a contribution towards it through its application to Sweden's private pharmacy chains. Furthermore it deals with the changes or additional resources needed to their supply chains in order to provide such a service.

1.3 Purpose

The purpose of this study is to analyse how private pharmacy chains in Sweden would deal with a possible future introduction of home delivery of PO medicine to patients. In order to achieve this it will look at the particular circumstances¹ within the pharmacy retail market under which they would add this distribution channel to their existing single channel distribution system.

Then, so as to address the supply chain management aspect, the necessary changes to the existing bricks-and-mortar based supply chain layout in order to meet the requirements of the home delivery service will be analysed.

1.4 Research questions

In order to fulfil the purpose of the study, there are two research questions that need to be asked:

- What factors would make existing private pharmacy chains in Sweden willing to include the home delivery of PO medicine in their offerings to patients?
- How would the existing supply chain layout of a private pharmacy chain need to be changed in order to be able to offer home delivery of PO medicine to patients?

1.5 Delimitations

The authors acknowledge some limitations of the study. First the purpose of this thesis is to provide a theoretical proposition as to whether or not the introduction of home delivery of PO medicine via e-commerce by existing pharmacy chains that operate bricks-and-mortar stores in Sweden would be viable. Thus it excludes other providers of such services, as online only pharmacies and state owned companies.

Second, the scope of the study is limited to the country of Sweden and its comparatively low number of pharmacy players, as well as unique legal settings, which also limits the

¹ other than legalities

transferability of the results to other areas of the pharmacy industry. Hence applying the results on Pan-European and global level would prove difficult.

Third, the existing legal framework, which is comprised of European Union (EU) and country specific laws, is not the focus of the study, but as it still affects the ability of private pharmacies in Sweden to implement and operate a home delivery service the legalities involved can only be covered when it specifically relates to the logistical aspect of the service or was named by the interviewees.

2 Framework

In this chapter the theoretical framework will be introduced. Literature in the field of logistics and supply chain management, the pharmacy market, e-commerce, as well as ETPs will be discussed and explanations of the relationship between these will be provided. Pharmacy supply chains and their distinctive features will be illustrated including the reasons for adding distribution channels, followed by the main characteristics of e-commerce and the home delivery as a service. To conclude the theoretical framework the outline of ETPs, which are facilitating PO medicine processing are explained.

2.1 Pharmacy supply chains and the market

The market situation the pharmaceutical sector finds itself in is already highly complex in general, due to the high number of stakeholders involved, which significantly exceeds the channel partners in the supply chain. Not only can patients be regarded to show different characteristics compared to consumers of other goods - the media, governmental institutions and the general public also have a critical eye on it, due to its indispensability for public welfare, whereas stockholders and executives obviously also strive for high profitability of the supply chain (Chopra & Meindl, 2007; Esteban, 2008).

Very briefly defined: supply chains are networks of all the companies involved in providing a product or service (Papageorgiou, 2009; Shah, 2005), which are created and designed to support the specific market they serve (Hugos, 2006). The focus of the supply of pharmaceuticals is to provide a steady flow of goods ensuring availability at any time for patients, but still keeping track of costs and even more importantly security, which is consistent with the objectives of the respective country's health system (Jambulingam, Kathuria, & Nevin, 2009; Kaufmann, Thiel, & Becker, 2005). Recently the permanent need for security along the supply chain has become a major topic of interest in practice and in research since product counterfeiting, as well as theft poses a serious threat, which is also partly reinforced by pharmaceuticals' status as high-value goods (Elrod, 2012; Jackson, Patel, & Khan, 2012). Porter and Teisberg (2006) stated that pharmaceutical supply chains are often differentiated by very specific elements compared to others, amongst them high customisation and the important roles of insurance companies and governments, which pay the bulk of the operating and development costs.

The layout of a typical pharmacy supply chain is depicted in Figure 2.1 and can involve all channel partners that are cited in the Council of Supply Chain Management Professionals' (2014) definition of Supply Chain Management, from initial providers such as suppliers in the chemical industry and the key players in the pharma industry, to logistics service providers (LSPs) specialised in pharma logistics, pharmacy wholesalers or distributors and pharmacies. Pharmacy wholesalers' as well as LSPs' services can be utilised by pharmacies to lower the number of supplier relationships they need to upkeep at the same time and to lower their inventory costs (Brooks, Doucette, Wan, & Klepser, 2008). Wholesalers find themselves threatened by low profit margins, due to pharmacy chains bypassing them and buying from industrial companies directly or the pharma industry switching to LSPs instead. This is facilitated by the increase in availability of customised offers from the aforementioned LSPs, as well as the rise of e-commerce leading to consolidation among the wholesalers (Jafri & Clarkson, 2008; Jambulingam et al., 2009; Sverige Apoteksmarknadsutredningen, 2008). Further down in the supply chain patients constitute the end consumers of pharmaceutical products, who can receive them directly from pharmacy chains or GPs and hospitals and under certain circumstances from non-governmental organisations too. Slack et al. (2010) claim that when a customer, or in this case the patients, make a purchase

or request their PO medicine via an ETP they are triggering an action along the entire supply chain that requires their needs to be ultimately satisfied. Although governments and regulatory agencies are not necessarily involved in the supply chain's physical flow they can play a decisive role as well, because the demands they make on delivery times, availability, accessibility and entry requirements influence the actors participating in the supply chain.

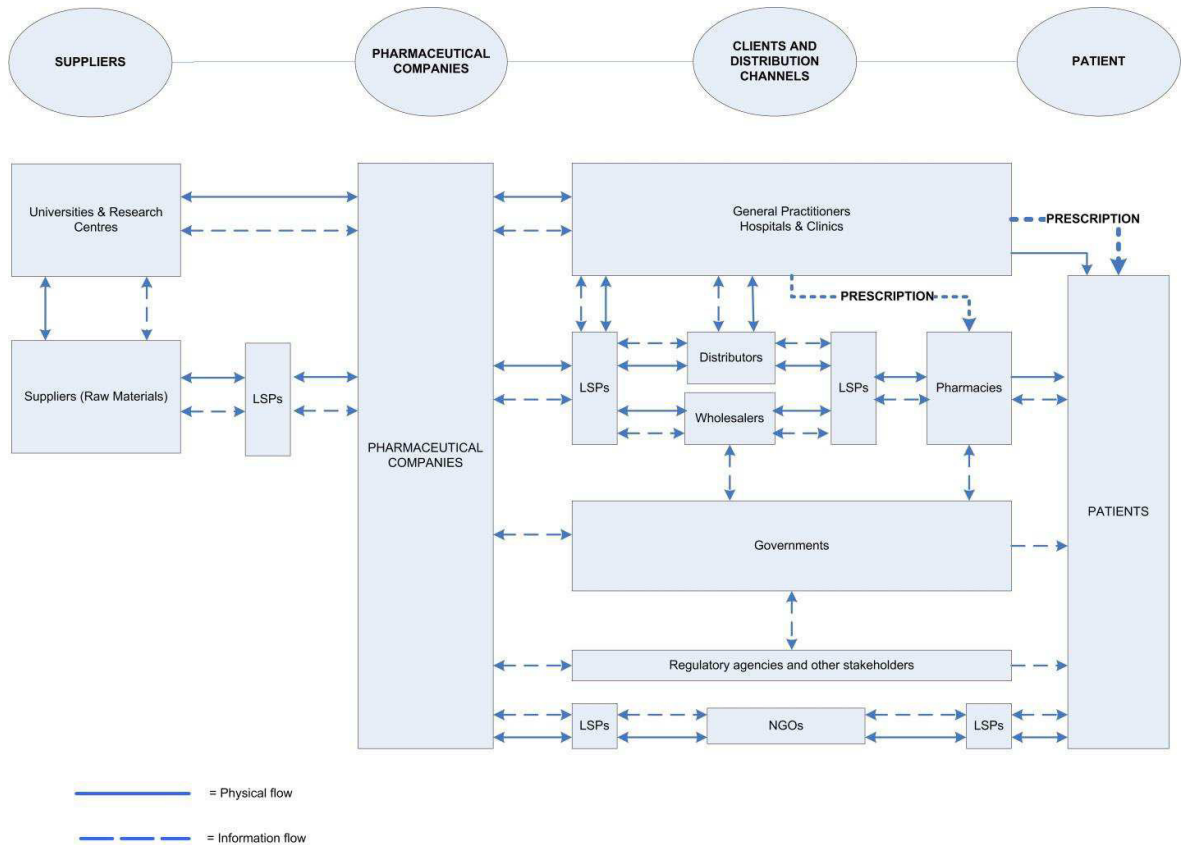


Figure 2.1 Pharmaceutical supply chain map (adapted from Pedroso & Nakano, 2009)

It is important to define the supply and demand characteristics of the product's supply chain it is handling before its subsequent resources to the market. Hugos (2006) suggested to use a matrix as detailed in Figure 2.2 to determine the market stage the respective product finds itself in to define whether the emphasis of the supply chain management should be put on efficiency, flexibility or the ability to evolve in conjunction with all of them which is aimed at new and still changing products. Generally speaking, finished PO medicine is described to be a product with rather stable domestic demand in Sweden (Sverige Apoteksmarknadsutredningen, 2008). Therefore regular changes to the supply chain are not deemed to be advantageous and constant process optimisation and cost cutting is prioritised in order to tackle comparatively low margins for pharmacies in Sweden (Seifert & Langenberg, 2011; Sverige Apoteksmarknadsutredningen, 2008).

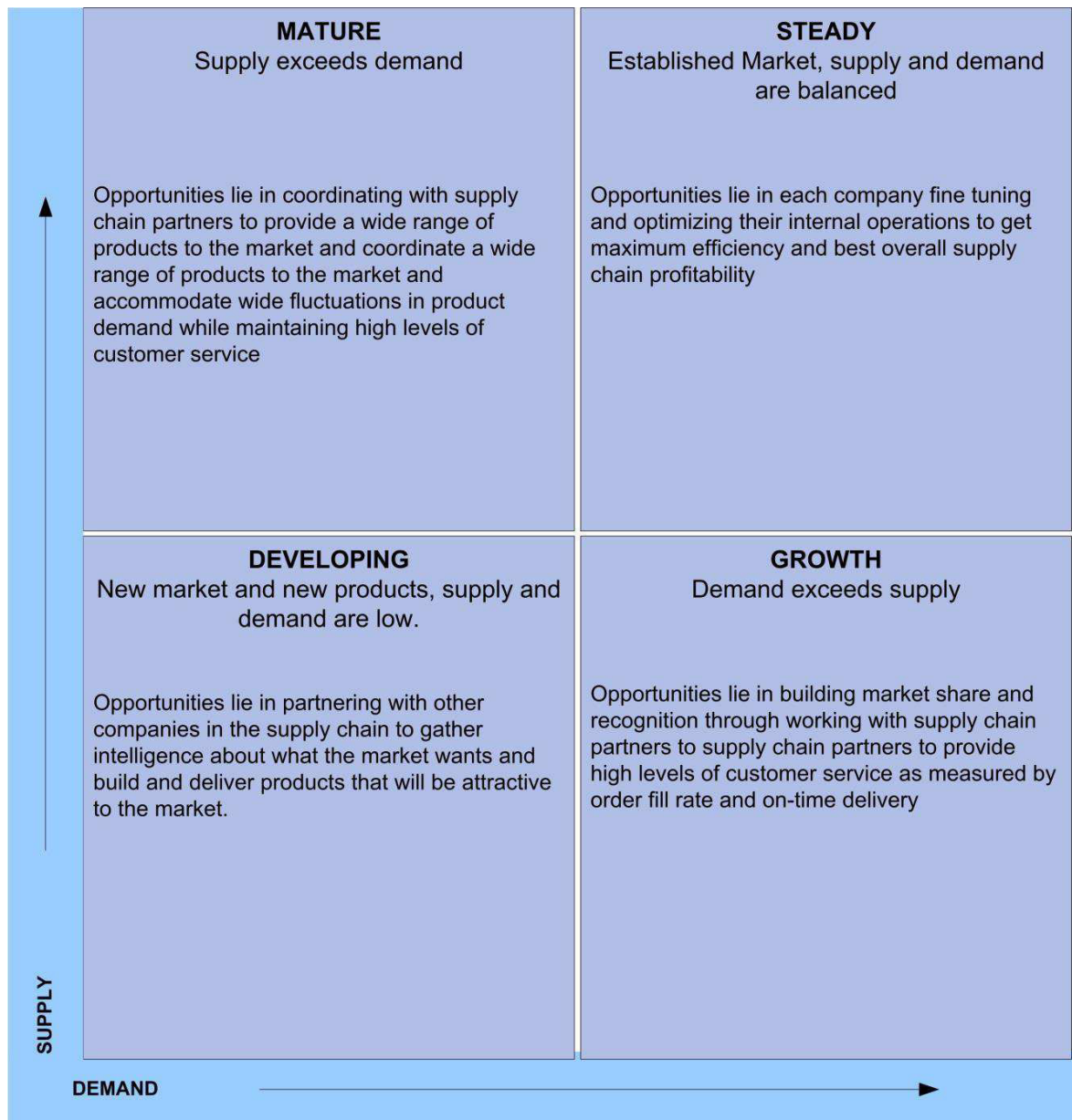


Figure 2.2 Market conditions matrix (Hugos, 2006, p. 317)

In this case, the matrix serves the purpose in defining the market for prescription pharmaceuticals in Sweden. Although it may not necessarily be a new product the demand and subsequent supply via a home delivery, instead of a simple online reservation and collection service, represents a new market segment for both customers and companies.

However, with the increase in consumer interest in e-commerce it is becoming apparent that online access to medicine is gaining popularity for reasons primarily relating to reliability of purchasing non-prescription items via the internet (Mäkinen, Rautava, & Forsström, 2005). Indeed, a survey carried out in seven European countries discovered that 44 per cent among the complete population and 71 per cent of the population using the internet had accessed it for health purposes (Andreassen et al., 2007). At the same time another study found out that PO or OTC medicine was the fifth highest health topic searched for on the internet, accounting for 37 per cent overall (Fox, 2006). When this is combined with the plethora of LSPs and ease of access to technology to monitor and control advanced supply

chains, pharmacies are now finding avenues into developing markets through augmenting existing or creating new distribution channels.

Although the home delivery of PO medicine may simply constitute the substitution of an existing distribution channel by another, as stated previously it can also be a new market - especially when Levaggi et al. (2009) suggest there is a shifting trend whereby the very concept of health is changing from the eradication of disease to general well-being and that pharmaceutical product promotional strategies are being aimed at creating a demand for medicine. Even though direct promotion of PO medicine is not allowed in every country, pharmacy manufacturers usually find ways to carry out advertising in a more subtle way, such as press releases to increase the brand awareness (Busfield, 2010). This certainly fits with the Hugos (2006) matrix that businesses begin to build and deliver products that are attractive to the market - in this case, the product on offer is the convenience of having essential medicine delivered to suit a patient's lifestyle.

2.1.1 Reasons for entering a new market or creating a distribution channel

The reasons for entering a new market or creating a new distribution channel for companies in general can be many - however, it can be suggested that one of the most significant is market attractiveness (Wrona & Trąpczyński, 2012). Market attractiveness assumes that there is a good fit with the company's profile and that the introduction of multiple channels will enable them to capture customers in different market segments (Alptekinoğlu & Tang, 2005), as well as create multiple benefits that were not available before as detailed by Coelho & Easingwood (2004) in Table 2.1.

Table 2.1 Benefits of having numerous distribution channels (adapted from Coelho & Easingwood, 2004)

Benefit	Description
Sales increase	The overall aim of sales increase can be achieved through extended market coverage and higher customer satisfaction among its current target group.
Extended market coverage	Opportunities exist to capture customers in different market segments and with different income levels. Customers who can afford to pay for a delivery service, or, can be enticed via free delivery could be more likely to buy in greater volumes. As customers become better educated about the market, so it becomes more fragmented. Therefore companies that use multiple channels are able to serve the different needs of these segments and increase overall sales volume.
Improved customer satisfaction	Customers benefit from having a 'one-stop-shop' solution that fits their needs. They become comfortable in what is available from a specific company and learn to trust the results from using them regularly. This may be in spite of waning brand loyalty in light of wanting more leisure time.

Cost reduction	Potentially higher sales volumes combined with a cheaper distribution channel as a replacement or supplement to an existing one in order to lower the costs at the same time creates another advantage. An example is the banking industry trying to lower the number of branches and substituting them by e-banking due to expensive central locations and the need for educated employees (Canwell, 2005).
Increased amounts and better information	Higher frequency or added information tools in the form of metrics and databases are added to distribution channels in order to track repeat orders or monitor spending habits of new customers. Customers may react to the new distribution channel by doing more shopping around, leading to higher buyer power (Reuer & Kearney, 1994).
Reduction of business risks	Adopting multiple distribution channels can lead to risk reduction, as it lowers the dependency on each single channel and its involved actors. Furthermore the expanded market coverage leads to a diversification of revenue sources.

Despite the listed advantages of establishing another distribution channel, the potential for success is also dependent on the product's characteristics. The classification of 'touch/feel' goods, which describes products that need to be experienced, touched, tested, tried or looked at by the consumer prior to the purchase, such as clothing or certain electronic products, which is used by Grewal, Iyer and Levy (2004) is one that does not fit pharmaceutical products as they are standardised. The non-existence of these characteristics benefits its potential to be sold via impersonal distribution channels and reduces the disutility experienced by consumers (Yoo & Lee, 2011).

A final aspect is that entering the distribution channel can provide a level of stability when it comes to planning and costs. Shi, Liu and Petruzzi (2013) suggest that product pricing can be constrained as a result of fixed channel distribution that is regulated by law mitigating the need to factor in costs that are caused by market and demand volatility. This may especially be the case in the pharmaceutical industry where governments impose pricing structures to ensure residents can afford the medicine needed to treat illnesses.

2.1.2 Consumer-orientated pharmacy supply chain innovation

While it has been previously stated that the demand for medicine remains steady and therefore requires little in the way of innovation, Flint, Larsson, Gammelgaard and Mentzer (2005) suggest that a firm's ability to drive innovation will ultimately create value for customers and allow it to compete more effectively. In a market as small as Sweden's both with a low population density and limited amount of brands available for consumers to choose from, achieving an improved offering to customers through innovation becomes an additional aspect that should be considered as a home delivery service is implemented.

However, Flint et al. (2005) also suggest that it may not necessarily be the innovations themselves that enhance a service but changes in the processes of the firms that are adapted as managers respond to a dynamic environment - in this case, the dynamism in pharmacy supply chains can be created by the technological processes needed for transpor-

tation and e-commerce. Chapman et al. (2003) point out that technology has been adopted by service firms to improve both the efficiency and effectiveness as well as to enhance their services. For Swedish pharmacy chains, the ability to access and use the countrywide ETP database presents the first stage in utilising technology to form a process - information about patients is available and can be accessed anywhere in the country and also linked to any licensed facility or outlet - this can be extended to include an e-commerce platform for pharmacy chains whereby patients already have pre-populated information that has been created by the ETP database. When combined with a Transport Management System (TMS), Button, Doyle and Stough (2001) highlight that this can assist in the efficiency of scheduling product delivery as well as customer service in the form of more frequent and faster services that reduces the time element from point to point. Thus, as these elements become more embedded in the overall network and business, so do new processes emerge to leverage their benefits to the point that they innovate on an incremental basis adding value as they go.

2.1.3 Sweden's pharmacy market

Based on information from the Swedish Pharmacies Association, there were 1 274 pharmacies owned by only 29 different brands in Sweden in 2012, a 37 per cent increase since the deregulation in 2009. As detailed in Figure 2.3 the majority share is controlled by the state-owned Apoteket AB and the biggest three pharmacy chains Apoteket AB, Apotek Hjärtat and Kronans Droghandel owned more than two-thirds of all existent pharmacies in 2012. During 2012, all pharmacies processed a total of 214 000 prescriptions per day, constituting a 1.3 per cent increase compared to 2011. The total sales volume of medicine in Sweden accounted for SEK 33.4 bn, whereof PO medicine represented SEK 25.7 bn in absolute figures or 75 per cent (Sveriges Apoteksörening, 2013).

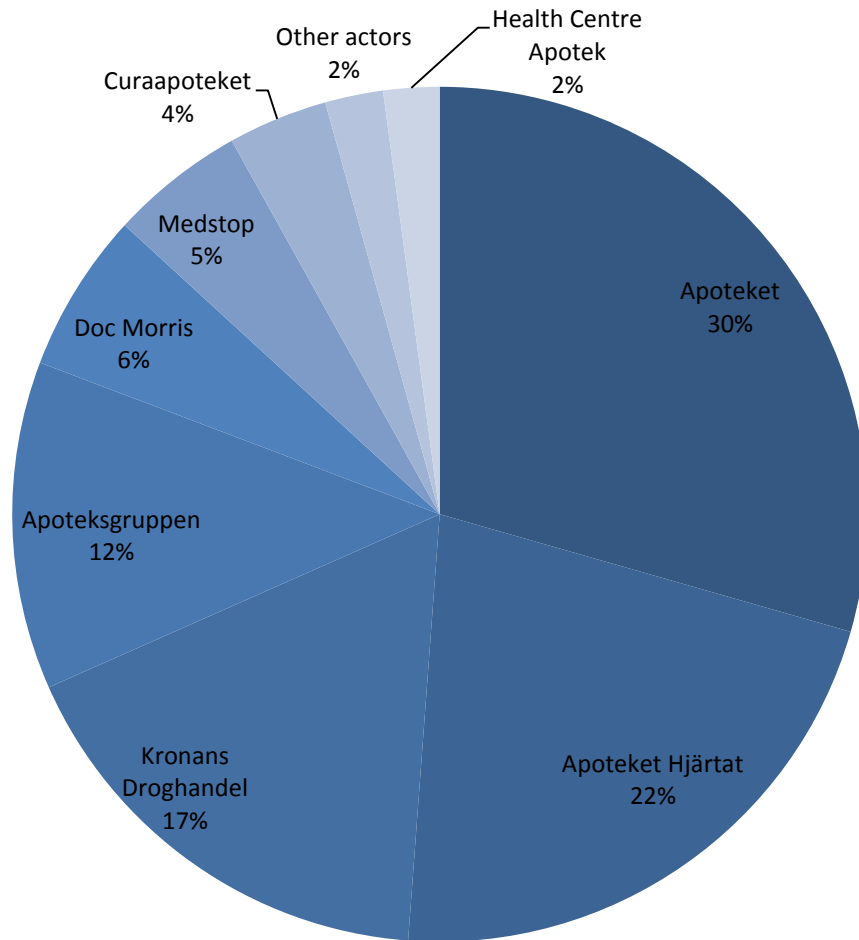


Figure 2.3 Pharmacies in Sweden by brand in 2012 (adapted from Sveriges Apoteksförening, 2013)

What remains remarkable about Sweden is the population density of only 23.7 inhabitants per square kilometre in 2013 (Statistics Sweden, 2014), and the number of 7 501 inhabitants per pharmacy, which is among the highest in Europe. Although the total number has been decreasing constantly since the deregulation in 2009 it has dropped significantly less in provinces² with very low population density (Sveriges Apoteksförening, 2013), constituting a good example of the urban clustering of new established pharmacies upon liberalisations in the pharmacy market as described by Vogler et al. (2012).

2.2 E-commerce

The term ‘e-commerce’ emerged in the early 1990s (Turban, King, Lee, Liang, & Turban, 2009) and stands for “[...] the ability to perform major commerce transactions electronically” (Simchi-Levi et al., 2008, p. 200). It is part of the wider term e-business, comprising several internet encouraged business models to leverage company performance. It includes electronically-supported sales and purchasing, as well as electronically-supported communication, cooperation or even e-learning (Turban et al., 2009), however, the terms are often confused and used interchangeably. Nevertheless, although the study sticks to the afore-

² län

mentioned description of e-commerce and e-business, several alternative views exist (Turban et al., 2009).

An important technical aspect of e-business is how it contributes to the ease of communication and interaction, both within the company and external to it. In B2C business it has especially boosted the possibilities in providing online ordering and support (Simchi-Levi et al., 2008). This has contributed to the fact that e-commerce is sometimes seen as the distribution channel of the future impacting not only economics, but societies and politics as well (Drucker, 2007). Among the biggest drivers of e-commerce relevant in the B2C market is the facilitation of gathering information about companies, comparing prices, as well as ordering outside of standard operating times and locations thereby creating convenience (Turban et al., 2009). A critical success factor for the achievement of the benefits associated with e-commerce, such as lower costs coinciding with increasing flexibility, is the adaption of the supply chain, which is one of the focuses of this study. In order to gain advantages the supply chain has to be changed from a push-based to a purely pull-based approach or a push-pull mix. A significant difference between a purely traditional distribution channel including a bricks-and-mortar retailer and a solely e-commerce based distribution channel providing home delivery is the number of recipients of deliveries, which is significantly lower in the first case. Hence in e-commerce supply chains, LSPs carrying out the home delivery potentially play a significant role (Simchi-Levi et al., 2008), requiring remarkable coordination efforts and information sharing (Turban et al., 2009).

In the grocery industry, which is comparable to the pharmacy industry due to circumstances such as short expected lead times, low demand uncertainty and low utilisation of transports in delivery, most pull-based online only grocery companies failed. This was due to a combination of the aforementioned unfavourable circumstances with well-established competition from supermarket chains with effective push-based supply chains. On the other hand the retail industry, which came with the advantage of an existing, developed distribution and warehousing infrastructure that could be used for e-commerce as well, managed to implement e-commerce as an alternative distribution channel more successfully. The result was a change in the warehousing strategy of retailing companies towards a pull-approach with decentralised storage of fast-moving goods with high volumes and a minimisation of the decentralised stock of slow-moving, low-volume goods thus leading to lowered costs and higher profits (Simchi-Levi et al., 2008). Nevertheless the trade-offs between the potentially higher transport costs and delivery times in case of a system with one central hub and usually higher personnel, construction or rent and inventory costs, as well as higher coordination efforts in decentralised systems have to be considered when deciding on the number of the warehouses. Centralised systems tend to be favourable for companies carrying a large assortment of goods with low substitutability and a high product value that are usually sold in large sales volumes. Furthermore low customer service level expectations or special warehousing conditions that are hard to maintain are beneficial for central warehouses as well. As hardly any products will meet all of the above criteria it is of utmost importance to carry out a careful assessment of the achievable total costs in various different settings (Langley, Coyle, Gibson, Novack, & Bardi, 2008). As this study is focusing on the adding of distribution channels to existing networks the retail industry is regarded as being a better comparison to the pharmacy industry than the grocery industry. It will still be kept in mind that the delivery times have to be short and might be monitored by the state for that industry, as there is also a law necessitating medicine availability in store within 24 hours upon request in Sweden (Vogler et al., 2012) thus affecting how businesses with e-commerce will operate.

Lee and Whang (2001) state that e-commerce can radically change the way businesses operate in their markets. It is effectively an incremental and disruptive innovation that enhances business practices and can actually be considered frame-breaking when it comes to the world of retail pharmacies. Extending the reach of a costly as well as socially and environmentally sensitive product such as PO medicine via a distribution channel that is regarded as more convenient by some customers and more pull-based from the pharmacy chain's point of view can seek to improve a business' status in providing a more responsive and efficient operation. What is the most critical denominator in any e-commerce service relates to the idea that the internet permits customers to engage in a higher level of self service (Hallowell, 2001) under the auspices that firms can use the platform to provide services instantaneously - for Swedish pharmacy customers this would mean being able to view prescription information, select the required medicine, place an order and have it delivered to their home.

2.2.1 Home delivery

Park and Regan (2004) stated that a distinctive aspect of the digital economy is its power to accelerate information exchange and enhance information accessibility to businesses for products, markets and consumers. Over the years, there has been an organic fusion of the digital economy with the established distribution networks of national and international postal carriers who have been the major sources of delivering items to the home and workplaces of consumers.

This is classed as a service that consumers are able to take advantage of and relates to the ability of companies to “anticipate, capture and fulfil customer demand with personalised products and on-time delivery” (Hausman, 2004). When combined with Slack, Chambers and Johnston's (2010) claim that all supply chain management shares the central, single objective of needing to satisfy the end customer it is possible to introduce the five interlinked performance objectives of supply chain management as detailed in Figure 2.4. One aspect that would be a key in satisfying this demand is through “deliveries of goods to the customers' homes³ rather than customers having to collect the goods in-person from a physical point of sale.” (Park & Regan, 2004). The home delivery services has seen rapid growth with the advent of e-commerce which has allowed consumers to expand their choice of purchasable goods and options for their retrieval. As a result, there has been a greater need for advances in more sophisticated supply chains that have needed to focus on an ever decreasing ‘last mile’.

This means that instead of the consumer requiring to visit bricks-and-mortar stores, postal collection points or designated warehouses, companies are spreading deeper into residential areas with vehicles designed to do rapid drops of small packages. But although buying online and getting goods delivered to peoples' homes has become an alternative to physical purchases from bricks-and-mortar stores, several studies that have dealt with the time aspect of delivery in e-commerce came to the conclusion that the longer delivery times when purchasing online are still a reason for customers to stick to the traditional distribution channel (Koyuncu & Bhattacharya, 2004). Managing to deliver the goods on time can be a deciding factor for the success of a business focused on e-commerce (Lee & Whang, 2001) and the study at hand acknowledges that this is more so the case in B2C e-commerce with PO medicine due to the high value of the goods and their effect on the patient's health. By any means the logistics system still needs to be efficient in order to gain and retain custom-

³(or another location of the customers' choice)

er loyalty and therefore maintain comfortable levels of profitability, both for the shipper and the LSP (Park & Regan, 2004).

A model designed for companies to categorise and specify their interlinked performance objectives of supply chain management, thereby including the delivery aspect and being able to satisfy customer expectations, while still reaching business objectives as stated in the above paragraph, has been provided by Slack et al. (2010) and is depicted in Figure 2.4. The quality aspect is comprised of the performance of all activities involved in the supply chain prior to the delivery to the consumer, which respective errors add up in the end. The factor speed should not only consider the time it takes to fulfil customer orders, but also the throughput times of final goods including the components they consist of, in order not to favour the avoidance of stock-outs by exaggerated safety stocks. Dependability is closely linked to the factor speed as it depicts reliability to actually achieve the targeted throughput and delivery times. The flexibility or agility of a supply chain defines its ability to deal with unforeseen changes. Cost as a factor is more complex than it seems at first sight as it not only includes those incurring within the stages of a supply chain, but also transaction costs between them as well (Slack et al., 2010).

It has to be considered that the importance of the various performance objectives depends on the kind of product as well, hence forcing companies' logistics to focus on the quality aspects of delivery valued the most by the respective customers (Kauffman & Walden, 2001; Mentzer, Flint, & Hult, 2001).

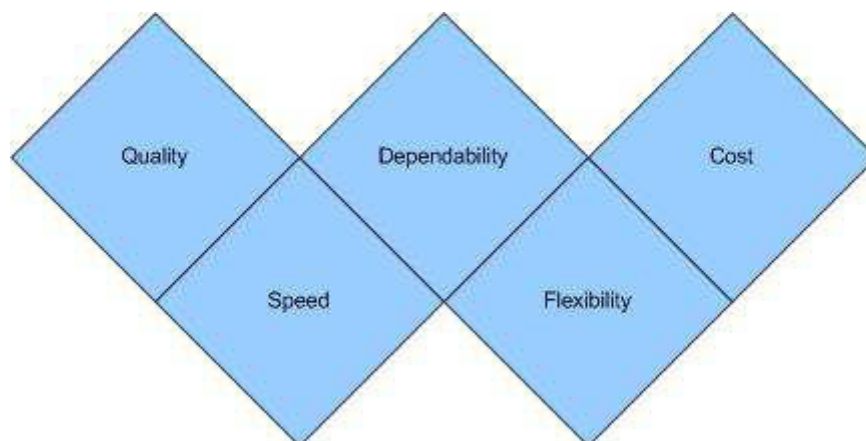


Figure 2.4 Performance objectives of supply chain management (adapted from Slack et al., 2010, pp. 403–404)

2.2.2 Online pharmacies

The proliferation of access to the internet has led to the emersion and dispersion of online pharmacies, in the past mainly in the USA, but later also in Europe (Mäkinen et al., 2005; Sverige Apoteksmarknadsutredningen, 2008). Still, in 2005 Mäkinen et al. (2005, p. 251) commented that the “situation for online pharmacy practise is a mess” in Europe, due to the complex legislative issues caused by the fact that the EU’s legislation could be overruled by member countries’ directive towards health related topics. Compared to the situation in domestic markets the resulting differences in the countries’ rules lead to even more complicated settings in cross-border trade within the EU (Mäkinen et al., 2005).

The main reasons for doubt regarding the practicability of online pharmacy businesses remain the missing personal contact between the pharmacist and the potential health threat to patients, who avoid medical examination before obtaining PO medicine (Mäkinen et al.,

2005). Privacy protection problems on the internet, which are eminent in that highly private context, pose another major issue (Crawford, 2003; Mäkinen et al., 2005). On the other hand higher privacy is also deemed to be an advantage of ordering medicine online instead of getting it in a pharmacy, where other patients around may be able to hear personal information (Crawford, 2003). What is also considered to be advantageous for patients, especially those living far from the next pharmacy or the physically handicapped, is the possibility to submit orders at any time and place (Crawford, 2003).

2.3 Electronically Transmitted Prescriptions

The logistics industry is not the only one, which has benefited from the vast improvements in IT. Recent advances have enabled it to increase the reach and scope of their services and to be more responsive to an ever-changing globalised market in order to meet customer and stakeholder demand. IT has also gained the attention of healthcare providers, which are using it as part of their cost reduction strategies (Shores, Obey, & Boal, 2010) - specifically the use of ETPs which in Sweden has “increased from 20 per cent of all prescriptions in 2003 to 60 per cent of all prescriptions in 2006” (Lindberg & Adolfsson, 2007) and already constituted 90 per cent in 2013, which is among the highest rates in the world (Bridell & Nordling, 2014).

2.3.1 Definition of ETPs

In order to understand how ETPs function and the basic processes that are involved, it is pertinent to first express what they are. This thesis adheres to the Code for Federal Regulations’ definition (“Cornell University Law School,” 2005):

“ETPs means the transmission, using electronic media, of prescription or prescription-related information between a prescriber, dispenser, pharmacy benefit manager [...] either directly or through an intermediary, including an e-prescribing network. ETPs include, but is not limited to, two-way transmissions between the point of care and the dispenser.”

2.3.2 History of ETPs

Sweden pioneered ETPs as early as 1981 when a national working group of specialists, in collaboration with the county hospital in Jönköping, hypothesised the ability of linking a computer terminal in a physician’s office to various healthcare management systems. The world’s first ETP was sent from a physician’s computer in Jönköping to one located at a pharmacy nearby (Åstrand, 2007) and resulted in an expanded pilot project in other healthcare centres such as Bankeryd, Sollentuna, Sundbyberg and at the medical clinic in Linköping. Since then, this service has remained in use by medical service providers in Sweden and allows patients to have their prescription sent to a pharmacy electronically.

Another significant adopter of ETPs has been the NHS in England, UK. Similar to Sweden, the UK used to regulate the market by restricting certain pharmacies from providing NHS dispensing services by the so-called ‘control of entry test’ system which was relaxed in 2005 to permit more actors to provide prescriptions to patients (Vogler et al., 2012).

As a result and, unlike Sweden, the NHS introduced ETPs with no prior technological development in the service with the “first Release 1 initial implementer sites went live in February 2005” (“Health & Social Care Information Centre,” 2014) therefore permitting the establishment of a wider range of providers.

ETPs today are becoming the focus of consumers, medical insurers, medical practitioners and pharmaceutical manufacturers as a means to increase convenience and alleviate the increasing costs of a key component in administering health care services (Shores et al., 2010).

2.3.3 Unresolved problems with ETPs

It has been highlighted in Sweden that in spite of the usage of ETPs and the possibility to pre-order online and pick up at the pharmacy, there remains an amount of prescriptions which are never collected by patients, which potentially increase medical service providers' costs. Although about 60 per cent of those prescriptions were duplicates or not needed due to other reasons according to a study by Ax and Ekedahl (2010), there are still causes for nonadherence that can be tackled by making use of ETPs in combination with home delivery services.

2.3.4 Prescription Only medicine processing in England

Pharmacies in England provide an extensive network of outlets that advise patients on the safe use of medication, as well as providing the services for administering PO medication. In order for any pharmacy to provide a prescription service to a patient it must become an approved NHS contractor, or, have a qualified pharmacist present on the premises (Office of Fair Trading, 2013).

To provide a basis for the research questions, it is useful to take the established ETP service used by the NHS in England, as detailed in Figure 2.5 (National Health Service, 2011), so as to form a conceptual foundation to the system used in Sweden. It depicts the prescribing GP issuing a prescription using the Electronic Prescription Service (EPS) and forwarding it to a pharmacy, which is selected by the patient beforehand. Furthermore a token containing a barcode is handed over to the patient, who then is able to pick up the PO medicine or order it at a pre-selected pharmacy if it is an online only outlet. Upon the pick-up of the medicine or home delivery, in case of using online pharmacies, a confirmation of dispense is registered and a notification is sent to the reimbursement agency together with the token. The reimbursement agency is required in order to maintain the no-cost service provided by the NHS and is necessary for the pharmacy to operate and dispense prescriptions. According to the Office of Fair Trading (Office of Fair Trading, 2013), pharmacies in England derive as much as 80 per cent of their revenue from processing prescriptions making it their most significant source of income.

Another advantage that came with the introduction of the NHS' EPS is the chance to provide repeat dispensing of medicine without repeated printing of prescriptions, thus contributing to the reduction of waste of paper (National Health Service, 2011). This is combined with the fact that the NHS effectively reduces its logistical footprint and associated costs as more pharmacies become accepted into the system and undertake the delivery themselves.

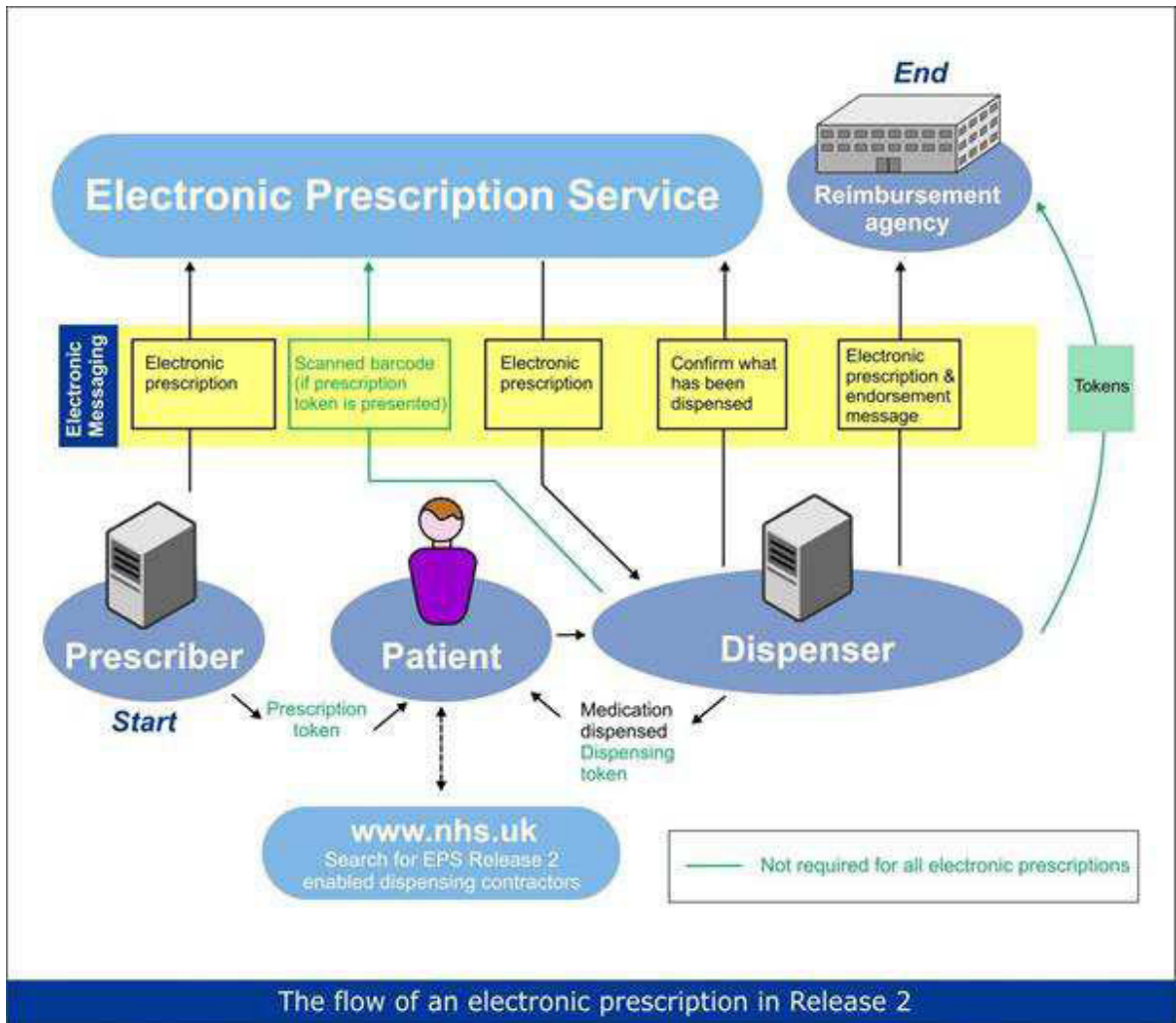


Figure 2.5 Processes in PO dispensing in the NHS system (National Health Service, 2011)

3 Methodology / method

In this chapter the outline of the methodology with regards to conducting the research for the thesis will be presented. There will be reference to the research techniques used and how it may be helpful for other researchers when performing research of the same nature. A discussion of the research approach, strategy, methodological choice and data collection methods will be presented. To conclude this chapter, there is also a description and discussion of the research's limitations which should aid further work in this area as well as a discussion regarding its generalisability and ethical considerations.

3.1 Research process

The study was originally instigated based on the pharmaceutical segment of logistics and supply chain management of pharma logistics which the authors found interesting. This, combined with some initial reading, led to the defining and creation of concrete research question and suitable research strategy in order to answer them. Furthermore it was imperative that the research strategy be structured and tailored to the purpose of the study as this was what would assist in addressing not only the research problem but also its associated questions.

Using Figure 3.1 it is possible to highlight the entire research process from start to finish and therefore provide a guide as to how the study has been conducted. The first column under the headline 'industry focus' shows the proceeding of the authors that led to the 'introduction' starting with the definition of logistics & supply chain management as the field of research and narrowing it down to the pharmaceutical industry within Sweden. The second column illustrates the 'theoretical framework' created subsequently, which provided insights in important subjects accompanying the topic at hand and helped with making the research questions more precise. The following column covering the 'methodological choice' shows the decisions on the approach, research strategy, data collection method and analysis based upon the need to address the research questions. The next column deals with the empirical data gathered in the semi-structured interviews constituting the chapter called 'empirical findings', whereas the last column concerns the analysis of the empirical data and theory, as well as the conclusions drawn, thereby constituting the 'analysis' and the 'conclusion' chapters. Though the chapters and subchapters are depicted in a rough chronological order of their creation in Figure 3.1, they needed to be amended several times and their contents changed partly throughout the process of generating the study.

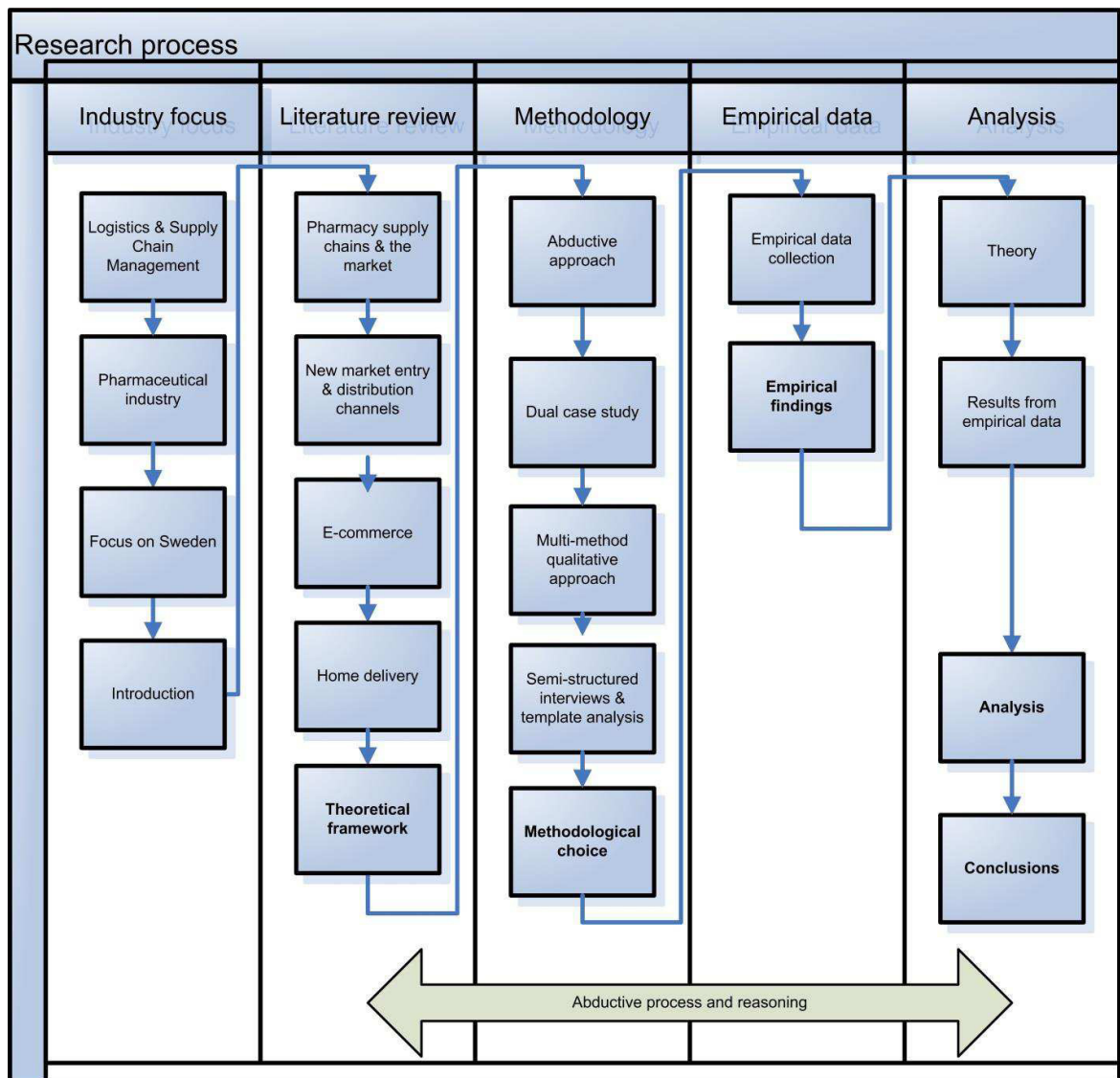


Figure 3.1 Research Process

3.2 Research approach

In general the two alternatives deduction and induction are regarded as the major approaches, which can form the basis for the reasoning of a research. Abduction, the third alternative, is usually seen as a combination of the aforementioned options (Saunders, Lewis, & Thornhill, 2012).

Using deduction, the first of those two approaches, the logically drawn conclusion is actually deemed to be true in case all of the assumptions set up beforehand. Induction on the other hand is making use of gathering impressions, which are then assessed thoroughly and can be identified as factors favouring a defined outcome - thus the conclusion is drawn. Although it is regarded as most likely to be true, there is still some uncertainty about the actual outcome remaining (Saunders et al., 2012). A third approach, abduction, starts with the observation of an interesting outcome, which is used as the basis to elaborate on factors that are considered to lead to such a result in all probability. The justification is that an occurrence all these factors leads to the natural consequence of the outcome applying as well (Ketokivi & Mantere, 2010). According to Kovacs and Spens (2005) the abductive ap-

proach avoids the major disadvantages of the deductive and inductive approach, which are a lack of empirical sensitivity in the first and the risk of leading to theoretically uninteresting findings in the latter case (Polsa, 2013).

For the specific purpose of this thesis an abductive approach was adopted and similar to deductive reasoning a theoretical framework based on existing literature was compiled first. Unlike in deductive and rather matching with inductive reasoning, the elaboration of the thesis commenced by conducting semi-structured interviews in order to achieve insights reaching beyond what was already written in existing literature. This is described more detailed in chapter 3.6, 'Analysis of qualitative data'.

3.3 Research strategy

Among the existing types of research strategy the case study is one that allows the investigation of the research subject within its real-life context and can be regarded as its most striking feature. It can be conducted in different ways, among them the selection of either single cases, because they are typical or unique on the one hand or the selection of more cases to test, whether they generate alike results on the other (Saunders et al., 2012). Case studies in general permit the utilisation of qualitative as well quantitative methods and are regarded to be suitable for exploratory, as well as explanatory studies and a good choice to facilitate the answering of 'what?' and 'how?' questions (Saunders et al., 2012; Yin, 2009). In order to deliver reliable results case studies require triangulation based on multiple sources of evidence and/or methods of data collection (Williamson, 2002).

It can be stated that this thesis constitutes an analytical study that, due to the scarcity of existing research, is exploratory in nature as it attempts to analyse "what is happening; to seek new insights; to ask questions and to assess phenomena in a new light" (Robson, 2002, p. 59). Due to the study's requirements matching the above mentioned characteristics of case studies, the adoption as the research strategy was reasonable. The study has been conducted using a dual case study, selecting companies among the Swedish bricks-and-mortar pharmacy chains, thus ensuring triangulation, as company specific and concurrent answers could be identified. Employing this research method allowed the depiction of the circumstances under which the study was conducted, which is important, due to the possibility of influencing the results.

3.3.1 Company selection process

As the emphasis of the study lies on the potential introduction of the home delivery of PO medicine to patients in Sweden and the necessary realigning of a pharmacy's supply chain, the focal companies needed to be pharmacy chains, operating bricks-and-mortar outlets and not yet offering such a service. Invitational letters to participate in the study were sent to the six largest pharmacy chains by store number in Sweden via mail. In appropriate time these companies were called and asked about their willingness to participate, however, several pharmacy chains declined due to the fear of an indirect revealing of their further business plans even in case of anonymisation as the identifiability is high owing to the limited number of competitors. As soon as one senior manager of Pharmacy 1 and Pharmacy 2 agreed to give an interview a pharmacy manager of Pharmacy 1 granted an interview as well.

Aiming to get an overview of logistics related issues relevant in pharmacy supply chains, invitational letters were sent to ten LSPs potentially offering solutions to the pharmacy sector in Sweden via mail. The companies were contacted via follow-up phone calls later on

with the majority of LSPs needing to be excluded since they did not offer pharmacy specific solutions in Sweden at all or focused on business to business (B2B) deliveries only. Nevertheless an interview with a senior manager at an LSP offering both B2B and B2C services for the pharmacy and life science sector in Sweden was arranged.

Furthermore an interview with a manager at a pharmaceutical company, which already offered a delivery service, could be established as well. This was deemed to be beneficial for deepening the understanding of the requirements of such services, as well as the processing and the supply chain aspects involved. The company is referred to as Anonymous Pharmacy throughout the thesis, as it requested its data to be removed later on.

3.4 Methodological choice

Quantitative methods are considered to be especially suitable when a deductive approach is employed by mainly harnessing numerical data and statistics and are collected via the employment of research strategies such as experiments, surveys or standardised interviews. Qualitative methods rely on inductive processes (Saunders et al., 2012) and in contrast make use of data other than numerical, which is gathered by methods such as semi-structured and in-depth interviews utilised in research strategies such as case studies, grounded theory, narrative inquiries or action research.

These can either be utilised in mono method designs, using only one data collection method or designs using multiple. Those designs can further be distinguished into two groups; the first one, which employs two collection methods generating the same kind of data, so either qualitative or quantitative, are called multi method designs and the second one, which employs two collection methods generating different kind of data, so both qualitative and quantitative are called mixed method designs.

In the case at hand a multi method qualitative design was adopted to gather primary qualitative data through several semi-structured interviews supported by secondary qualitative data obtained from documentation, stemming mainly from public agencies, such as the Swedish Medical Products Agency⁴, the Swedish government's information platform and the UK's NHS.

3.5 Data collection

Interviews are considered one of the most important and common methods of collecting data when it comes to case studies and are most often associated with qualitative research studies (DiCicco-Bloom & Crabtree, 2006). Many modern texts differentiate between three types of interviews, namely structured, semi-structured and unstructured. Furthermore the data collection in interviews can follow a standardised or non-standardised approach (Saunders et al., 2012). The use of interviews in research work requires knowledge and contact to key players in the prevailing area and direct access to them, in order to be able to fulfil the purpose (Denscombe, 2010).

DiCicco-Bloom and Crabtree (2006) state that the questions in semi-structured interviews remain open-ended, with other questions developing from the dialogue between the interviewer and the interviewee. According to Sorrell and Redmond (1995) suggestions it can be assumed that in order for interviews to generate valuable data the interviewer should maintain control over the interview and not contribute too much extra.

⁴ Läkemedelverket

Due to the nature of the study and the lack of available information on the research topic, it could be argued that the interviews required should be semi-structured. This method of data collection was favoured, due to the importance of gaining more in-depth insights into the motivations of the pharmacy actors to enter the market of home delivery of PO medicine and their opinion on adaptations needed to their supply chains as a result. To render a comprehensive picture about the research subject, the utilisation of semi-structured interviews is supported by their interactive characteristics, which on the one hand allow preparation of key questions in advance, but also enable their revisions later on and the ability to ask additional probing questions during the data collection process. In essence those key questions are the ones destined to obtain the data to be able to answer the research questions, whereas additional questions aim at gathering data that enables to reveal the context of the research questions.

Table 3.1 describes the order of interviews carried out and introduces the interviewee and company shortcuts used throughout the study. All of the interviews were recorded, after having been granted permission, and, as suggested (Saunders et al., 2012), transcribed subsequently in order not to lose information.

Table 3.1 Interview overview

Date	Interviewee title	Company	Interview type	Location	Duration
2014-04-16	PM1	Pharmacy 1	Face-to-face	Pharmacy outlet	40 min
2014-04-17	SM1	Pharmacy 1	Phone	JIBS ⁵ elsewhere	/42 min
2014-04-22	LSM	LSP 1	Face-to-face	Göteborg	68 min
2014-04-25	SM2	Pharmacy 2	Phone	JIBS / elsewhere	37 min
2014-05-08	AM	Anonymous Pharmacy	Phone	JIBS / elsewhere	27 min

The availability of official documentation related to the topic of the thesis was scarce and access to company internal documents remained prohibited, justified by their confidentiality as they included details about recent market monitoring and further business plans.

3.6 Analysis of qualitative data

Ideally, data analysis should occur concurrently as the data is being collected when adopting case studies as a research strategy. Yin (2009) stated that in order to devise a theoretical framework, one should identify the main variables, components, themes and issues in the study. This will form a basis to explain the expected outcomes later on when mixed with the author's own experience and knowledge. Once this has been created, it is then possible to perform a direct analysis of the collected data.

⁵ Jönköping International Business School

As using an abductive approach is very much about moving from theory to empirical data and vice-versa constantly throughout the study (Dubois & Gadde, 2002) a theoretical framework was comprised to understand the basics of the pharmaceutical sector, its characteristics, the Swedish market, as well as home delivery in general. Thus, a list consisting of key questions and additional ones⁶, as well as possible follow-up questions, to be potentially asked in the first interview with PM1 were created. After the transcription, an analysis was carried out and entirely new upcoming topics or content that had not been covered yet in necessary detail in the theoretical framework at that time were identified. Subsequently the theoretical framework of the study was extended making use of secondary data and existing literature. In a set of iterative processes a list of potential questions for the second interview (SM1) was created based on the amended theoretical framework. The same procedure was followed for the commencing interviews with LSM, SM2, AM. Since the interviewed LSP (LSM) and Anonymous Pharmacy (AM) showed different company characteristics and were meant to provide insights from different angles compared to the question lists created and therefore displayed less commonalities with those for Pharmacy 1 (PM1, SM1) and Pharmacy 2 (SM2). Although question lists were created prior to the interviews, these were still semi-structured and not structured in nature as the lists served as a starting point for reorientation. Frequently questions were skipped, whereas others were added during the interviews depending on the engaging topics that arose as a result of the dialogue.

The analyses, which were carried out after each interview, were conducted according to the 'template analysis' procedure suggested by King (2012). The striking feature of template analysis, which was the decisive factor to adopt it for this study is its flexibility. It leaves the possibility to be adapted to the respective research's needs and leaves freedom to amend the template throughout the procedure (King, 2012). This was especially deemed important as the emergence of topics that were thought of before throughout the course of the study were expected by the authors. Based on the theoretical framework categories were developed and a code hierarchy consisting of three levels was created. Two and three code levels for more accurate classification were only applied to codes that needed to be analysed in greater depth due to their high importance to the study as they usually addressed the research questions directly, whereas codes rather providing additional background constituted of one level. Accurate classification was for instance done with the level 1 code 'home delivery', which was narrowed down to 'key drivers for an introduction' on level 2, and 'demand' on level 3, whereas 'pick-up service for PO medicine' only consisted of level 1. The template needed to be revised and restructured several times after interviews had been carried out, as new topics needed to be assigned new codes, codes were merged and old codes were deleted or reclassified. To keep track of the different codes different font colours were assigned to them in the transcripts. The constantly changing template served as the principal element for identifying relationships and key topics, which was used to answer the research questions.

The empirical data gathered from the interview with the Anonymous Pharmacy and its subsequent analysis needed to be removed completely later on, due to the company's wishes.

3.7 Literature review

The aims of the literature review were to gain insights on the subject of home delivery of PO medicine in Sweden, e-commerce and ETPs with an emphasis on the logistics perspective, as well as to provide the audience of this study with a requisite understanding. Combined with this, Knopf (2006) suggests that a literature review aids in the validation of

⁶ as detailed in chapter 3.5

whether or not the research questions have already been answered, and, showing the audience that the study will add new knowledge to the area.

At the point of the review there had been little published research within Europe on the introduction of PO medicine home delivery via an ETP system and with an e-commerce platform in Sweden. Although there was a considerable body of literature on electronic prescribing, few of these actually move beyond how the PO medicine reaches the patient via the pharmacy or healthcare provider.

There are multiple sources and types of literature that are available, even more so with the availability of the internet. In this case, the types used included 'primary literature' which The University of California Los Angeles (2014) states this is 'first-hand' information from sources as close as possible to the origin of the information or idea under study. The study made use of process guidance documents from the NHS in England and reports from the Swedish Government⁷. All the primary literature sources were supported by 'tertiary literature' sources which consist of tools such as online databases and indexes that allowed the authors to locate primary literature and introduce the topic in the first place.

3.8 Reliability

The authors' intention has been to collect data that would enable them to answer the research questions of the study. However, Saunders et al. (Saunders et al., 2012) suggest that there are data quality issues that need to be addressed, especially because the lack of standardisation associated with semi-structured interviews could lead to concerns regarding the reliability of the data collected and the risk for potential bias.

Due to the technical and sensitive nature of the study and the fact that the home delivery service of PO medicines in Sweden is only offered by a very limited number of private actors and the state-owned Apoteket AB, the authors agree with Long and Johnson (2000) that this study must be open to evaluation and critique. Quite simply put; failure to do so could result in findings that cause the adoption of dangerous or harmful practices.

In order to avoid interviewee error and bias the interviewees could both select the time and date for the interviews as well as a place they felt comfortable in. Furthermore pre-information about the researchers, the topic and planned treatment of gathered data was offered prior to the interviews, as well as anonymisation and providing of a copy of the interview transcript and final thesis. Nevertheless due to the sensitive topic being covered, the danger of having been provided with a partial picture cannot be neglected, as revealing information might have been unfavourable for the interviewees. To ensure researcher error and bias were reduced a short meeting to discuss the question list and focal points was carried out before each interview. Both phone and face-to-face interviews were carried out in pairs, where one of the researchers acted as main enquirer, but the other came up with questions as well. Attention was paid not to ask leading questions. After the interviews they were discussed among the researchers and the transcript was cross checked by both of them.

3.9 Generalisability

Although case studies in general are not necessarily deemed to be less generalisable than studies based on quantitative methods (Bryman, 1988) the generalisability of this study's

⁷ Svenska Riksdagen

findings is limited in spite of the authors' success to obtain data on a corporate and retail level so as to provide a better level of generalisability and reliability.

Due to the study's focus on Sweden the generalisability of the findings to the private pharmacy industry in other countries, even within the EU can be regarded as limited, since different legal settings exist and the deregulation of the pharmacy market only happened in 2009. This provokes difficulties in applying the results on an EU and global level as several preconditions will most likely not match. Within Sweden, where the number of private pharmacy chains is low, the generalisability of the findings to the first research question is deemed to be higher than those to the second research questions. Despite the case companies being among the six major private pharmacy chains and competing in the same market they still show very different characteristics when it comes to their current supply chain layout, which influences the necessary changes to a great extent. The addressed different characteristics are due to different ownership structures of pharmacy outlets, ownership by large chain stores or joint ventures with wholesalers.

3.10 Ethical considerations

Saunders, Lewis and Thornhill (2012) are adamant that access to the research subject and ethics are critical aspects for the success of any research project. Due to the nature of the industry being studied, it can be stated that there were important ethical considerations to be taken into account and based on their findings, DiCicco-Bloom and Crabtree (2006) have highlighted ethical issues relevant to the interview process of which the authors used as guidance for the study:

1. reducing the risk of unanticipated harm;
2. protecting the interviewees' information;
3. effectively informing interviewees about the nature of the study;
4. reducing the risk of exploitation.

Out of these points, the authors contend that the most important relates to anonymity and protecting the interviewees' information. Some pharmacies may or may not have started their own research into this area and not protecting the interviewees' information would risk providing an unfair advantage to competitors, or, they may "share information that could jeopardise his or her position in [the] system" (DiCicco-Bloom & Crabtree, 2006). Therefore, the anonymity needs to be preserved so that there is little chance for a conflict of interest to emerge and that the initial data remains protected.

In this study, anonymity of the interviewees has been maintained by changing names, titles, positions and other identifiable information to generic terms or titles in the audio transcriptions and also in the final thesis. The audio recordings themselves remain on two password protected laptops to which only the authors have access.

4 Empirical findings

This section presents the empirical data gathered from the interviews conducted with participants of the study. Following the transcription of the interviews, the data were categorised by subjects that were identified upon reading them.

4.1 Company and interviewee background

In approaching companies for interview, the authors first constructed questions that would provide some background information both about the persons being interviewed and the company they worked for as presented in Table 4.1. This was to give the data contextual relevance when forming an analysis. It was also hoped that such data would provide an idea as to the resources available and the underlying mission that would shape their decision in entering the home delivery market or developing the distribution channel. ‘N/A’-statements derive from anonymisation efforts or questions that did not apply to the respective type of company.

Table 4.1 Company and interviewee background

Company	Pharmacy 1	Pharmacy 1	Pharmacy 2	LSP 1
Company size⁸	[150-400]	[150-400]	[50-149]	N/A
Interviewee shortcut	PM1	SM1	SM2	LSM
Mission	“Simplicity, reliability and customer focus.”	“To be the pharmacy of the future, create a pharmacy where we focus on well-being and health.”	“To make everyday life easier for its customers and that applies to the pharmacy business as well.”	“Our aspiration is to be THE logistics partner for the life sciences industry.”
Competitive advantages	“The market share.”	“Given that we’re number X in size we can really get a lot of efficiency through our operations and bring those profits and generate an even better customer offering.”	“[Can] be part of a larger context of e-trade i.e. you can find [products] at the same time you buy pharmacy products but that's exactly the same type of advantage that we offer in the physical world.”	“I would say the network we have across Europe, because we have one of the biggest footprints in terms of network.”
ETP use	approx. 95%	approx. 95%.	high percentage	N/A

4.2 Pick-up service for PO medicine

Due to the fact there was no concrete information regarding an actual e-commerce platform and pick-up service for ordering PO medicine, the authors sought to discover wheth-

⁸ in outlets; figures distorted so as not to identify company

er or not patients could pre-reserve medication and then collect it from a store or other pick-up points - this would at least confirm the existence of the basic foundation of an e-commerce interface and delivery service. It was only Pharmacy 1 that stated they had a pre-reservation service, however, according to PM1 (interview, 2014-04-16) the services was “not widely” used and SM1 (interview, 2014-04-17) thought it was, but did not have “exact numbers [because] it is a rather new service in Sweden”. SM2 in Pharmacy 2 said that there was no such service available in their pharmacy chain but instead patients needed to be physically present in an outlet to make any reservations.

As LSP 1 was not directly involved in the direct-to-consumer service the question did not apply.

4.3 Logistics costs and profitability

This proved to be an interesting question as there was no clearly defined answer from any of the interviewees. The most significant information gleaned was that there is currently a large amount of control retained by a combination of the manufacturers themselves and the two wholesalers in Sweden; Tamro and Oriola. SM2 (interview, 2014-05-25) confirmed that any logistical costs were “established in negotiations between the medical products companies and Tamro and Oriola” and that it is “exactly the same price for all pharmacy chains in Sweden - [we] don’t negotiate the logistical costs with the wholesaler” - nonetheless, they stated that logistics costs for them were not significant.

SM1 (interview, 2014-04-17) said that profitability was still possible on PO medicine despite the government setting the price they can “buy the pharmaceutical for” as well as the “price that [they] can sell the pharmaceutical for”, however, the margin still remained low and there was a need to sell other non-medical traded goods such as shampoo, toothpaste etc. where they could set the prices themselves. SM1 (interview, 2014-04-17) also stated that the current distribution model was costly because deliveries to outlets were occurring multiple times a week based on the fact that control had remained with the two aforementioned wholesalers. Consequently, they have decided to develop and implement their own “in-house distribution” to try and “reduce the number of deliveries to each pharmacy from five to three days a week” - in the end, SM1 (interview, 2014-04-17) stated that it was the cost of employing pharmacists who were “well-educated personnel” that made the final distribution expensive. PM1 was unable to provide a figure relating to logistics costs and was unsure if they were allowed to do so.

Indeed, LSM (interview, 2015-04-22) highlighted that from an LSP’s point of view it could also be quite costly as the products need to be kept in a “separate supply chain [where you are] not allowed to mix it with other products” - therefore it would become difficult to realise savings through the consolidation of different product types. The costs, they suggested, would be borne out of needing to use separate transport assets whose capacity would not be fully utilised therefore “wasting space” and making it “quite expensive” to only send “five parcels up north [for example]”.

Other considerations that had the potential to increase costs from an LSP’s point of view related to the overall security of the storage and distribution of products. With greater volumes of PO medicine in a centralised warehouse and on the road network, LSM (interview, 2015-04-22) voiced that the “distribution leg” becomes even more costly “because it’s more from a security point of view than anything else.” Although not an immediate concern relating to home delivery, the LSM mentioned counterfeited medicines were also starting to pose a problem to the pharmaceutical industry in general as, the authors assume,

costs start to increase throughout the supply chain due to tracking and destroying the counterfeit products themselves, closing illegitimate factories and employing measures to protect assets such as manufacturing and distribution facilities.

4.4 Home delivery of PO medicine

Both of the pharmacy companies interviewed confirmed that they were already working on an introduction of home-delivery of PO medicine to patients in combination with the roll-out of an e-commerce platform (PM1; SM1; SM2). The most commonly mentioned and elaborately explained factors that made them willing to consider entering the market of PO medicine home delivery were the existence of demand, keeping up with the times and competitors, as well as offering a fully developed service from the start, hence needing to realise several ancillary factors beforehand.

4.4.1 Key drivers for an introduction

Demand

All the participants employed in pharmacy chains felt that home delivery is a developing market segment with increasing demand in the mid- and long-term and it was gaining interest with the Swedish population (PM1; SM1; SM2). The estimation about the current demand differed among them, while SM2 deemed the demand to be small, the others regarded it as sufficient (PM1; SM1). From a retail perspective, PM1 supported the expected increase by their company's mission of being easily accessible to customers by suggesting that there was a level of convenience and that it is "kind of easy to make your order in the evening [after work]".

A main driver all interviewees agreed on is that there is a generation of consumers growing older but are more used to working with computers having already obtained some knowledge, as well as more trust in the utilisation of e-commerce compared to the previous one, which often has not (PM1; SM1; SM2; LSM). Additional factors include the convenience of e-commerce which is even more prevalent for elderly people or inhabitants of rural areas who are not in close proximity or within an easily commutable distance to a pharmacy, as well as for people suffering from chronic illnesses who could ease their regular restocking process (PM1; SM1; LSM). But there also remained doubts about whether the size of the Swedish market is sufficient, especially if reduced to the aforementioned target groups - the LSM (interview, 2015-04-22) stated that "the market is too small" and with only "9 million people you can't get much benefit out of it".

The pharmacy chains regarded the establishment of home delivery as a chance to gain market share in rural areas without opening more outlets (PM1) and to increase their service level to customers further as "home delivery would be very preferable" since all of the PO medicine could be kept in stock constantly in a central warehouse (PM1, interview, 2014-04-16), but not in each local store. As according to SM1 (interview, 2014-04-17) they "obviously can't have 14 000 different medicines at once [in their pharmacy]".

Remaining up-to-date

The desire or need to remain current with market expectations and a general upswing of e-commerce in other industry segments such as retail and groceries combined with being on par with competitors were all major causes of establishing an e-commerce platform and home delivery (SM1; SM2) - "We just see it [offering e-commerce jointly with home delivery] as a fundamental need to be a modern retail company" stated SM1 (interview, 2014-

04-17). SM2 commented that it is only a matter of time until every pharmacy chain in Sweden will launch their own e-commerce platform. Interestingly, despite the existence of such factors both companies prioritised other aspects before their attention shifted to e-commerce - SM1 (interview, 2014-04-17) highlighted that they had had “so many other things on [sic] agenda” and that “they needed to make the company ready” to “make that big strategic investment”. SM2 (interview, 2014-05-25) insisted that it was not their priority as they had started their “pharmacy chain from zero” and had been “focusing entirely [sic] up until now the physical channel”, but also commented on the overall situation that pharmacy products are definitely not a forerunner in the fields of e-commerce in Sweden.

Both SM1 and SM2 mentioned the long presence of Apoteket AB’s home-delivery and e-commerce service which had been available since 2002, although many people were not aware of it (LSM). SM1 (interview, 2014-04-17) also agreed with this point and stated that “they [Apoteket AB] haven’t marketed it very much”. PM1 (interview, 2014-04-16) commented that the effects of home delivery on bricks-and-mortar pharmacy stores such as their own “might in a short time decrease the volume but for the longer time if you don’t have that there would be other companies that you [sic] could take that volume from us”.

4.4.2 Ancillary factors to be realised

Aside from demand and remaining up-to-date as factors influencing pharmacy chains’ willingness to offer home delivery, they also identified prerequisites to fulfil before they would actually take the step into the market. These included;

Interface requirements

The importance of setting up a proper and easy to use IT interface, as well as a well-working customer support via phone, was stressed, due to the few interaction points with the customer in e-commerce (PM1). “You don’t have so many interacting parts [sic], you have the website, you have the package what you get and also the paper that you’re left with, so not so many interaction points.” (PM1, interview, 2014-04-16). The investment in the IT systems was regarded as a major outlay due to its complexity where SM1 (interview, 2014-04-17) stated that “if you want to increase the home delivery service it’s about creating very easiness [sic] for the customers it should be easy to go online it should be easy to do the actual purchase and check out on the actual web page and then you should feel comfortable with the transportation and the lead time, of course not to be as slow as possible.” In nearly all cases it was felt that the interface was more than just a tool to facilitate the process of ordering PO medicine but also as a full e-commerce solution (PM1; SM1; SM2).

Regulatory framework

When thinking about the setup of a pharmaceutical logistics network and subsequent delivery to the homes of patients, it was evident that there were medicine specific problems that would need to be considered. One crucial problem highlighted by the LSM was the difficulty in consolidating medicine with several other products due to newly introduced EU regulations that stipulate the need for both cold-chain (2°C to 8°C) and ambient temperature control (15°C to 25°C) while LSM (interview, 2015-04-22) openly stated that “in terms of refrigerated products and cold products and normal temperatures, that’s a challenge. That is a challenge to everyone actually”. In addition, reverse logistics related to PO medicine specific customer legitimation regulations (LSM) and the temporary storage of goods, in case PO medicine could not be delivered upon the first attempt, was regarded as somewhat problematic as well (SM2; LSM) given that goods would have to be transported back,

sometimes over long distances to the central warehouse or satellite locations which require a licence and employment of a pharmacist (LSM).

4.4.3 Innovation in Swedish pharmacies

Although not a precedence of the study, it was still of interest to the authors to see if home delivery had the possibility to be augmented through innovation and whether or not the interviewees had any thoughts or ideas as to how it may be implemented. SM1 and PM1 alluded to the fact that continued ease of access and appropriate packaging should be considered with SM1 (interview, 2014-04-17) insisting that priorities such as “reliability, reliability, reliability” of the service to ensure that the products arrive within the stated delivery time but also that they are undamaged and anonymously packaged so as not to highlight that they may be from a pharmacy but overall no major innovations would be needed as “it’s no rocket science” to meet the aforementioned requirements.

On a purely operational level, the LSM (interview, 2015-04-22) reasoned that due to the scale of Sweden and the market “there should be cooperation between the different players [pharmacy chains] in the market”, simply because having different set-ups for all of them would not make sense. If were to be attempted, on the other hand, a coordination of all IT solutions for legitimization of customers and security features could be carried out (LSM).

4.5 Supply chain

It can be suggested that when it comes to the layout of the supply chain of the respective pharmacy chain, there are numerous factors and practicable future options for realignment in case of the introduction of an e-commerce and home delivery combination as another distribution channel.

4.5.1 Current supply chain layout

The current supply chain of Pharmacy 1, as detailed in Figure 4.1, consisted of several pharmacy manufacturers, which are either selling and distributing their medicine to the wholesalers Tamro and Oriola or directly to Pharmacy 1’s central warehouse. Usually for PO medicine the wholesalers are involved and they forward the medicine to Pharmacy 1’s outlets, where they are not, the medicine is consolidated at a central warehouse and sent out to the outlets separately (PM1; SM1).

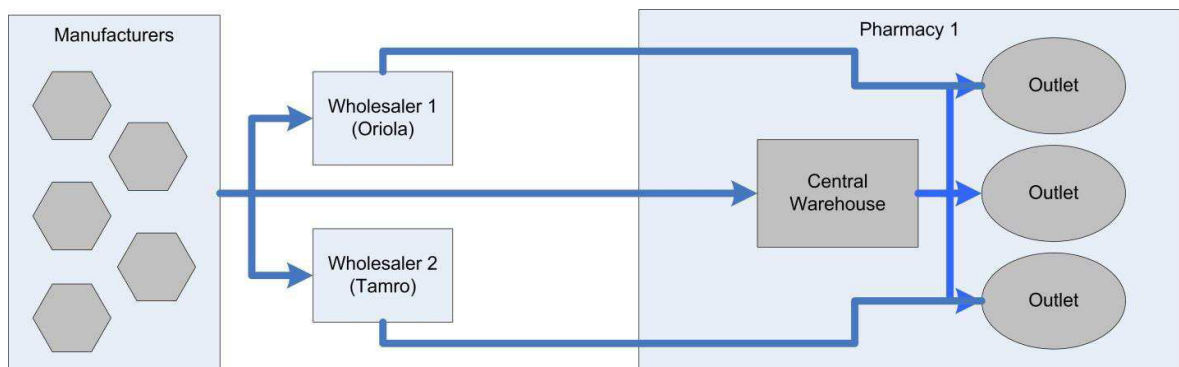


Figure 4.1 Current supply chain of Pharmacy 1

Nevertheless Pharmacy 1 is trying to reduce the influence of the wholesalers by building their own central warehouse not only as an attempt to bypass the wholesaler completely but also to improve distribution efficiency and control of the supply chain - nevertheless it remains a work in progress and is still not functioning at 100 per cent (SM1). According to

PM1 and SM1, at the time the study was carried out, the majority of deliveries were still being carried out by the wholesalers meaning control of the delivery times to stores was extremely limited.

Pharmacy 2's supply chain, as detailed in Figure 4.2, for PO medicine is similar to Pharmacy 1's but they are not utilising a wholly owned warehouse or distribution centre, therefore relying only on Tamro and Oriola to take care of the distribution to its pharmacy stores (SM2). According to SM2 the development time to establish or change the system would take years and the current layout is more or less a result of an established set of regulations.

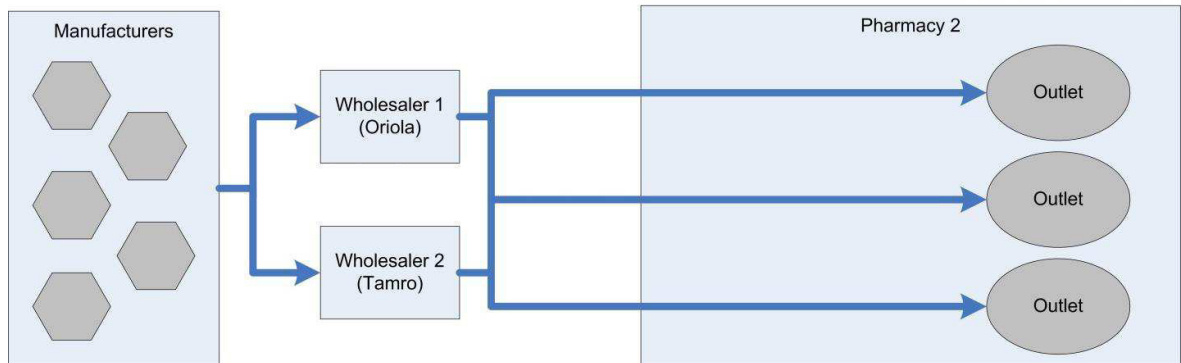


Figure 4.2 Supply chain layout of Pharmacy 2

For products, other than PO medicine sold in their pharmacy stores, the company is employing another supply chain layout in order to generate economies of scale through the effects of consolidation (SM2).

According to the interviewees, Tamro and Oriola are the dominant wholesalers for PO medicine in Sweden, and are very hard to bypass as the manufacturers that supply them are often not willing to establish delivery to other buyers in the country, such as pharmacy chains or an LSP because it would affect their distribution costs negatively (SM1; LSM). At the same time the pharmacies are obliged to offer any kind of PO medicine due to governmental regulations (SM1), whereas some deemed the collaboration with the two wholesalers to work well (SM2) others disagreed (PM1; SM1).

4.5.2 Supply chain realignment needed for home delivery

When asked about the necessary changes to the existing supply chain, as well as the possible layout of a potential new supply chain, the pharmacy chains agreed that the home delivery would be carried out from a single so-called dark store⁹ (SM2), which is not accessible to the general public or one central warehouse which would operate as a storage and transfer point between the wholesalers and patients (PM1; SM1), whereas the distribution to the outlets would not be changed and therefore differed among the two companies (SM1; SM2). Figure 4.3 shows the realigned supply chain as proposed by Pharmacy 1, comprised of the currently existing distribution to the outlets, previously described in Figure 4.1 and the upcoming direct distribution channel to the patients via home delivery.

⁹ "distans apotek"

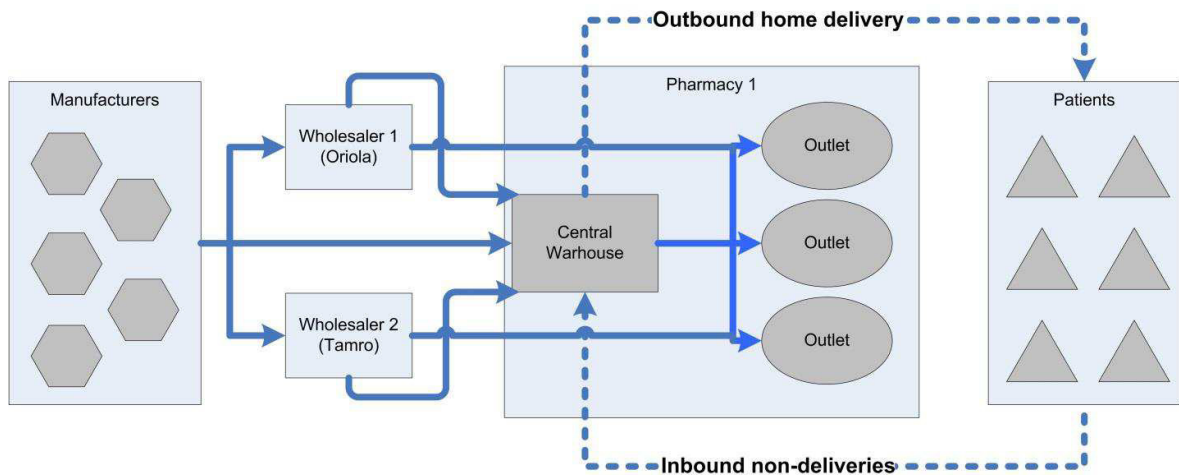


Figure 4.3 Suggested realignment of Pharmacy 1's supply chain

It was neither deemed advantageous to remodel some existing stores to smaller delivery hubs, not least due to the high costs of personnel educated to deal with pharmaceutical products (PM1; SM1), nor to arrange direct delivery from a wholesaler to a patient, due to regulatory issues (SM2).

What remains interesting in this aspect is that the senior manager of LSP 1 declared that several hubs would be necessary to deal with non-deliveries, specifically medicine that could not be delivered on the first attempt due to patients not being at home or failing to legitimate themselves (LSM).

4.5.3 LSPs' role in the supply chain

Pharmacy 1 had already outsourced the warehousing due to reasons related to efficiency (SM1), which also matched with the LSM's opinion that they themselves were able to set up and run distribution centres, set up the overall distribution including storage and transport better. There was also a focus on consolidation and going as far as merchandising stock in stores in a more efficient manner than pharmacy companies could do themselves, due to different core competencies (LSM). Pharmacy 1 also regarded new relationships and deals with LSPs necessary for the distribution of goods, in case of an introduction of home delivery (SM1), while the LSM mentioned that outsourcing logistics in the pharmacy sector in Sweden was attracting more and more interest in general.

The most important criteria when selecting an LSP were accuracy, reliability, delivery within 24 hours¹⁰ and quality regarding the condition of the goods and packages (SM1). At the same time the SM1 doubted the feasibility of keeping the delivery time below 24 hours constantly in case of home delivery, as the wholesalers involved in the supply chain had a big impact on it and Pharmacy 1 lacked comprehensive control over it. The importance of keeping up close collaboration with all the parties involved in the supply chain in order to ensure meeting the 24 hours regulation hence was considered of high importance. Differentiation through shorter lead times was also an aspect PM1 considered. In that context SM1 (interview, 2014-04-17) also complained about the standardised services offered by LSPs: "today everyone thinks they can reach a high level and now it's time for them to offer us differentiated services such as same day delivery". The LSM retorted that although they themselves would possibly not be the cheapest on the market, it was because they were able to offer these requested differentiated services, thus raising the price. At the same

¹⁰ as per governmental obligation

time the LSM then commented on decisions in previous cases of outsourcing logistics in the pharmacy sector in Sweden, which had been based predominantly on price and therefore did not go well or at least did not match the expectations, thus causing some of the agreements to be cancelled later on (LSM).

4.5.4 Replacement of stores by home delivery

Asked about the future perspectives and potential replacements of physical stores by e-commerce and home delivery PM1 mentioned that they see no option to do so due to many customers, most of all elderly people, seeking contact and face-to-face advice and the need for instant availability of medicine in acute cases. SM1 did not see the closure of outlets as an option as well, but mentioned the possibility of downsizing them in the long run, if the sales via e-commerce increased.

4.6 Referencing the processing in England

The decision to reference the processing system of PO medicine in Sweden and England has been based on the fact that both are established healthcare systems and are publicly funded. England has introduced a successful home delivery service, whereas Sweden has not. At first a short introduction of the Swedish system will be provided, followed by the actual comparison.

4.6.1 Processing in Sweden

In order to receive PO medicine in Sweden patients need to approach their so called 'vårdcentral'¹¹ of choice or a GP, who then issues a prescription making use of the ETP service. This prescription is automatically stored electronically and the patient is thus able to approach a pharmacy of choice for pick-up or ordering of the medicine using the ID-card as a legitimation. Ordering PO medicine online and getting them delivered to the patient's door is currently only offered countrywide via the pharmacy chain and former monopolist Apoteket AB's website, while other chain's only provide delivery to certain areas or pre-ordering¹² online and pick-up at an outlet close to the patient.

Some pharmacy chains utilise e-legitimation, which is also necessary for the usage of some services offered by banks and ICT-providers, is obligatory and in case of other providers usually a form including the name and ID-number needs to be filled out.

4.6.2 Comparison of the processing

The installed ETP services in Sweden and England are similar, but there is still a major difference in the processing of patients' typical requests for PO medicine. Patients do not need to announce a pharmacy of choice for pick-up of the goods in Sweden upon issuing of the prescription, as they need to in England. In both countries the home delivery of the medicine by pharmacies is allowed, but in Sweden there is only one company offering it all over the country, whereas in England many pharmacies have passed the registration process for NHS' EMIS Web EPS Release 2 system and offer the service.

¹¹ (health centre)

¹² (or reservation)

5 Analysis

The authors used the empirical data gathered for the study and attempted to answer the research questions presented earlier in the thesis. The data has been analysed against the theoretical framework using this as a structure for discovering and presenting commonalities, differences and a newly created model. The theoretical framework has been referenced back to the research questions.

5.1 Home delivery of PO medicine

As various authors (Coelho & Easingwood, 2004; Wrona & Trąpczyński, 2012; Yoo & Lee, 2011) stated, companies adopting multi-channel distribution systems see a rise in sales as a key advantage compared to single-channel systems, both due to the potential in winning new customers, who are expecting other or more differentiated products, as well as an increased satisfaction of existing customers. This was evident with the Swedish pharmacy chains researched in the case studies who are, in fact, already planning to introduce the home delivery of PO medicine in their offerings to patients (PM1; SM1; SM2), even though doubts about the current attractiveness of the market for this service existed (SM2; LSM) based on the perceived demand from existing and new patients. What is most apparent, however, is that they forecast a growing demand for the combination of e-commerce and home delivery amongst the next generation of customers (PM1; SM1; SM2), who are already competent with using computers and familiar with the concept of online shopping, and, are considered to be the group of customers with the highest potential to be acquired or kept loyal through the establishment of brand's e-commerce platforms (PM1; SM1; SM2; LSM). Hence it can be argued that there is a willingness of the case companies to include the door delivery of PO medicine in their offerings but it remains dependent on positive uptick in the demand for products sold via this distribution channel in the mid- and long-term.

The convenience factor of being able to order at any time and day, as well as the accessibility from any location when utilising online shopping (Crawford, 2003; Grewal et al., 2004; Turban et al., 2009) were also stressed by the case companies - as they pointed out, due to Sweden's low population density, there is the opportunity for the chains to augment the service offered by their physical stores and thus there is the potential to increase the market share in rural areas with no physical pharmacy available (PM1; SM1; LSM) or to attract people suffering from lower mobility. The importance of the aforementioned convenience factor in the specific case of ordering PO medicine can also be justified, as this is not a typical product where consumers "enjoy the shopping experience" as Grewal et al. (2004) call it. In this case, neither is the type of product unfavourable for being traded online in the sense that it could be classified as a 'touch/feel'-product or is unstandardised (Grewal et al., 2004).

Based on replies from the interviewees, the authors also gained the impression that the willingness of the companies to introduce the home delivery of PO medicine and their decision to work on a solution was very much dependent on the increased pressure imposed by competitors. This impression stems from concrete comments about the case companies' main competitors also working on the introduction (SM2) and that offering an e-commerce platform will soon be a must-have to keep up with them and stay an up-to-date retailer seeing it as the distribution channel of the future as how Drucker (2007) explained it. Although Apoteket AB's home delivery service of PO medicine has been in place ever since the deregulation of the Swedish pharmacy market in 2009 it took some years until competitors have contemplated entering the market, partly because it is a big investment and the

private pharmacy chains needed to set up their operations (SM1; SM2). Despite conceived positive product characteristics for home delivery from a customer perspective (Grewal et al., 2004) and their small physical volume, as well as weight, in Sweden online shopping and home delivery of PO medicine is among the products that are late to the market (SM2). One of the reasons is that the existence of many governmental restrictions within Sweden and the complexity of cross-border trade within the EU for PO medicine (Mäkinen et al., 2005) hinder the entering of new pharmacy chains and leaves it with only few major actors (Sveriges Apoteksforening, 2013), which therefore were not forced to be as innovative as companies in other branches. In the end the intensified competitive pressure and the hopes for an increase in sales by winning new customers are closely related with the importance of maintaining or even expanding the market share, which was deemed very important by the case companies to be able to generate economies of scale in a PO medicine market, which is small compared to others where home delivery of PO medicine is allowed such as the UK (PM1; SM1; LSM).

Coelho and Easingwood (2004) also considered cost reduction as a benefit and motivator for the introduction of another distribution channel, as it could act as an aid or part substitution of a more expensive one. Although the banking industry, which has been mentioned as an example previously (Canwell, 2005) operates in the service sector and pharmacy chains in the retail sector they could be regarded as comparable, seeing as their branches show similar characteristics in that both are often placed in areas with high rental fees and require expensive personnel due to the significant level of education needed. Though none of the case companies admitted a plan to reduce the number of pharmacy stores and a change in their business model towards online pharmacies as a consequence of the introduction of an e-commerce platform and home-delivery as an option in foreseeable future, they still considered downsizing the outlets in the long-run (PM1; SM1) and utilising the e-commerce platform in joint combination with home delivery of PO medicine instead of establishing more bricks-and-mortar stores in order to extend their reach to customers in rural areas to increase their market share (PM1). The authors contend that whether or not servicing rural areas from the planned central warehouses is favourable for the company needs to be assessed carefully as Sweden's already low population density (Statistics Sweden, 2014) is even lower in certain parts of the country. This is also due to the fact that the possibilities for consolidation of PO medicine remain limited (SM2; LSM) and state imposed regulations make a delivery within 24 hours necessary (SM1; LSM; Vogler et al., 2012).

Being aware of the complex regulatory settings in the pharmacy market, a characteristic that distinguishes it from others (Porter & Teisberg, 2006) and the fulfilment of additional prerequisites to offer a product that is error free from the beginning was deemed very important by the pharmacy chains, since a faulty product could heavily damage the company's image and incur fees. As the pharmacy sector is under constant monitoring by governmental institutions and the media due to its importance to a country's welfare (Esteban, 2008), the effects on the image could be even more serious than in other sectors and the acceptance and success of the home delivery service highly dependent on being reliable and without faults from the outset. The fulfilment of these prerequisites also influences their willingness to offer the product. A lot of the potential problems and cost factors in the supply chain of the home delivery product are related to specific regulations for the product type and associated handling conditions. Due to the need for recipient legitimation, temperature control and storage places to employ pharmacists, PO medicine could not simply be dropped off in a post box or other types of pick-up points, as in the case of other products (SM2;). For this reason, reverse logistics and a low volume of goods to be con-

solidated are a challenge to the LSPs providing them with their services (LSM), the first mentioned being further intensified by the potentially high dispersion of customers in Sweden.

Another prerequisite is a functional IT interface, which, should not be reduced to an easy to use online shop as the virtual counterpart to the store (Grewal et al., 2004), as it has to be connected with the national prescription database using Sweden's ETP system. Furthermore telephone support is considered necessary to ensure, as an interviewee also confirmed the problem of fewer customer interaction points left when operating an online pharmacy (PM1), which is also one criticised aspect of this industry (Mäkinen et al., 2005). The Swedish ETP system saw a rapid increase in use in the 2000s (Lindberg & Adolfsson, 2007) and accounts for more than 90 per cent of the prescriptions administered nowadays (PM1; SM1; Bridell & Nordling, 2014). ETP systems can increase attractiveness and facilitation of e-commerce with PO medicine indirectly as they enable the transfer of necessary information that can be checked for its authenticity, in a direct standardised format instantly allowing the pharmacy chains to process the incoming order in a similar fashion. Consequently this triggers an action along the supply chain permitting shorter lead times in order to fulfil supply chain management's overall goal of satisfying the customer (Slack et al., 2010). - On the contrary the checking of traditional paper-based prescriptions for authenticity would make the presentation of the GP's signature on the original necessary, thus slowing down the processing considerably. The possibility for patients to get PO medicine delivered to their door might also help lowering the number of patients, who do not pick up their prescribed medicine in stores, one of the remaining problems within the Swedish ETP system (Ax & Ekedahl, 2010).

Although an expected sales increase through extended market coverage and improved customer satisfaction, as well as to a more limited extent cost reduction were given as factors influencing the willingness to offer home delivery of PO medicine by the case companies, other advantages named by Coelho and Easingwood (2004) were not. Neither was a change in customers' habits towards more shopping around (Reuer & Kearney, 1994), nor was the introduction of home delivery mentioned as a reduction of business risks by the interviewees (Coelho & Easingwood, 2004). Nevertheless it could be regarded as a risk reduction strategy as it is aimed at staying on a par with competitors in order to reduce competitive disadvantages due to the delayed entry to a potentially successful market. On the other hand the establishment of this additional distribution channel can be seen as a risk by itself since it represents a major investment in a new channel, which as of now is not yet widely accepted as a source of supply for PO medicine.

Single innovations facilitating the introduction of the home delivery of PO medicine could not be identified as a factor to increase the willingness of pharmacy chains to adopt their offerings accordingly; the introduction of an error free product that continuously improves in order to enable a high level of reliability regarding delivery quality and time were seen as the key necessities that could also be reached with the existing offers (SM1). It seems the distinctive high customisation of pharmaceutical supply chains claimed by Porter and Teisberg (2006), has until now not really influenced the LSPs offerings towards this sector in Sweden. Although the LSP in the study stated that they offer customised services, one case company countered that more tailored offers by LSPs instead of the available standardised services would be appreciated to improve the service quality, lower costs and thereby add value for both the pharmacy and the patient. Whether this is deemed an innovation to happen or not, is in fact a change in the current circumstances that would influence the quality of the home delivery service, which can be offered right from the beginning. As

stated by Chapman et al. (2003) changes in the supply chain processes will need to be implemented as a reaction to a dynamic environment.

5.2 Supply chain

The case companies' current supply chains for PO medicine include two wholesalers, which are dominating the market and can be classified as push-based. The wholesalers fulfil the important tasks of consolidating the products of various manufacturers and reach considerable consolidation effects in transport as well, as they usually supply the bricks-and-mortar stores of various pharmacy chains. Bypassing those wholesalers, which is becoming more popular in the pharmacy industry (Jafri & Clarkson, 2008; Jambulingam et al., 2009) and can in theory be beneficial due to the greater control over the supply chain, its route management and flexibility (SM1), as well as potential cost savings, is very hard to carry out for pharmacy chains in Sweden (SM1; LSM). The predominant problem for the establishment of direct sourcing from the industrial companies is that the different pharmacy manufacturers only seem to utilise one intermediary each in Sweden, whom they sell to directly in order to maintain a constant number of relationships (Brooks et al., 2008) and keep their own logistics costs as low as possible (SM1; LSM). At the same time legal obligations to carry the complete assortment of PO medicine do not make it possible to eliminate products from manufacturers that are not willing to enter an agreement with the respective pharmacy chain from their product range (SM1). The volume and possibilities for consolidation would decrease significantly in cases where one single pharmacy chain would do it for itself; this is further reinforced because of the 24 hours availability rule's impact, as it makes consolidation of goods over several days harder using less frequent deliveries. Due to the aforementioned reasons, attempts to bypass the wholesalers might be somewhat restricted to only a few big Swedish pharmacy chains and have already been made by one of the case companies, yet not working out as expected at the time the study was conducted (SM1). Although the majority of PO medicine was still distributed to their stores by the wholesalers, some pharmacy manufacturers were already supplying the case company's central warehouse with PO medicine and allowed them more control by being able to arrange the distribution to the stores by themselves (SM1). The second case company had not yet made attempts to bypass wholesalers in the PO medicine supply chain (SM2).

In circumstances where offering home delivery of PO medicine to patients, both case companies did not deem changes to the layout of their distribution channel for bricks-and-mortar pharmacies necessary and regarded a layout with one centralised warehouse as the most suitable. This would be supplied by various manufacturers through direct deliveries and/or the wholesalers' shipments and would constitute the point of origin for the home deliveries to patients all over Sweden (PM1; SM1; SM2). The current layout of the existing supply chains of the two case companies differed, inevitably so did the necessary changes. While the supply chain of one of the case companies already included a central warehouse outsourced to an LSP, which would be suitable to deal with the new situation, the other company did not.

The general advantage of a centralised system is that it is considerably easier and less costly (Simchi-Levi et al., 2008) to ensure permanent availability of a complete assortment of goods in one place compared to managing a varied selection in every outlet (SM1). Besides the large assortment needed to be kept in stock, it can be argued that the eminently high personnel costs in the pharmacy sector, the need for PO medicine warehouses to fulfil defined construction and operational requirements, as well as the goods with high value and rather low substitutability makes centralisation of the warehousing more favourable. Never-

theless at the same time it could be countered that utilising a model with only one hub for deliveries in small units is significantly more risky in Sweden than in more densely populated countries, thus enabling a higher customer density and leading to higher transport cost dispersal, as well as the easier achievement of shorter lead times in order to preserve a high level of customer service (Langley et al., 2008). The LSP interviewed, dealing with pharmacy supply chains, actually showed doubts about the practicability of a fully centralised system, due to expected problems with non-deliveries (LSM) and that the current system remains somewhat in disarray following the deregulation of the industry.

The planned changes in the supply chain layout were also regarded as an enabler to move from the current purely push-based approach to a push-pull mix, as PO medicine with sufficient demand could be distributed via bricks-and-mortar stores while rarely requested articles could be distributed via home delivery, resulting in lower overall inventory costs (Simchi-Levi et al., 2008). This is coherent with the example provided in the retail industry¹³. Besides the cost savings the pharmacy chains expected this to benefit the customer satisfaction level as well once the home delivery service is well known and accepted, as their wasted journeys in case a specific medicine is currently unavailable in store and needing to be ordered could be avoided (PM1). Positive marketing and a noticeable reliability of the service will also be important to establish trust and a higher popularity of the service will also lead to positive effects on the logistics costs as the vehicle utilisation could be increased.

Surprisingly none of the case companies really came up with the higher importance of LSPs in the supply chain, due to the higher numbers of transports related to the introduction of home delivery (Simchi-Levi et al., 2008). Nevertheless, the interviewed LSP mentioned that the interest in outsourcing logistics among pharmacy companies in Sweden was growing and that they are approached by pharmacy chains regarding distribution services regularly (LSM). In fact the case company that had already outsourced its central warehouse to an LSP regarded additional cooperations with LSPs for carrying out the home delivery across Sweden necessary (SM1). It was a logical consequence that the quality factors, most of all dependability in the sense of delivering the correct, undamaged package on time and being able to meet the 24 hours delivery rule constantly, were prioritised clearly over the cost-factor upon selection of an LSP. This was due to the fact that ability to ensure an error free and reliable service can be provided from the outset was one of the factors considered vital by all case companies before offering the home delivery of PO medicine. While it seems that dependability was regarded as a hygiene factor that constitutes a high standard that has to be provided on a permanent basis, speed or more concretely the order lead time was seen as a vital factor and possibility to gain a competitive advantage over rivals. It can be argued that this prioritisation is based on the suggestion to focus on the delivery quality factors that are appreciated the most by customers of the respective product group according to Mentzer et al. (2001), as well as Kauffman and Walden (2001), since it can be reasoned that PO medicine is a product that can be of high value to the patient. Furthermore customer satisfaction is claimed to be highly dependent on keeping promised delivery times promised as quoted by the pharmacies' website (Lee & Whang, 2001). Given that it has been proposed that longer delivery times are a disadvantage of home delivery when compared to the traditional bricks-and-mortar distribution channel (Koyuncu & Bhattacharya, 2004) and it is legitimate to argue that PO medicine is of high value to the patient, it may at first sound paradoxical that order lead times could be regarded as of minor importance in their home delivery. This is due to the existing 24 hours availability rule set by law, which in

¹³ chapter 2.2, e-commerce

most other sectors served by the combination of e-commerce plus home delivery does not exist. Hence a pharmacy chain's potential to differentiate its home delivery service compared to other competing services by the speed factor is lower and can only fluctuate from 0.1 seconds to 24 hours, as long as the company obeys the law. In addition it can be argued that patients suffering from chronic or acute illnesses, who were expected to appreciate the home delivery service due to convenience aspects upon its utilisation for their regular re-stock (LSM), are usually well aware to place replacement orders in sufficient time. In emergency cases, home delivery is neither considered an option by the majority of patients, neither is it what the service is intended for (PM1), as a result, the sum of the specified factors might have influenced pharmacy chains' decisions to regard dependability more essential than speed. Nevertheless, except flexibility, all of the five performance objectives of supply chain management introduced by Slack et al. (2010) - speed, dependability, flexibility, cost and the quality - are claimed to be significant by the case companies.

Based upon the article by Chapman et al. (2003) and the information gathered from case companies and the LSP the authors conceived the idea that in the long run the transportation flows could be made more efficient by stores serving as drop-off points for the day's non-deliveries. Firstly in defined areas nearby and additionally, in order to avoid costly trips back to the central-warehouse, as depicted in the model in Figure 5.1. The affected customer, who could not be served, would be left with a notice and offered the choice of a second delivery attempt or picking their package up in the nearby store, which they could select via the phone and web interface. The day after the unsuccessful first delivery attempt the next truck from the central warehouse would carry out its deliveries in the same defined area and approach the local store as its last stop to drop off non-deliveries. Right after the drop off it would pick up the previous day's non-deliveries and start a second attempt in the surrounding area. This would benefit the LSP, which is then able to use the complete truck for its purpose, as it is not blocked by non-deliveries of goods that may not be consolidated with others, and also the pharmacy chain could benefit indirectly from cheaper transport rates offered by the LSP. The aim of the depicted improvement of the delivery procedures is to create clustered blocks that are served based on loosely set routes.

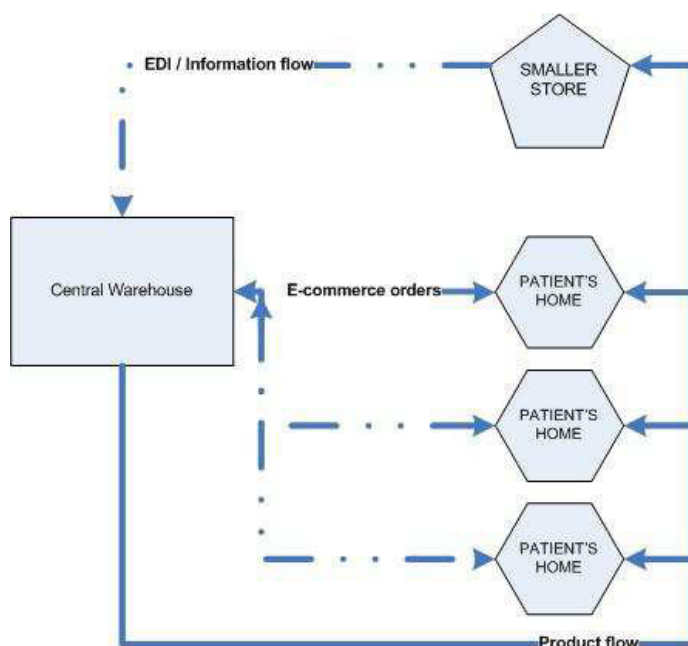


Figure 5.1 Process change to improve efficiency and augment home delivery for PO medicine

6 Conclusions

This section focuses on summarising the study and concluding the most relevant findings of the analysis. Its goal is to ensure that the research questions have been addressed and that the study has achieved its purpose. There is also consideration given to suggestions for further research.

Based on the empirical findings it can be concluded that private bricks-and-mortar pharmacies are willing to establish an e-commerce platform and the subsequent home delivery of PO medicine in Sweden. This is combined with the expectation that in the near future, several of the pharmacy chains will offer competing home delivery services in addition to their existing traditional distribution channel. However, their willingness is subject to certain factors that have to be met before a positive decision towards an introduction is made. These factors have been revealed in this study utilising a dual case study research design, mainly based on semi-structured interviews with two pharmacy chains, which was further supported by interviews with an LSP offering pharmacy dedicated services, as well as a pharmacy company that decided to remain completely anonymous and requested that their data be removed following the interview.

RQ1: What factors would make existing private pharmacy chains in Sweden chains willing to include the home delivery of PO medicine in their offerings to patients?

Due to the fact that there is negligible amount of literature regarding the research subject it has been difficult to confirm what existing factors would make a private pharmacy chain in Sweden willing to introduce home delivery of PO medicine. However, the study has yielded new data that confirms the introduction of the service by two established companies is imminent and that many of the supporting factors mentioned in studies relating to e-commerce, distribution channels, logistics processes and general market attractiveness are encouraging them to do so.

The most coherent and significant factors which made them willing to take that step appeared to be the expectancy to gain market share by winning new customers among the next generation, as well as increasing the customer satisfaction and expectations among existing ones and the need to stay up-to-date due to competitive pressure. The cost factor seemed to be less important, but it was still mentioned in conjunction with serving rural areas from a central hub and possibly downsizing stores in the long-run.

Another factor that could easily be described as a barrier that needed to be removed in order to make the case companies willing to offer the home delivery service is the ability to offer a service without major flaws right from its introduction. Consequently, the companies felt the need to innovate the internal processes that would ensure reliability and accessibility via an e-commerce platform - one that can be augmented to include a wider range of products as well as carry the chain's brand identity and mission. This is combined with a requisite understanding of the regulatory framework and laws that are likely to affect their overall operations should they decide to introduce a home delivery service.

RQ2: How would the existing supply chain of a private pharmacy need to be changed in order to be able to offer home delivery of PO medicine to patients?

Offering a home delivery of PO medicine both case companies deemed a centralised warehouse as a shipping point for the customer packages necessary and saw the advantages of switching from a push-based supply chain to a push-pull-mix, in order to minimise inventory costs due to decentral storage of products with low sales volume. For one of the two

case companies this decision implied the need to establish warehouse capacity, as it did not have a central warehouse before, while the other case company already had outsourced a central warehouse to an LSP as it seemed to plan on becoming independent from the two dominating wholesalers in Sweden in the long-run. Apart from entering new relationships with LSPs for the delivery to customers' doors, which would be firstly selected based upon their ability to keep a high standard constantly as a necessity and secondarily on their ability to provide a high delivery speed, no additional changes to the existing supply chains were deemed necessary.

A second conclusion is that following the deregulation of the market in 2009, the supply chain serving Swedish pharmacies has become more complex. While remnants of the existing chain have remained solidly in place, private pharmacies have been able to create and manage their own supply chain in an attempt to reduce costs and the dominance of the only wholesalers, Tamro and Oriola. Nonetheless, said wholesalers' control is embedded in the current system as they themselves act as some type of LSP to the market which ensures they can deliver to competing pharmacies based on their own schedule, irrespective of what the competitors desire. As a result, any attempt to introduce a centralised supply chain is based on the larger pharmacy chains being able to negotiate deliveries directly with the manufacturers in order to have them provide services to a central warehouse so that some deliveries can be controlled based on need of the pharmacy chains themselves.

The final conclusion is that there would need to be greater compliance with the legal aspects of both the Swedish Government and EU policymakers. On an immediate level the introduction of tighter ambient temperature control, restricting the consolidation and transporting of medicine on a recurring basis, maintaining a 24 hour delivery window as demand increases means even more precise planning and management of the entire supply chain. On a continuous level, there still remain doubts about how said regulations affect pharmacies needing to legitimise patient ID and also what happens to the PO medicine in the cases of non-delivery.

7 Discussions / concluding reflections

7.1 Future research

The authors believe that following the relatively recent deregulation of the pharmaceutical market, there are numerous areas that this study could be expanded to include for future research. In the first instance; the study was only able to obtain data from pharmacies operating at two ends of the scale regarding market share and outlets operated, as well as one specialist pharma LSP and one other type of company who offers medicine deliveries. In order to gain a more holistic and general comparison, there would need to be studies carried out on all major actors as well as the state-owned Apoteket AB - especially as the private actors, at the time of the study, were on the cusp of introducing a home delivery service. This, the authors argue, would create new models and theory that could be applied to existing and new actors.

Second, Sweden has a relatively low population density compared to its geographical size therefore making economies of scale difficult to achieve for smaller, private actors in the pharmacy market. As a result, there is the potential to research possible logistics and supply chain solutions that serve rural areas and the north where, the study identified, it may be difficult to consolidate with other products and those requiring specific temperature control - this is due in part to the assumption that actors will experience greater competition and therefore need to offer more efficient and differentiated services.

Third, with dual constraints and control posed by both Swedish and EU regulations it can be argued that greater scrutiny needs to be applied to the pharmacy market in general and how products make it to the end user. This has been an area that has been difficult to cover by the study due to its complex nature and somewhat evolving development - not only in the transport of pharmaceuticals but their distribution and the subsequent prices for which they can be bought and sold.

Fourth, the aforementioned regulations also affect the articles that could not be delivered in the first attempt, their storage and redelivery of PO medicine in cases where the patient was not at home or at the designated drop point. In this case the authors contend that there would need to be further research in to what adjustments of the supply chain are needed to ensure compliance with current regulations, or an analysis of how those regulations must be adapted to account for needed flexibility in the home delivery service.

Fifth, the study only briefly touches upon aspects regarding the secure legitimation of patient's ID and how this may be carried out once home delivery services are introduced. In this case, the authors suggest a comparative study with the state-owned Apoteket AB and other EU health providers such as the NHS to see whether or not there may be shortfalls in the systems proposed by private pharmacies in Sweden.

Sixth, as more actors begin to provide the service and subsequently build the demand for a home delivery service there may be changes needed in the general setup of the supply chain to meet growing customer interest and higher volumes of products.

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Appendix I

Pharmacy Chain Questions

Ethical:

We are Matt Evans from England and Daniel Gruber from Austria, both of us are studying Logistics and Supply Chain Management in the 1-years master-programme at JIBS. In our master thesis we are focussing on the factors influencing the introduction of the home delivery of PO medicine in Sweden and the inevitable changes for the supply chain it would cause. Our interview will approximately take 45 minutes.

First of all we would like to make sure whether it is ok for you to record the interview. The data will only be used for our research and will of course be treated with care and not passed on to anyone. Furthermore we need to know, if your name and the name of the company should be made anonymous in the thesis and whether you want a copy of it.

(Part of our methodology was to group questions into categories reflecting different aspects of the supply chain & Logistics Industry)

Content:

Background / Introduction:

1. Who are you and what is your responsibility within your company?
2. Which company do you work for and what does the company stand for?
3. How many retail outlets does your company currently have?
 - 3.1. Are those retail outlets freestanding or attached to another operation (e.g. supermarkets)?
4. What are your company's biggest competitive advantages?

Current operations:

1. How are prescriptions currently administered?
2. Does your company offer a pre-reservation of PO medicine online at the moment?
 - 2.1. If yes, is it used by customers?
3. Do logistics costs account for a significant part of the overall cost (in %)?
4. What is your current cost per prescription?
 - 4.1. What would it need to be in order to offer the home delivery to customers?

Door Delivery of PO medicine

1. What are the main issues preventing the introduction of door delivery service of PO medicine in Sweden until now (from your point of view)?
2. What factors would make your company willing to include the door delivery of PO medicine in your offerings to patients (besides the legalisation)?
3. Do you think there is enough demand for home delivery of PO medicine at all?
 - 3.1. At the moment?
 - 3.2. In the middle- and long-term?
 - 3.3. Do you think the demand is influenced by the supply (would it grow in case of legalisation and more sources)?
 - 3.4. Do you think sufficient demand is realistic at all since Swedish people are used to the pick up of parcels instead of home delivery?
 - 3.5. Do you think social drivers e.g. ageing population and rising expense of operating cars will increase the demand?

You've answered that there are sufficient factors that would warrant the introduction of door delivery;

- 3.6. What would need to change within the supply chain in order to be able to keep the lead time promised to customers in case of home delivery?
 - 3.6.1. Availability of specific medicine
 - 3.6.2. Combinations and dosages
 - 3.6.3. VMI, Warehouse Management, etc.
 - 3.6.4. Would you need to have more available stock to cope with demand?
4. What innovations would you like to see happen to facilitate home delivery and strengthen its attractiveness (e.g. direct delivery to Volvo cars).
 - 4.1. Is it important to have an innovative LSP in the first place?
5. Would you consider replacing the currently offered pick-up service for PO medicine completely by a home delivery service?
 - 5.1. Why?
6. What time horizon would you need to operate to for development and introduction (e.g. 5 years / 10 years)?
7. Do you think that Sweden's low population density constitutes a problem when it comes down to ensuring availability of PO medicine at reasonable costs?
8. Do you think the legal allowance of home delivery of PO medicine could (help to) solve it efficiently?
9. Do you think you could gain a greater market share by serving rural areas?

Supply Chain Management & Logistics

1. Describe your company's current supply chain for PO medicine (which players are involved and what actions are they carrying out)?
2. Why did you decide to arrange the supply chain as it currently is or what benefits do you expect from that specific layout?
 - 2.1. If not yet utilised: Why have you not decided to bypass wholesalers by engaging LSPs?
 - 2.2. If utilised: Why have you decided not to engage LSPs and bypass wholesalers?
3. How would you realign your company's supply chain in case of introducing the home delivery of PO medicine?
 - 3.1. Would you consider to make your retail outlets hubs?
 - 3.2. Would you consider to ship directly from the wholesalers or manufacturers?
4. What is the current lead time for PO medicine that is pre-ordered online and picked up in your stores?
5. What lead time would you offer patients for the home delivery of PO medicine ordered online?
6. Do you think it is possible to find a LSP arranging the home delivery in time and still keep an acceptable price level for customers?
 - 6.1. What would be the criteria you would base the selection of a LSP on?
 - 6.2. Do you think it would be possible to offer home delivery for free, as it is common practice in other branches in e-commerce and still act profitably?
7. Do you currently have any logistics assets that could be modified for usage in a home delivery supply chain (e.g. inter store trucks for mail)?
8. In England patients nominate their pharmacy. Do you think you would have the supply chain to deal with repeat prescriptions and a steady volume, if this were the case in Sweden?

Further cooperation

1. Would you allow us to carry out a process mapping?

- 1.1. What would need to change in these processes (e.g. improved IT, larger store network)?
- 1.2. Would you allow us access to internal documents for our research?

Pharmacy LSP Questions

Ethical:

We are Matt Evans from England and Daniel Gruber from Austria, both of us are studying Logistics and Supply Chain Management in the 1-years master-programme at JIBS. In our master thesis we are focussing on the factors influencing the introduction of the home delivery of PO medicine in Sweden and the inevitable changes for the Supply Chain it would cause. Our interview will approximately take 45 minutes.

First of all we would like to make sure whether it is ok for you to record the interview. The data will only be used for our research and will of course be treated with care and not passed on to anyone. Furthermore we need to know, if your name and the name of the company should be made anonymous in the thesis and whether you want a copy of it.

(Part of our methodology was to group questions into categories reflecting different aspects of the supply chain & Logistics Industry)

Content:

Background / Introduction:

1. Who are you and what is your responsibility within your company?
2. Which company and division do you work for and what does the company stand for?
 - 2.1. How many outlets does your company in Sweden have that offer pharma dedicated facilities?
3. What are your company's biggest competitive advantages?

LSPs in the pharmacy market

1. What are the specific criteria of logistics and supply chain management in the pharmacy sector that distincts it from other sectors (from the LSP's point of view)?
2. Which factors do you think are essential to be selected as lead logistics provider by a pharmacy chain?
 - 2.1. What does your company do to make sure it performs well in those?
3. Are sector specific offers for companies involved in the pharma supply chain in Sweden common at the moment?
 - 3.1. Are they widely utilised by those companies?
 - 3.2. Do you consider them a growing market for your company?

Current operations and offers:

1. Is your company's industry specific offer for "life sciences & healthcare" mainly dedicated to industrial companies, wholesalers or pharmacy chains?
2. How can your company help a pharmacy chain and what is the customer company's main benefit from a cooperation with your company?
 - 2.1. Who are the main competitors in that specific business sector?
3. Which of the tasks in a pharmacy chain's supply chain could your company fulfil on their behalf?
 - 3.1. Do these tasks include a home delivery service and/or delivery to pick-up stations?

- 3.2. If already offered: Is home delivery actually already carried out on behalf of any pharmacy chain?
- 3.3. If not offered yet: Is home delivery planned to be included in your offers in future and how long do you think would the development of that product (or service) take?

Home delivery specific

1. What are the main issues preventing the introduction of home delivery service of PO medicine in Sweden until now (from your point of view)?
 - 1.1. What are your company's biggest issues when carrying out home deliveries to private persons?
 - 1.2. How do / could drivers deal with the necessary legitimation upon delivery?
2. What factors would make your company willing to include the home delivery of PO medicine in your offerings to pharmacy chains?
3. Do you think there is enough demand for home delivery of PO medicine at all?
 - 3.1. At the moment?
 - 3.2. In the middle- and long-term?
 - 3.3. Do you think the increasing popularity of ecommerce will lead to more demand for medicine home delivery (affecting your company)?
 - 3.4. Do you think sufficient demand is realistic at all since Swedish people are used to the pick up of parcels instead of home delivery?
4. What would need to change within the supply chain in order to be able to keep the lead time promised to customers in case of home delivery?
 - 4.1. Availability of specific medicine
 - 4.2. Combinations and dosages
 - 4.3. Warehouse Management, etc.
 - 4.4. Would you need to have more available stock to cope with demand
5. What innovations would you like to see happen to facilitate home delivery from the LSP's point of view?
 - 5.1. Is it important to be innovative as an LSP in the first place?
6. Do you think that Sweden's low population density constitutes a problem when it comes down to ensuring availability of PO medicine at reasonable costs?
 - 6.1. Do you think the legal allowance of home delivery of PO medicine could (help to) solve it efficiently?

Supply Chain / logistics related

1. Describe a typical supply chain, which includes serving a bricks-and-mortar pharmacy chain's PO medicine distribution, in which your company is currently involved (which players are involved and what actions are they carrying out)?
2. How would your company realign such a company's supply chain in case of introducing the home delivery of PO medicine?
 - 2.1. Would your company utilise a distribution system with only one hub or several hubs?
3. What is the current order lead time for PO medicine to pharmacy chains you are constantly able to achieve?

Pharmacy chains expectations

1. In an interview on the topic a pharmacy chain representative claimed that LSPs are currently offering (good) standardized solutions for them, but the time has come to offer more customized services.

- 1.1. What is your opinion on that statement and what is your company doing to offer these customized services?
2. Interviewees / literature reported that it in Sweden is very hard for pharmacy chains to bypass wholesalers by contracting with an LSP and sourcing directly from the industrial companies, due to existing exclusive distribution rights.
 - 2.1. Do some pharmacy chains in Sweden actually contract with your company to source solely directly from industrial companies and is it a common reason for them to engage in a business relationship with your company?

General Questions

1. Do you think that online only pharmacies will in the long-run outnumber traditional pharmacy chains or combined ones in Sweden?