VALUE STREAM IN THE REVERSE SUPPLY CHAIN
– CASE STUDY OF THE SECOND-HAND CONCEPT OF A SWEDISH MULTI-BRAND FASHION RETAILER

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Abstract

Background
It has become increasingly a problem that fashion products reach their end-of-life when they are still usable. Today, a fast-changing wardrobe has gained importance which is directly linked to overloaded landfills of textile waste and scarcity of natural resources. The pressure on companies to act upon this unsustainable consumption pattern is increasing. Different strategies are currently in the development. Within reverse supply chains, products are collected from the original user for value recovery. This study focuses is in particular on the reuse of clothing without additional treatments.

Purpose
The aim of this study is to investigate the value stream of a traditional fashion retailer entering the second-hand business. At the same time, possible challenges and potential areas of improvement should be identified. The reuse of garments should provide consumers a more sustainable alternative for consumption. To serve this purpose, a case study was conducted to describe key activities and formulate suggestions.

Methodology
The research was conducted as a qualitative case study. The data collection included personal communication, process observation and an in-depth semi-structured interview. The findings were analyzed using a value stream mapping method.

Findings and Discussion
The data collection offered a holistic insight into the processes and motivation that are involved in the second-hand concept of the studied retailer. The findings concerning the reverse logistics were depicted in the current-state value stream map. This was adjusted to a possible future-state map based on improvements which were elaborated with the reviewed literature. Additionally, a recommendation for a performance measurement framework was developed.

Research limitations
The studied retail concept was still at its start-up stage at the time of the research. Therefore, only a limited amount of empirical data was available to collect. Furthermore, the research was conducted over a short period of time and the impact of the recommended improvements for the value stream could not be observed and evaluated. A future research is suggested to focus on the monitoring of the implementation of the future-state map. The success can be assessed with the help of the proposed performance measurement framework and based on that a new future-state map should be created to ensure continuous improvement.

Keywords: Reverse Logistics; Reverse Supply Chain; Second-Hand Retail; Value Stream Mapping
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<th>Description</th>
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<tr>
<td>BSC</td>
<td>Balanced Scorecard</td>
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<tr>
<td>EOL</td>
<td>End of Life</td>
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<td>E.g.</td>
<td>Exempli Gratia</td>
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<td>EPR</td>
<td>Extended Producer Responsibility</td>
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1 Introduction
The first chapter serves to introduce the topic of this thesis and to give an overview of all relevant terms. The current background is presented, including the present problem and research gap. Furthermore, the importance of reverse supply chains is highlighted. The chapter is concluded with an explanation of the purpose of the study as well as the research questions that served as a basis for it.

1.1 Background
The current state of the fashion industry can be described as highly competitive, in particular regarding pricing. Low-priced items that are usually out of style after one season allow consumers to not feel guilty about disposing them prematurely (Birtwistle & Moore 2007). Returned clothing are usually still in good condition as they are returned because they have been an impulse purchase or do not fit into a certain environment anymore (Blumberg 2005). This shows that a lot of textile products are often discarded despite being still usable, meaning before they reach their end-of-life (EOL). A direct link between fast fashion consumption and environmental problems can be observed: on the one hand, increasing amount of textile waste pile up on landfills while on the other hand natural resources get scarce (Dyckhoff, Lackes, Reese & Fandel 2004; Hawley 2006). With the growing population and increasing income in emerging markets, the amount of waste is expected to further increase (Ellen MacArthur Foundation 2013). Especially for socializing and being accepted in social groups, a changing wardrobe has gained importance. This behavior of frequent shopping and deposing resulted in a throwaway consumption pattern (Birtwistle & Moore, 2007). In the UK it is estimated that around three-quarters of textiles are not recycled, but rather being thrown away (Fletcher & Grose 2012). Therefore, reverse supply chains are necessary to collect the products back for a post-consumer environmental-friendly treatment (Gupta & Ilgin 2013). The reverse supply chain uses waste as a resource and includes all activities that are required to collect a product from the consumer back in order to dispose it or use it in some way again (Van Wassenhove 2002). In order to manage the product recovery efficiently reverse logistics need to be applied (Van Hillegersberg, Zuidwijk, van Nunen & van Eijk 2001) which can be understood as the logistics activities within reverse supply chains. The value stream of EOL returns from consumers is displayed in figure 1. The options to treat returns are either disposal, reuse, remanufacturing or recycling (Srivastava 2013) and are separated in the flow of packaging and products (Tibben-Lemke & Rogers 2002)

In this study, the focus will be merely on the value stream for the reuse of returned garments on the second-hand market. Packaging and other recovery methods are not being considered. While the original form of returned products is changed during remanufacturing and recycling, reuse implies “that a product is used again for the same or a different purpose without a major additional treatment” (Dyckhoff et al. 2004, p. 166). It is therefore the most efficient (Dyckhoff et al. 2004) out of the three options and requires the least resources. In general, reuse merely requires the collection and sale of garments (Fletcher & Grose 2012).

In low-margin and highly competitive industries, reverse supply chains can help to maintain competitiveness (Dowlatabadi 2000) and improve the corporate image (Srivastava 2013). But not only the economic advantages, also environmental issues have urged the fashion industry to rethink (Fletcher & Grose 2012). Due to the consequences of increasing amounts of waste, more stringent environmental regulations are introduced (Dowlatabahi 2000) and customers become more aware of the consequences of their consumption pattern (Fletcher & Grose 2012; Hawley 2006). To handle this problem, Hawley (2006) suggests to offer consumers more possibilities to return or recycle their unwanted garments, such as
different disposal channels. Often, a lack of knowledge or inconvenience to access suitable disposal channels brings consumers to throw away the garments (Hvass 2014). Other times however, there is simply not the option of returning worn garments to their producer. This falls back on the concept of extended producer responsibility (EPR), an environmental policy which describes the duty of producers to consider the post-consumption stage of their products. This implies that producer have to execute adequate methods of end-of-life treatments for their products and packaging (Lifset, Atasu & Tojo 2013; Organisation for Economic Co-operation and Development 2001). So far, the consumer was solely responsible for the afterlife of his or her garments (Hvass 2015). But this shift of responsibility upstream encourages producers to plan ahead possible treatment or disposal options and even integrate it at the product development stage (Organisation for Economic Co-operation and Development 2001).

The European Union has already implemented an EPR legislation for electronic appliances. In Germany, electrical retailers are obliged to accept old appliances for a suitable recycling in respective to minimize environmental harm (German Cosumer Advice Center 2016). As there are still no such regulations for the fashion industry, the main responsibility lies within the retailers themselves to act and to offer such solutions to their customers. One of the many options a retailer or producer has to take responsibility, is to prolong the life cycle of garments in form of second-hand business models. This study will therefore examine these reverse value streams with the purpose of reuse with the focus of independent multi-brand fashion retailers.

![Diagram of supply chain with reverse logistics](Figure 1: Forward and backward flow in supply chains (modified from Gupta, 2013))
1.2 Purpose
In the context of the prior described background, this paper will investigate the value stream of a traditional fashion retailer entering the second-hand business. At the same time, possible challenges and potential areas of improvement should be identified. Accordingly, the implementation of a reverse logistics on a small-scale level for an independent multi-brand fashion retailer is studied. The second-hand retail concept aims to offer customers a more sustainable alternative for shopping. There are manufacturing brands such as Filippa K who are already implementing take-back schemes and reselling their collected garments in separate retail channels. Another example is the British retailer Marks & Spencer, who collaborated with Oxfam to offer product take-backs (Fletcher & Grose 2012). However, there is a clear research gap regarding small-scale independent multi-brand fashion retailer in the Swedish market that are operating with multiple brands. To serve the purpose, a case study was conducted to describe key activities and formulate suggestions for optimization. The following research questions shall be answered in the course of the paper:

RQ1: How is the value stream of the reverse supply chain with the purpose of reuse structured at a small-scale independent multi-brand fashion retailer?

RQ2: How can the existing structure of the reverse logistics presented in the case study be optimized?
2 Literature Review

The purpose of the literature review is to give an insight into the theoretical concepts within the topic and to get an overview of what is written about them. It aims to give a better understanding and sets the basis of the discussion of the case study. Since the studied case is a Swedish fashion retailer, the focus is in parts on Scandinavian literature. The chapter focuses on the concept of reverse supply chains and begins with an introduction to the concept of circular economy as a starting point of that. Furthermore, the processes and benefits of reverse logistics are depicted in detail as well as a differentiation towards forward supply chain. After that, reuse - on which the later introduced case study focuses - as an approach of product recovery is explained. Finally, a short overview of performance measurement of reverse logistics is given.

2.1 Circular Economy

Around 20 kg of apparel per capita are yearly consumed in developed countries, as reported by the Ellen MacArthur Foundation (2013). In a linear economy, the products are disposed after use and end in landfills. So far, the afterlife of products has not been considered in the linear supply chain. As most of its products value is not recovered after use, it is a very energy and material intensive system. As the linear model is highly productive, it benefits from economies of scale (Ellen MacArthur Foundation 2013). A different approach is the so-called circular economy which is defined as follows:

“A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.” (The Waste and Resources Action Programme 2013)

For consumer goods, which include clothing, the Ellen MacArthur Foundation (2013) describes attempts of achieving a circular economy more complex than for durable products. However, the reuse or cascading of clothing are two options to change the system in a profitable way (Ellen MacArthur Foundation 2013).

It is important to distinguish between different practices within the circular model. The concept of a closed loop implies that the gap between post-use and production is closed. Recycling is therefore used to enable resources to flow in a circular way in the process (Bocken, De Pauw, Bakker & Van Der Grinten 2016). However, the direct reuse of products is considered more favorable in terms of profitability and resource use. The reuse without further treatment is more cost-efficient and saves additional materials (Ellen MacArthur Foundation 2013). This practice is not considered to close the loop, but to slow it down. The lifecycle of products is extended when reusing them, resulting in a slower flow of new resources (Bocken et al. 2016). To achieve a slower loop, products must be designed for the purpose of reuse. Especially clothing must be produced in higher quality to endure several life cycles (Ellen MacArthur Foundation 2013; Hvass 2014). If clothing then reaches a point where reuse cannot be considered anymore or recycling is not possible, it can be used in other industries by cascading the fabric. Ideally, the fabric will then return to the soil by decomposing (Ellen MacArthur Foundation 2013).

A circular economy will lower the demand for raw materials such as cotton or petroleum, which is needed to produce polyester. Accordingly, this will reduce the pressure which is currently on agriculture. Additionally, circular economy is a driver for innovation as
businesses will seek better solutions. One example for the fashion industry are collaborative consumption models (Ellen MacArthur Foundation 2013).

2.2 Overview of Reverse Logistics

Currently, the economy is build based on a linear system which ends at the consumer. In this so-called take-make-dispose system, approximately 80 percent of the used materials go either to incinerators or landfills where the remaining value is lost (Ellen MacArthur Foundation 2013). Hvass (2015) points out that not only this system itself has negative impacts on the environment and social issues, but also on the consumer’s behalf, consumption and disposal habits contribute to these negative impacts.

With the growing public interest in sustainability, reverse logistics are gaining attention. Dowlatshahi (2000) explains that by implementing reverse logistics it is possible to combine financial profitability with environmental goodwill. Not only is this strategy beneficial for the environment, but also for social issues (Sarkis 2010). First, it is important to understand what the term reverse logistics refers to. One of the most prominent definitions in literature is the following:

“The process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing value or of proper disposal.” (Rogers & Tibben-Lembke 1998)

Srivastava (2013) illustrates three main drivers of reverse logistics: economic, regulatory and consumer pressure. Whereby the economic driver is considered the most powerful. With increasing prices for virgin raw materials and the consequences of waste, traditional business models with linear supply chains are becoming vulnerable. Subsequently, businesses should start to develop models which consider the products after the consumption phase (Hvass 2015). It is said that profitability can be increased by reducing costs, increasing revenues and enlarging the target group (Hvass 2014). Regarding regulations, the electronic goods sector is ahead of the fashion industry. Since the year 2001, manufacturers in Europe have accepted returned electronic appliances and recycled them accordingly (Fletcher & Grose 2012). While there is currently no such legislation for textiles, there is the possibility that this might change soon with increasing focus on extended producer responsibility and sustainability (Hvass 2014). It is said that legislations are one of the most effective drivers of reverse logistics (Lambert, Riopel & Abdul-Kader 2011). The value of used products is recovered as the retailer or producer is obliged to select suitable recovery methods (Beh, Ghobadian, He, Gallear & Regan 2016) or proper disposal options (Rogers & Tibben-Lembke 1998). These legislations in other industries make companies more accountable for their products even after they are sold.

As productivity is measured with the proportion of output and input, this indicator can be improved by using resources which usually would go to waste. In other words, disposing products on landfills does not only harm the environment but also the companies’ productivity (Dowlatshahi 2000). By collecting large amounts of EOL products, companies can benefit from economies of scale for the disposal or keep still usable parts of the collected products (Rogers & Tibben-Lembke 1998). It is no longer the end consumer’s responsibility to dispose products properly but the manufacturer himself (Dowlatshahi 2000). Hvass (2014) identified also corporate citizenship as an additional driver for reverse logistics in terms of seeking an environmental sustainable development.

Especially regarding the concern that some materials have a negative impact on human health, reverse logistics represent a benefit. Customers merely need to return products to the
company and can trust in their selection for a proper disposal method for both the environment and human health (Rogers & Tibben-Lembke 1998). Therefore, reverse logistics create intangible benefits to companies. These benefits could be an improved corporate image and competitive advantage which ensure a profitable future in the long term (Hvass 2014).

2.2.1 Reverse Logistics Processes

Reverse logistics describe all involved processes of the backwards flow of products and raw materials from the consumer back to the point of origin. Instead of deposing the product after the consumption, the remaining value can be retrieved (Rogers & Tibben-Lembke 1998). This system connects apparel brands with actors such as recycling or waste organizations who did not work together before (Fletcher & Grose 2012).

There are various reasons for product returns. First, returns can occur during manufacturing and commercial returns from a business to business perspective (Beh et al. 2016). Also warranty and customer service allows the replacement or refund of products for dissatisfied customers, which also counts as commercial returns (Ait-Kadi, Chouinard, Marcotte & Riopel 2012). Another type of returns are EOL returns. Today, customers are stimulated to buy more frequently and in higher volumes due to short product life cycles - especially in the fashion industry (Hvass 2014). This results in products reaching their EOL prematurely, while they are still functional. Whenever there is a more updated product, consumers dispose or return the old product which is then obsolete but not necessarily broken (Gupta & Ilgin 2013).

In general, returns can come from both the consumers and supply chain actors. Therefore, the condition of products returns can vary and each situation must be handled differently (Ait-Kadi et al. 2012). Thus, unlike the forward value chain, reverse logistics are triggered by the consumers who return products to the manufacturer or retailer. Rogers and Tibben-Lembke (1998) identified four crucial steps each reverse logistics systems must include which are gatekeeping, collection, sortation and disposition. Ait-Kadi et al. (2012) distinguish between sortation and the processing step, however the following description is based on the suggestions of Rogers and Tibben-Lembke (1998). Throughout these single steps it is crucial that all parties involved communicate for the best possible outcome (Lambert, Riopel & Abdul-Kader 2011). Tibben-Lembke and Rogers (2002) criticize that the information flow between retailer and processing center about the products and their condition is often inaccurate or does not take place at all.

1. Gatekeeping

Beh et al. (2016) describe that the retailer functions as the gatekeeper, deciding which products go into the reverse logistics systems. The gatekeepers then will forward the collected products to suppliers or consolidation centers. This is the first stage of reverse logistics and according to Rogers and Tibben-Lembke (1998) considered very important regarding the costs. In this stage, the first screening of returned products is conducted to decide if a product passes the point of entry. By detecting a lack of recovery potential early on, efficient gatekeeping helps to manage reverse logistics in a profitable way (Rogers & Tibben-Lembke 1998). Additionally, it is essential to have trained personnel at the gatekeeping stage who are familiar with the respective second-hand market’s needs in order to identify suitable garments (Palm, Elander, Watson, Kiørboe, Salmenperä, Dahlbo, Moliis, Lyng, Valente, Gíslason, Tekie & Rydberg 2014).

2. Collection

In this step the returned products are gathered for the proceedings of the reverse logistics system (Rogers & Tibben-Lembke 1998). Usually, the bundled products collected at the
retailer are forwarded to either consolidation centers or suppliers (Beth et al. 2016). Ait-Kadi et al. (2012) add that this step depends on the complexity of the reverse logistics system. If there is only one processing site, the products are consolidated after sorting and forwarded for recovery treatment. In case there are more processing centers, activities such as in-transit inventory management and transportation between the centers are crucial.

3. Sortation
Each product is screened and tested during sortation to evaluate the value which can still be exploited. Accordingly, products which are not worth being recovered are separated. For the remaining products an appropriate recovery method is selected (Srivastava 2013). Sortation is usually done manually and Palm et al. (2014) predict it to stay that way in near future. While some companies do the sorting internally, others prefer to sell the collected garments after the first screening to external companies for this process (Palm et al. 2014). This stage involves physical needs linked to costs: receiving, warehousing, staff and the handling. Depending on the volume of products and the duration of this step, the costs vary (Ait-Kadi et al. 2012).

The decision for the recovery method is based on the characteristics such as age and condition of the product. Also the stock level and sales potential influence this choice (Ait-Kadi et al. 2012). The selection of the recovery method determines how much value of a product will be exploited. Businesses should consider the three aspects of environment, economy and customer service when deciding on the product recovery (Ait-Kadi et al. 2012). Therefore, a good sortation is vital for the financial success of this system (Rogers & Tibben-Lembke 1998). These possible reprocessing options are listed by Ait-Kadi et al. (2012): “repackaging, repair, disassembling, reconfiguring, remanufacturing, updating or upgrading, recycling, donating, selling them on secondary markets, and disposing them” (p.58)

4. Disposition
According to Rogers and Tibben-Lembke (1998) the last step of reverse logistics is the disposition of the products to the chosen destination.

However, Srivastava (2013) describes the establishment of a reverse logistics system as challenging, involving strategic planning. It must be determined which products are collected, the location of collection, the processing steps as well as the location of the processing. Furthermore, it is pointed out that reverse logistics systems are usually not developed detached from existing logistics structures in a company, but are rather connected to them. While it is said that reverse logistics bring profitability to organizations, there are also barriers for implementing it. Srivastava (2013) identifies the lack of awareness as a major barrier as well as reluctance to change. Additionally, lack of education, financial constraints and inadequate infrastructure in firms can hinder the development. But also external factors such as low public awareness regarding environmental issues and missing recycling technologies are considered as barriers. Ait-Kadi et al. (2012) suggest an integrated information and shipping system to assist the reverse logistics operations. This is especially important to monitor the processes.

2.2.2 Recovery Methods
To complete the four crucial steps of reverse logistics of Rogers and Tibben-Lembke (1998), the prior mentioned recovery options are explained as follows according to Ait-Kadi et al. (2012):
Repackaging
This refers to commercial returns and is merely the process of placing products back in original packaging for resale.

Repair
If a product is diagnosed as profitable for repair, it will be tested after the repair and then either returned to the customer or sold on secondary markets. In case a repair is not profitable, the product proceeds to other recovery processes.

Disassembling
Certain parts of a product which can be reused are taken out during the disassembly. Companies can benefit from this process since material costs are reduced and waste is minimized.

Reconfiguring
In this process, the product is slightly changed in order to resell it. Usually, only small changes are undertaken to still cater to other customer needs.

Remanufacturing
The aim of this process is to make products appear similar to new ones. Therefore, single parts or entire products are altered, which works similar as repair. Remanufacturing makes it possible to work with economies of scale in the replacement of defective parts of products.

Updating or upgrading
Upgrading is especially relevant for computers, as they can be periodically updated. This process adds new functions to a product by adding or replacing parts.

Recycling
First, products have to be disassembled into single components according to material (e.g. plastic, glass, paper). Each material group will then be recycled accordingly. The better the materials are sorted, the more valuable is the recycled output.

Sale on secondary markets
If products do not adhere the quality standards or cater to the markets demand, they will be redistributed to secondary markets. Often products are exported to developing countries. If a business does not see potential for reuse, donations can be considered.

Disposal
The last alternative is a disposal. If products cannot be recovered in any of the above mentioned processes, they are forwarded to landfills or incinerators.

2.2.3 Reverse Logistics Applications in the Clothing Industry
Different factors such as awareness and attitude towards recycling, available infrastructure and cultural background of consumers influenced the disposal decision (Hvass 2015). Therefore, the consumer should be labeled as redistributors as they contribute and trigger any reverse logistics (Britwistle & Moore 2007). By educating and influencing consumers’ attitude towards sustainability, retailers have the power to contribute to reuse and recycling practices (Goworek, Fisher, Cooper, Woodward & Hiller 2012). An increased consumer
knowledge is not only beneficial for the environment, but also for companies. When consumers start to view textiles as a resource which can be recycled, the volume of returned garments is increased (Ekström, Salomonson, McDonagh & Prothero 2014).

Hvass (2014) identified three major strategies in the fashion industry to implement reverse logistics in respective of reuse or recycling. The first one is a partnership with charity organizations where brands donate garments to. This option is convenient, as brands can rely on the charity organizations’ long established expertise and facilities. The second possibility is to introduce take-back schemes where brands collect used garments in exchange for a voucher. Often, this works in cooperation with a third-party specialist who organizes the reverse logistics. An example is the fashion retailer H&M, which collects used garments in their stores and partnered up with I:CO for the processing. The benefits for the fashion brand is that they can concentrate on core activities but at the same time offer professional reverse logistics. Hvass (2014) points out that these in-store take-back schemes drive customer loyalty, traffic and highlight the company’s efforts regarding sustainability. Thirdly, there is the option to manage the EPR and reverse logistics internally. Especially for brands selling high-quality products, there is a potentially high value in reselling them as second-hand products. Nevertheless, even though Filippa K and Patagonia belong to this third group, they decided to enter into partnerships. In this case also, brands profit from their external partners’ know-how and resources. Concluding, Hvass (2014) argues that collaborations for reverse logistics is an important aspect in the fashion industry.

Additionally, to the responsibility to recover products in a suitable manner, companies have the responsibility to educate consumers and raise awareness towards this topic. There is still a lack of consciousness among consumers in regards of disposal and its environmental effects. This is an opportunity for companies to engage in a dialogue with its customers about product use and disposal which can ultimately enforce better engagement in take-back schemes and strengthen loyalty (Hvass 2014).

### 2.3 Differences Between Forward and Reverse Supply Chains

As reverse logistics start at the consumer and is not initiated by the organization itself, this system is hard to predict and to plan in advance (Beh et al. 2016). Since the return of a product triggers the reverse logistics processes (Ait-Kadi et al. 2012), it is considered to be a reactive system (Tibben-Lembke & Rogers 2002). Firms are confronted with uncertainties in reverse logistics regarding the quantity, quality and location of returned products by consumers. Alshamsi and Diabat (2015) also point out that reverse logistics are more complicated due to the higher uncertainty of supply which represents the major challenge. Traditional forecasting techniques do not apply here and need to be adjusted (Srivastava 2013). Accordingly, there is less visibility throughout reverse value streams (Tibben-Lembke & Rogers 2002). In order to be able to retrieve value from returned goods it is important to work actively with quantity and timing of returns. In his study Srivastava (2013) explains that the dimensions to characterize reverse logistics are volume, timing, quality, product complexity, testing complexity and remanufacturing complexity. All of them play a very important role for the reverse logistics system. Therefore, managing reverse logistics is considered to be more complex than traditional forward value streams. Overall, the management of reverse logistics has become a crucial activity from a strategic point of view (Srivastava 2013). As mentioned prior, reverse logistics are triggered by the consumer, companies need to draw attention to awareness-raising activities. This is crucial for companies working with own-operated second-hand stores or take-back schemes in the apparel industry. Currently, companies do not have control over the disposal habits of its customers and therefore companies can tie in with marketing strategies to consciousness about disposal.
options and their consequences. With an increasing number of customers returning garments to the retailer, second-hand stores have more stock, more traffic and subsequently sales increase (Hvass 2014).

In reverse logistics, the products are collected from many-to-one, meaning individuals bring their product to a collection point from where they are forwarded to product recovery centers - unlike in forward value streams, where transportation is one-to-many (Gupta & Ilgin 2013). Also Tibben-Lembek and Rogers (2002) identify the many-to-one transportation as the most prominent difference. The main cost point in e.g. second-hand retail are the reverse logistics behind it. The many-to-one system increases the costs as products have to be collected first, then forwarded to the processing center and finally distributed to retail (Hvass 2015). To reduce additional costs and to design the logistics efficiently it is suggested to combine forward and reverse transportation. The same truck delivering products can pick up the returned ones (Tibben-Lembke & Rogers 2002).

Regarding the transportation of products, new products come with packaging and tags so they are protected and easy to identify during transportation. While returned products are lacking packaging and tags, it makes the transportation and handling much more complicated. However, in reverse logistics there is less pressure on transportation time than in forward logistics as there is no customer waiting for an order (Gupta & Ilgin 2013). However, Srivastava (2013) argues that quick and efficient disposition of returns are important for profitable reverse logistics. There is also more time and effort necessary to sort and screen returned products. While newly produced products have standardized quality checks, each returned product is different. Therefore, the time spend for sorting but also further processing can vary between products (Gupta & Ilgin 2013).

Another major difference to forward value streams is identified: the cost calculation. Gupta and Ilgin (2013) explain that firms working with used garments compare in the first step the possible revenue of recycling or reusing products by considering processing and collection costs. This form of calculation is called cost-benefit function and simply subtracts the revenue from the costs.

Managing reverse logistics should however not be seen separated from the forward value stream. In order to be successful, firms need to think of their products in the long-term and consider value recovery already at the product development stage (Srivastava 2013).

### 2.4 Reuse as a Recovery Method

In order to protect human health and the environment, the European Commission created a waste management hierarchy in the context of the waste legislation which serves as a framework for all EU member states (European Commission 2016). As displayed in figure 2, the first activity in this pyramid is reuse of products. Dyckhoff et al. (2004) explain that reuse is when products stay as they are without any additional treatments and are used again for the original or for a different purpose. These products are then called “second-hand” products. While an increasing demand for second-hand clothing can be observed in Scandinavia and awareness has increased in politics, there is still no legislation controlling textile disposal (Palm et al. 2014).

In the apparel industry, the reuse of products is a long existing concept, accounting for the biggest share of value recovery (Beh et al. 2016; Fletcher & Grose 2012). Currently, the second-hand market experiences a revival in the context of the affordable, fast changing fashion landscape (Fletcher & Grose 2012). In the Scandinavian countries alone, a growth rate of 20% could be observed between the year 2011 and 2012 in the second-hand clothing sector. This development can be explained by improved market conditions for used garments and increasing consumer awareness (Palm et al. 2014). Currently, non-profit organizations
constitute the largest part of western second-hand markets. However, more and more private consignment stores, online platforms for second-hand clothing and clothing libraries entered the market. Fashion brands themselves start to introduce initiatives to act upon ERP and offer to take back products for reuse or recycling (Hvass 2015).

Figure 2: Waste hierarchy (modified from European Commission 2016)

The motivators for consumers to donate their garments are fast changing trends, growing interest in charity and an overall increasing acceptance of second-hand stores (Birtwistle & Moore 2007). The fast fashion trend is considered to be one of the main drivers for this market as the potential supply of used garments is increasing. As Palm et al. (2014) report, especially women’s clothing account for a big part of returned garments due to their higher level of consumption. Between the years 2000 and 2009 the level of clothing and household textiles has increased by 40% in Sweden alone (Palm et al. 2014). Additionally, there is still a lot of wastage-in-use. This term describes that people own clothes which they seldom wear due to poor fit, changed taste or fashion trends (Ellen MacArthur Foundation 2013). However, with fast and cheap production, the quality is decreasing which makes the garments often not suitable for reuse but rather for recycling (Palm et al. 2014). Respectively, the luxury second-hand stores are a growing business sector. These businesses are not linked to companies but rather function as middlemen in the customer-to-customer area. Usually, the second-hand business is based on a commission model and non-selling items are returned to the owner. But also the private sale of used garments is increasing and competing with second-hand retail (Palm et al. 2014). Second-hand retailing is considered to be a more sustainable business model which supports the reduction of waste and delivers value (Beh et al. 2016).

An increasing amount of clothing donations could be observed and therefore it is assumed that people are more willing to clean out their wardrobe than ever before. Furthermore, it is noticeable that donated clothing is in relatively good condition since consumers often have a lot of garments which they actually do not use (Birtwistle & Moore 2007). However, there is still potential in Sweden as it is estimated that the collection rate of textiles amounts to only 20%. While 90% of the second-hand market is represented by charitable organizations, only a small part represents private stakeholders (Palm et al. 2014). But also in other countries charitable organizations have been working with reusing textiles and developed well-working systems of sorting, distributing and selling the collected
garments. An example from the US is Goodwill and from the UK the organizations Oxfam and the Salvation Army. The most commonly form of reuse is the direct reuse of garments. The main benefit from an environmental perspective is saving resources by prolonging the life cycle of already existing products. Still, only around 10 percent of reused clothes are resold on the same market, the rest is exported abroad (Fletcher & Grose 2012).

Yet, reuse and recycling practices must be seen from a critical perspective as well. While it is argues that these methods help reducing waste and using existing products more efficiently, they do not solve the actual problem. While buying habits and production need to be adjusted to a more sustainable one, reuse is only minimizing the effects (Beh et al. 2016). As Hawley (2006) points out, consumption is stimulated by fashionable goods, seizing consumers’ interest and creating profit. Subsequently, with an increasing pace of consumption, the amount of waste will increase as well. Starting with second-hand retail can be the first step to work towards a more sustainable fashion industry and might slowly transform it (Beh et al. 2016).

2.4.1 Economic Benefits of Second-Hand Retail
In many industries, recycling or remanufacturing is a commonly used method as part of the reverse logistics system. However, in the apparel industry, it is not well-established yet. Second-hand retail as a new business model allows an extended product life cycle of pre-owned garments, sold by the original retailer. These products have reached the maturity stage in their life cycle or started already to decline (Beh et al. 2016). The life cycle extension by reusing a garment can save up to 95 percent of the energy necessary to produce a new garment. By conserving raw materials and saving energy, the reuse of apparel without further value adding steps is considered to be sustainable (Fletcher & Grose 2012). But not only the environment, also business efficiency benefits from reusing products and capturing left value (Beh et al. 2016). Companies can generate additional income by selling second-hand products or samples from previous seasons (Hvass 2015). The increasing consumption and quick disposal made reuse attractive again (Fletcher & Grose 2012). The Scandinavian market provides all requirements for a reuse market: a growing demand for used apparel can be observed and prices for collected textiles are relatively high. Scandinavians are willing to separate their waste which is beneficial for textile collection. Increasing competition and new market entrants come along with the growing demand. Accordingly, the competition around collecting used textiles from a company’s perspective has intensified as well (Palm et al. 2014). Additionally to reducing waste, Beh et al. (2016) point out that second-hand retail contributes to democratizing fashion as garments are offered at more affordable prices. Therefore, a broader consumer base is reached and loyalty with existing customers strengthened. Existing customer groups need to be redefined when introducing a second-hand store (Hvass 2014). Today, people do not shop used garments merely due to economic reasons. The motivation for second-hand shopping range from excitement due to the high variety of products, rare products, bargain hunting, social interaction, distance to the traditional market as well as environmental consciousness (Hvass 2015).

2.4.2 Managing Second-Hand Products in Retail
Managing a second-hand apparel store requires a different approach than traditional retailing (Beh et al. 2016). Nevertheless, Hvass (2014) suggests that second-hand retailing should be the first step for companies to move towards a more sustainable strategy. Especially for brands with high quality products there is a lot of potential for reuse. While the stock in traditional retail is based on forecasts and controlled by the retailer, second-hand supply relies on consumers engaging with the business. This circumstance brings uncertainty in terms of product quality, quantity and timing of supply (Hvass 2014). As mentioned previously, it is
not possible to order or redefine the desired merchandise. Buyers can only purchase what is available and this is hard to forecast (Beh et al. 2016). Hvass (2015) reports in her case study that the merchandise is the success factor for retail and therefore second-hand stores are heavily dependent on their customers. Consequently, second-hand stores need to encourage consumers to participate in the concept. Strong brand awareness and market maturity help ensuring constant flow of supply (Hvass 2014). Only if consumers are informed about take-back schemes and the benefits of reusing or recycling textiles, the volume can be increased (Ekström et al. 2014). Factors such as convenience of the take-back scheme as well as marketing and communication techniques can motivate customers to engage in the second-hand concept (Hvass 2015).

Regarding the processes involved for reverse logistics for a second-hand store, there is little experience and knowledge in companies. There are currently no legislations or best practices which could function as a guide. Furthermore, there are different possibilities to structure the processes of product returns, collection, storage and disposition (Hvass 2014). The reverse logistics that are required for a second-hand store need to be designed cost-effective and convenient for the market. However, this represents the biggest challenge in second-hand retailing (Hvass 2015). Additionally, retailing, redistribution and marketing for second-hand channels require a different approach as well (Hvass 2014). Furthermore, it is said that the infrastructure of handling used garments can be improved by increasing the amount of collected textiles, especially in regards to the Scandinavian market. In order to be more profitable, it is suggested to improve consumer engagement in returning discarded textiles (Palm et al. 2014).

As the reuse of garments is not a new phenomenon, it is new for fashion brands to join this market (Hvass 2015). Still, the Swedish mid-priced fashion brand Filippa K started a second-hand store in Stockholm selling only their own brand (Fletcher & Grose 2012). Next to the used garments, the brand also sells samples from previous seasons which additionally attract customers (Hvass 2015). Since the year 2008 this concept is managed as a non-profit organization by Filippa K. Customers can return unwanted garments to the brand which are then resold in the second-hand store based on commission. Garments which do not sell, are returned back to the customer (Fletcher & Grose 2012). Birtwistle and Moore (2007) report that other second-hand concepts keep non-selling clothing for recycling and avoid letting anything go to waste. The brand manages the concept by itself and selects carefully the garments for the second-hand store. It is a strong statement that Filippa K is communicating and from which the brand also benefits (Fletcher & Grose 2012). Hvass (2015) conducted a case study on Filippa K’s second-hand business model and describes their high-quality and timeless designs as a prerequisite for reuse. Birtwistle and Moore (2007) confirm in their study that good quality products increase the sell-through rate (50-75 percent) and enable merchandise to sell within two weeks.

2.5 Performance Measurement in Reverse Logistics

In order to monitor an implemented strategy and its success as well as processes in general, performance measurement is essential in assessing the influence. As (Bullinger, Kühner & Van Hoof 2002, p. 3534) point out, “only something measured improves”. This refers not only to the economic and financial success of a company but also the overall performance of the supply chain and in the particular case of reverse logistics, social and environmental aspects (Piotrowicz 2011). Another benefit of measuring a company’s performance is that it can offer a basis for planning new actions and strategies as well as for making decisions on an operational level. In addition to this, it can also be used to communicate the results to business partners and employees and to motivate them as well as to reduce risk by foreseeing...
underperforming processes and problems and reacting accordingly (Piotrowicz 2011). In terms of sustainability in particular, the company’s social and environmental impact can be observed. These results can be used to communicate and promote a positive image and to try to reduce negative impacts (Piotrowicz 2011).

A common method for performance measurement can be the Supply Chain Operations Reference (SCOR) model (Piotrowicz 2011). However, in terms of reverse logistics, the balanced scorecard (BSC) approach can be found in most literature (Mohammed & Walid 2012). It indicates how certain outcomes can be achieved by looking at the supply chain from the following four perspectives (Kaplan & Norton 1992):

- **Customer perspective** – How is the company perceived by the customer?
- **Internal perspective** – What must the company excel at?
- **Innovation and learning perspective** – How can the company improve and create value?
- **Financial perspective** – How is the company perceived by the shareholders?

While the financial measures show the outcome of the actions that were already taken, the operational measures, which reflect the other three perspectives, drive the future of the financial performance (Kaplan & Norton 1992).

Mohammed and Walid (2012) suggest an adaption of this BSC for reverse logistics that includes two additional perspectives: social and environmental. They point out that the stakeholder perspective – which is an alteration of the aforementioned customer perspective (according to Kaplan and Norton 1992) – is the most important one. For each perspective several measures are defined (see figure 3). Piotrowicz (2011) also proposes a similar approach to a performance measurement for sustainable supply chains that sums up to three perspectives: social, economic and environmental - which include sub-perspectives such as health and safety, efficiency, responsiveness, emission and waste. Aït-Kadi, Chouinard, Marcotte and Riopel (2013) suggest an approach in which they categorize various performance indicators in three levels - strategic, tactical and operational - which can be linked to several processes of reverse logistics. All mentioned authors suggest similar indicators such as customer satisfaction, safety, cycle/process time, days of inventory, quality of goods, resource utilization and transportation costs. But as Piotrowicz (2011) points out, the selected measures need to be suitable for the company and reflects its strategy as well as the according customer segment.
Figure 3: Performance measurement for reverse logistics: perspectives and measures (modified from Mohammed and Walid 2012, p. 31)
3 Methodology

This chapter aims to give a clear and transparent description of the processes of the study. The first part presents an overview of the research strategy and design. It is followed by a discussion of the choice of data collection methods as well as the analysis method of the data. Finally, the quality of the research in regards to validity and reliability is discussed in the last section.

3.1 Research Strategy and Design

The studied topic and purpose were found and developed based on the research gap and the current relevance in it. After a short preliminary literature review into the topic the initial idea was further refined and the research questions were formulated. The literature review and the preparation of the research methodology were performed at the same time at the beginning of the process in order to find enough theoretical information and to develop the further process.

A case study research design was chosen to answer the research questions. According to Woodside (2010), a case study research design is used to describe and understand an individual. This individual can be a person, a group or an organization. Additionally, case studies are used as empiricism to investigate the context of present phenomena in a descriptive manner. The case that was chosen to be studied within this research is a Swedish multi-brand fashion retailer. It is located in a popular shopping area in Stockholm and is usually well attended. As one of few multi-brand retailers, the company started a second-hand concept in addition to their regular stores at the same time as the research for this thesis begun. Therefore, due to the rarity of such a concept on the Swedish market and its current relevance it offered a suitable example for the case study. In addition to this, it was selected due to its cooperation with The Swedish School of Textiles in their participation in the
research project Re:Textile. This project includes several studies that all aim to develop new business models and design and logistics processes to reduce the consumption of resources (University of Borås 2017).

The data collection was done in a qualitative manner with the use of observation, personal communication and a semi-structured interview which is often favored for case studies due to the detailed insight into a case (Bryman 2012). The data analysis method of value stream mapping which was conducted after the data was gathered, reflects a descriptive approach. It is especially useful in qualitative research since it is detail-oriented but also shows the results in a certain context (Bryman 2012).

### 3.2 Data Collection: Process Observation and Semi-Structured Interview

The collection of all required data was gathered by observation, personal communication with the responsible managers and a semi-structured interview. The aim was to understand all involved processes of the selected case in order to create the value stream map as well as understanding the company’s ambitions and expectations. All tools were essential to answer the first research question¹ while especially the observation would serve to identify any possible improvements and thus, to answer the second research question².

The first draft of the interview guide was developed based on the literature review, to help focus on the important aspects that needed to be examined during the observation. The full interview guide can be found in the Appendix I. However, the observation of the reverse value streams and the personal communication were conducted before the interview. This helped to incorporate questions in the interview that came up during the observation. The observation was conducted in person in the retailer’s second-hand store in Stockholm and focused on the processes from collecting the garments from the customers to re-selling them in the second-hand store as well as the way the garments were handled. The observation lasted approximately two hours and included the process of the return of the used garments by a consigner and the handling by the store manager of the second-hand store including acceptance, determination of the price and preparation for sales. During the whole process, personal communication with the store manager was taking place as he commented on the several steps and explained and justified decisions. Thus, questions concerning individual steps, motivation for rejecting products and the overall process could be answered flexibly in the same moment.

The interview was conducted as an in-depth semi-structured interview in order to be more flexible in the follow-up questions and to get a holistic overview of the processes (Bryman 2012). The interviewee was the marketing director of the company who is also one of the two co-founders. This led to an in-depth insight into the company processes as well as the motivations and background ideas. The questions were mainly formed as open questions to give the interviewee the possibility to answer in his own terms in order to explore the researched area (Bryman 2012). They were clustered into topics and aimed to answer any questions that came up during the observation or that were still open after that. In addition to this, the interview served to distinguish if the observed situation was the standard case or differed from it due to special circumstances. The interview was conducted in the head office of the retailer in Stockholm and the total time was 1 hour and 4 minutes. Since the interview

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¹ RQ1: How is the value stream of the reverse supply chain with the purpose of reuse structured at a small-scale independent multi-brand fashion retailer?
² RQ2: How can the existing structure of the reverse logistics presented in the case study be optimized?
guide had been adjusted after the process observation and the personal communication, all questions were answered and no follow-up questions had to be sent afterwards.

3.3 Data Analysis: Value Stream Mapping

As a tool for analyzing the collected data, the method of value stream mapping (VSM) was chosen. In terms of forward supply chains it means to “follow a product’s production path from customer to supplier, and carefully draw a visual representation of every process in the material and information flow” (Rother 2009, p. 2) which is usually done as a flow chart (Howell 2013). The aim of tracing the production steps and mapping the flow of the value stream visually is to identify the sources of waste in order to eliminate them and to thus only include the value-adding processes (Howell 2013; Rother 2009; Weiss 2013). The method derives from Toyota Production Systems (Haefner, Kraemer, Stauss & Lanza 2014; Howell 2013; Stadnicka & Ratnayake 2016) and is thus closely connected to a lean manufacturing approach which focuses on eliminating waste in the manufacturing processes and on improving the value stream flow. In this case the method served to map the processes of the reverse supply chain for the second-hand concept and to visualize the flow of materials - i.e. second-hand garments - in order to make it easier to identify areas of improvement and to make them apparent to help discuss changes (Rother 2009).

The first step was mapping the current-state of the value stream which was done by collecting the relevant information from observing the processes in the facilities and drawing the chart accordingly. This current-state map that was created based on the collected data served to answer RQ1 but also presented the base to find areas of improvements and to thus answer RQ2. This was done in the second step by examining the current-state and comparing the theoretical information found in the literature review to develop a future-state map. This is a crucial part, since - as Rother (2009, p. 7) points out - “a current state without a future state is not much use” because the original purpose of VSM is to improve the current state.

The process of the value stream mapping followed the following steps:

1. Collection of data through observation, personal communication and interview
2. Comparison of the gathered findings
3. Definition of symbols for the map
4. Drawing the current-state value stream map
5. Examination of the current-state map in regards to what can be improved and comparing with the studied literature review
6. Drawing the future-state value stream map based on the analysis of the current-state map

3.4 Quality Criteria and Assessment of the Research

The main criteria for the assessment of a scientific research are reliability and validity. The quality of case studies in particular can be evaluated with four criteria: “internal validity, construct validity, external validity, and reliability” (Gibbert, Ruigrok & Wicki 2008, p. 1466). For qualitative research however these criteria have to be altered (Bryman 2012).

External validity refers to the generalizability of the results of the research outside of the studied context (Bryman 2012; Gibbert et al. 2008). Since the case study of this research concentrates on a rather specific case, the generalizability of the results is only possible to a certain extent. The selection of the sample however has been explained in detail above and represents other small-scale multi-brand fashion retailers well which is why the results can be applied to other similar companies.
The extent to which the used methodology for the thesis leads to a logical connection to answering the study purpose is reflected in the *construct validity* (Bryman 2012). Since the researched area is still not explored very well, a case study of the new project of the multi-brand retailer was found most suitable to study this research gap. The selected case was based on its rarity in the fashion business and due to its current relevance. The data collection with the use of observation, conversations and a semi-structured interview allowed the collection of a holistic overview of the case. In addition to this, the analysis in form of the value stream mapping ensured that both research question can be answered to the most fulfilling extent. Both observation and unstructured interviews can be used well for a “detailed examination of a case” (Bryman 2012, p. 68).

*Internal validity* is given when a logical argumentation and connection between the researcher’s findings and conclusions are provided. In order to strengthen the overall validity *triangulation* can be used (Bryman 2012; Gibbert et al. 2008). This “entails using more than one method or source of data in the study” (Bryman 2012, p. 329). In this thesis the triangular approach can be found in the data collection. Due to a tight time frame, the process observation could only be conducted once. Therefore, to ensure that the observed sequences represented the usual process, the semi-structured interview was conducted. By comparing the information that was gathered during the observation with the one obtained from the interview, the risk of collecting data from an exceptional case was reduced. Additionally, the observation was guided by the store manager of the second-hand store who was in charge of the processes in order to answer upcoming questions. This personal communication as well as the interview with the marketing director of the retailer ensured that the gathered information was confirmed double.

**Reliability** concerns the replicability of a study (Bryman 2012; Gibbert et al. 2008). In order to ensure that the case study could be conducted in the same way by other researchers, a detailed description of the methodology and the different steps involved were provided in this thesis.
4 Case Study: APLACE

This chapter depicts the researched case study of the second-hand concept of the Swedish multi-brand retailer “APLACE”. The findings of the study are presented after a short overview of the company is given. The chapter is concluded with the analysis in form of a value stream mapping which includes a depiction of the current state of the company’s reverse value stream as well as a suggestion for a future map.

4.1 Company Profile

APLACE is a Swedish independent multi-brand fashion retailer which is based in Stockholm. The company started as a fashion magazine - “ODD at large” - in 2005 with the purpose to promote Scandinavian people in the fashion industry. After that a series of events with the name “+46” were created which took place during fashion week in Stockholm and consisted of parties, exhibitions and fashion shows. Since the year 2007 APLACE exists in its current form as a fashion retailer with three stores in Stockholm and one in Malmö. Additionally, the company operates its own online shop. APLACE offers various products from primarily Scandinavian contemporary brands, with the exception of footwear from well-known international brands like Adidas, Nike and Puma. The products range from garments, shoes and accessories for men, women and kids. Additionally, goods such as interior decoration, books and other gadgets like key chains are included in the product portfolio. One of the three stores in Stockholm is “Pearl” - the second-hand store which opened in April 2017. Prior to that the shop served as an outlet where garments from previous seasons were sold. The second-hand concept has been developed with the idea to sell used garments that customers bring back. The value streams of these processes were studied and analyzed for the case study of this thesis.

4.2 Findings

The findings of the case study are illustrated in the following chapter. All the information given below was gathered from personal communication with the store manager of the second-hand store as well as process observations and an in-depth, semi-structured interview with the marketing director, who is also one of the two co-founders of the company. In the following, the term consigner will refer to anyone who returns used products to APLACE for reuse. Whereas, the term customer will refer to anyone buying used items at the Pearl second-hand store.

4.2.1 Motivation and Background

Before APLACE made the decision to open the second-hand store Pearl, a pilot project was conducted. The idea was to test the acceptance around half a year prior to the opening. The employees offered their used clothing in the outlet store for sale and tagged them as second-hand garments. During this pilot run, a few hundred items were sold and as the director reports, they sold out very fast. The amount of time for the pilot was short and the pricing relatively low, but nevertheless, a high interest in second-hand products could be observed. Additional to the pilotrun, a survey in the area Hornstull, where the outlet was located, showed that there is a high interest in second-hand stores. These observations built the base for APLACE to develop the second-hand concept named Pearl.

In the interview with the marketing director of APLACE, the following three main benefits could be identified linked to the second-hand store:
1. Economics
The first and most prominent aspect is the economical one. APLACE leased a store in Hornstull, a popular location in Stockholm with high footfall. The outlet, which was originally located there, did not perform very well from a financial perspective. Therefore, APLACE had the choice to either close the outlet or change the concept of it. With the existing interest in second-hand products in this area and higher margins in the second-hand business, APLACE decided for the latter: to change the concept. From this perspective on, the director reports that the second-hand store has higher sales figures than the outlet store since it opened two weeks ago.

2. Sustainability
The aspect of sustainability is another benefit for APLACE. With the second-hand store, the company wants to integrate sustainability in their business model and move towards a circular economy. It is a great motivator for the business to develop further in terms of sustainability.

3. Branding
Lastly, APLACE uses its second-hand concept Pearl as a sub brand to improve branding. While both concepts are clearly separated due to their different approaches, they work closely together when it comes to communication and branding strategies. At the moment, Pearl is perceived as a new concept of the already established name of APLACE. But as the director points out, it is very likely that this will shift in the future and APLACE will benefit from the positive image of the sustainable second-hand option that Pearl offers.

Overall, the director explained that this concept is a win-win situation in terms of sustainability and economics. While implementing ideas of sustainability, APLACE has increased their profit compared to the prior existing outlet store.

4.2.2 The Concept
While the description of Pearl says “pre-loved fashion and goods”, the store currently only sells clothing, accessories and shoes. Within these categories, the focus is mainly on Scandinavian fashion but international labels are also accepted. Anyone can return clothing, accessories, sunglasses, shoes and related product categories to the APLACE stores or directly to the Pearl second-hand store in Stockholm. Consigners have not returned any other product categories yet, because the store has only been promoted as an apparel second-hand store so far. In the future, the director aims to sell interior products as well, however more as statement products and less with the focus on volume. In addition to used products, the store will still be used as an outlet channel where products from previous seasons are tagged as “never worn” and sold with a discount. However, the amount of outlet products in Pearl is currently relatively low. As the location shows high footfall, it is planned to support the concept by adding further product categories such as soap or gadgets at the full price. Summing up, the concept is described by the director as interesting and progressive with great customer and consigner communication. With this approach, APLACE is confident that there is no comparable second-hand store in Stockholm. It is their goal to create a niche within this market for a clear positioning. The idea is to have a good selection of brands and to accept no fast fashion products. Subsequently, customers do not have to spend a lot of time browsing through the merchandise to find something. In addition to that, it is important for the director that customers have a personal experience and to feel good in the store. The main competitors
are positioned fairly above Pearl regarding the pricing. The director is happy with the positioning of Pearl, offering good quality at reasonable price points. He is convinced that this is where volume and accordingly also the profit is. Generally, he estimates the second-hand market to be large and values the competition in Stockholm, otherwise the consumers would lose their interest.

Currently, Pearl is only represented by one store in Stockholm. As soon as the second-hand store in Stockholm is established and well-functioning, the director would certainly expand the concept to the store in Malmö. There, he sees customers being more aware of environmental issues and sustainable consumption.

4.2.3 The Infrastructure

One of the two main responsible people for the second-hand store is the marketing director of APLACE who is in charge of the strategic and conceptual development. When it comes to operational tasks such as accepting products and communicating with consigners, the store manager of Pearl is the main responsible. Their goal is to have the staff trained in such a manner, that everyone is capable of accepting garments and handling the procedure without any affirmation from managers. The infrastructure of all processes is explained below.

4.2.3.1 Return of Products

Currently it is possible for consigners to return their unwanted garments at the two APLACE stores in Stockholm or directly at the Pearl second-hand store. As the store manager could observe, consigners tend to go directly to Pearl instead of the ordinary APLACE stores for the return. For APLACE it is more convenient when consigners return their garments directly at Pearl as the staff in the ordinary stores are usually very busy and have little time for the processes involved with accepting the garments.

As the director is content with the sales figures of the second-hand garments, he mentions that Pearl is very dependent on consigners returning garments on a constant basis. In the future it might be possible that the concept will be extended and postal returns will be accepted. However, the director mentions that beforehand there must be clear guidelines for the consigners to make the right product selection by themselves.

4.2.3.2 First Selection

For the first selection, the store manager looks briefly at each garment to assess whether it fits to the concept or not. The main selection criteria are brands, style and condition. While fast fashion labels are not accepted, there are no strict rules regarding brands. As the director explains, it is difficult to know every existing brand and to classify them. More importantly, the style of the garments needs to fit into the retailer’s overall concept. However, there is a conflict whether the brand or the style is more important. Then, of course, the garments must be free of stains, damages or smell. The first selection is very important, as the goal of Pearl is to offer a well-selected assortment as a point of differentiation. The director sees a high potential to improve the first selection step to reduce time and costs in the further processes as well as to have good relationships to the consigners. He describes this stage as very difficult to standardize in terms of decision making. Experience is in his opinion an important aspect. It can be learned whether customers compromise quality or style for a very popular brand, or the other way around. Being closely in touch with customers, knowing what they are looking for and listening to their opinions will facilitate the first selection process in the future. Therefore, every employee is allowed to accept returned garments, conduct the first selection and negotiate prices. In case the employees do not have time to conduct a proper selection, they accept everything and contact the consigners at a later point about which products are
accepted and which not. The second-hand store manager reported that there have been some misunderstandings regarding the selection criteria in the startup phase and consequently some unsuitable products have been accepted. Subsequently, a meeting is planned to inform all employees about the quality and style standards for the second-hand concept. It is important to train the staff regarding the selection criteria to have efficient processing. There are rough guidelines developed by the retailer stating that stained or damaged products cannot be accepted. While the director is so far pleased with the overall quality of returned garments, he points out that there is room for different interpretation of quality and style. However, this depends heavily on the product category. While shoes might look used after they have been worn only ten times as e.g. the leather cracks, jersey fabric is more durable. In the future, it is considered that the selection will be increasingly picky in case Pearl has enough supply.

When it comes to the quantity, the director is not worried about having too little supply. Nevertheless, the director estimates the quantities of returned garments to decrease slowly over time. Before the second-hand store opened up, APLACE run marketing campaigns to encourage consigners to return their garments. The director expects the effects of this campaign to even out. As an optimum, the store would accept and sell the same amount of garments each week in order to avoid stock building. Furthermore, it must be observed how seasonal products are handled. But the ideal case is to collect them in-season and display them right away instead of a pre-season collection and stocking.

4.2.3.3 Collecting Products

As mentioned before, currently most of the products are directly returned at the Pearl second-hand store. Nevertheless, there are few returns at the other two APLACE stores in Stockholm. These are then first collected in the storage room of the headquarters. Once a week the store manager of Pearl collects these remaining returns from the headquarters. Therefore, it is possible that some garments are stored one week until they are further processed. The director is satisfied with the fact that most of the consigners return their unwanted products directly at Pearl as this saves time and accordingly money. If there was a large number of returns at the APLACE stores, additional staff would be necessary in order to manage the returns. The director points out that the second-hand store has very limited space for storage and therefore difficulties in handling too much supply. At Pearl there is only one clothing rack which serves as a storage option for the collected garments until they are ready for sale. If there are too many products, some have to be transported back to the headquarters’ storage and then brought to the second-hand store if there is available space.

To reach a broader consigner base, the director could take into consideration offering postal returns. Therefore, he suggests providing the consigners with clear guidelines to make a good selection. Overall, the director is confident to keep all processes in-house even if the company is expanding.

4.2.3.4 Accepting Products

When the first selection is done, each product will be manually noted down naming product category, color, brand, size and price. Furthermore, name and contact details of the consigner are collected. Together with the consigner, the price is negotiated. In the store, the staff has guidelines which assist them. In case of any doubt, the store manager explained that the staff can compare the returned garments to similar products that are already in the second-hand store to set a suitable price. When all the data is collected, the consigner receives a receipt. In the observations of the processes, it took around 40 minutes for the store manager to complete
this fourth step for approximately 40 accepted and 7 rejected garments. As the store manager pointed out, this was an exceptional case. Usually, consigners return around 5-10 garments at once.

The director explained that he created the pricing guidelines based on benchmarking with the competition in Stockholm, but also with online competitors. These guidelines offer flexibility and as the director explained, Pearl is still testing the price acceptance of its customers. However, he states that consigners are accepting relatively low prices and trust APLACE in the pricing. In his opinion, this can be explained with the assumption that most of the consigners who participate have good personal economics and see this rather as a good cause and cleaning up their closet than to earning money. He believes that in general people have an emotional connection to their branded garments and are therefore hesitant to dispose them. Furthermore, they do not have the time to create an ad on online second-hand platforms such as eBay or Tradera to sell their unwanted garments themselves. At Pearl, the business is based on consignment, meaning that the risk is shared and Pearl avoids stock building. The revenue share is 60 percent for Pearl and 40 percent for the consigner. After the fixed period of one month, non-selling products are returned to the consigner. The director of APLACE is content with this system as it is commonly used for second-hand retail, but also necessary for this type of business to survive.

4.2.3.5 Inspection and Fine Sorting
In this step, the staff looks more carefully at the returned garments and inspects them for stains or damages. In case the garment is not in the required condition, the consigner will be contacted about it and the garment returned. However, the director is considering to bring the returns to the dry cleaner in case it is necessary. Especially for men’s shirts he believes it is a great idea. The service would cost around 20 Swedish Krona and the shirt would be cleaned and ironed. Depending on the product category and the price, this would be a future option.

4.2.3.6 Transfer Data to the System
As soon as the decision has been made – which garments are being sold – the staff transfers the manually collected data to the Software Smart Consignment. First, an account for the new consigner is created. Through this account, all products of this in the store of this particular consigner are registered and the consigner receives an email as soon as the account is created. If a consigner returns garments several times, the products are added to the existing account. Then, each product will be added to the consigner’s account. All the details such as color, product category, brand, size and price must be filled out. The system also generates an individual number for each product.

4.2.3.7 Preparation for Sale
After the product is registered in the system, the individual number and the price is manually written on a paper tag. Then, the garment is put on a hanger, buttoned, steamed and a security tag is added. This makes the garment smell more neutral and look more presentable. Usually, the products are placed in the store as soon as they are registered in the system, when there is enough space and the staff has time for all the processes. In the best case, when consigners return products directly at the second-hand store it is possible that the products are placed in the store the same day. The preparation for sale is done during the opening hours of the second-hand store when the staff has time. All the steps until the garment is ready for sale still take a lot of time and the director sees potential of improvement. In this context, he mentioned the possibility to motivate the customer to prepare the garments as well as possible to save time in this step.
4.2.3.8 Sale
When a product is sold in the second-hand store, currently the cashier needs to use two different systems. First, in the Smart Consignment program a purchase is created so that the consigner receives a notification. However, for outlet or regular products another system is necessary. Subsequently, then the purchase as to be registered in the ordinary cashier system. This is especially necessary when a customer buys a second-hand product and a new or outlet product. The customer would receive two different receipts, if not all transactions are done in the ordinary cashier system. So far, the director and the store manager are content with the solution as the volumes are still low and it is easy to keep an overview of the transactions. Currently, the share of second-hand products is larger than of outlet products.

As the purchase is registered in the Smart Consignment program, the consigner is notified and can come to the Pearl store to collect his share of the transaction. The consigner can decide whether to go and collect the money after each purchase or wait and bundle the transactions. The director is very confident that this is a good solution tool, however, consigners cannot log into the program. They only get an overview of their products in the email. After the sales period, the consigners are also notified about the pick-up of non-selling items. The director is very satisfied with this form of communication as he benchmarked with other second-hand stores and found their communication was outdated. In case the consigners cannot be contacted and do not pick up their remaining garments, APLACE is working together with the Swedish red cross for a test period of three months. APLACE contacts the red cross about leftover products and donates them.

4.2.3.9 Current Performance Measurement
With all these processes, KPIs are necessary for monitoring and evaluating the concept. Currently, the director explains that the second-hand store uses the same ordinary retail KPIs as the outlet used to have and that the store is equipped with footfall counters. He mentions that there is an emphasis on sales, but he is eager to add KPIs to monitor the ratio of returned and sold items on a weekly or monthly basis as well as sales by item categories. This would help to steer the supply stream. Pearl could create campaigns to motivate more returns or put them on hold.

4.3 Current-State Value Stream Map
In order to depict the aforementioned processes visually, in particular the value stream of the reverse logistics, a value stream map was drawn (see figure 5). This was done based on the instructions that are suggested by Rother (2009). This map shows the current state of the value stream of the reverse logistics processes of the studied case as they are described above in detail. The used symbols were adapted from Rother (2009) as well and adjusted for the specific case. Their explanation can be found in Appendix II.

Since the second-hand concept is currently only taking place in Stockholm, only the three stores located there are relevant to the value stream. The shops depicted in the map are the following:

**Store 1: APLACE Brunogallerian**
This store sells the regular range that APLACE offers. Used products can also be returned to this shop and are brought to the storage at Norrlandsgatan.

**Store 2: APLACE Norrlandsgatan**
The office of the headquarter of APLACE is located above the shop at Norrlandsgatan. The store also has a big storage room in which the used products that are returned to any shop other than Pearl are collected.
Store 3: APLACE Pearl
This shop servers as the second-hand store in which the returned products are being sold. Items can be returned here directly.

The processes that are involved in the reverse logistics are marked in the numerical order in which they are completed. The processes consist of the following tasks:

Process 1:
The returned products are checked by the staff who decide whether they are accepted or not.

Process 2:
The consigner information is manually written down on a form as well as the product information of the accepted garments. In addition to this, the price for the items is determined and noted on the form as well.

Process 3:
The manually noted customer and product information is transferred into the Smart Consignment software in this separate step.

Process 4:
The last step includes attaching a manually written price tag as well as a security tag on the products and finishing touches such as steaming, buttoning the shirts, etc.
Figure 5: Current-state value stream map of the reverse logistics of APLACE
5 Discussion

A discussion of the aforementioned findings is given in this chapter. The findings were examined and compared with the literature review in order to formulate suggestions for improvements. The proposals regarding the value stream and the processes were depicted in a future-state value stream map. In addition to this, further recommendations are presented. Finally, a framework for the performance measurement, adopted for the case, has been worked out.

5.1 Future-State Value Stream Map

Based on the current-state value stream map (figure 5), the findings of the case study were examined and compared with the reviewed literature to formulate possible improvements. While the map helped visualize the value stream and recognize unnecessary processes, the observation in particular offered a good insight into the individual steps. As an outcome of several propositions for changes in the reverse logistics of the studied company, a possible future-state value stream map was drawn (see figure 6). Following suggestions regarding the processes were therefore worked out:

Process 0:
An additional process could be added before the consigners bring in their used items. They should have the possibility or even be motivated to send a list of brands or even photos of the products via email to the store manager of Pearl. The store manager could make a quick preliminary decision if the consigner can bring in the items based on the brand, the condition and the first appearance. As it was observed in the case study, this could be done in advance since certain brands are not accepted at all.

Process 1:
This step - the first selection - would remain unchanged. However, if Process 0 would be implemented, this process could be shorter and more efficient. Since the proper acceptance of the items cannot be completed solely through electronic communication, it is still necessary to check the products separately in the store.

Process 2:
Rather than writing down the customer and product information manually before transferring the data into the Smart Consignment software, these two separate steps should be combined. It saves time to directly enter all information into the software. Since each item is examined separately to register the information and to determine the price in the same step, the price tag can be attached in the same process. Thus, the attachment of the price tag does not have to be completed in the last process.

Process 3:
This step is the last one and is conducted at Pearl. If the processes have been completed as described above, this step will only include the finishing touches of the garments and attaching a security tag. Especially since Pearl does not have a separate storage room, it would be beneficial if the second-hand products were delivered almost finished so that the time until they can be incorporated into the range is held at a minimum.

In addition to the changes in the processes, it is recommended to deliver the returned products from store 1 directly to store 3 (Pearl) instead of transporting them to the temporary storage room of store 2. Additionally, the transportation of products from store 1 to store 3 could occur more frequently. Thus, one unnecessary transportation route can be avoided and the
time between the acceptance of the returned products and the availability in the second-hand store can be reduced.

Figure 6: Future-state value stream map of the reverse logistics of APLACE
5.2 Further Suggestions

In addition to the aforementioned future-state value stream map, further suggestions of improvements have been elaborated. These concern general ideas that could have a positive effect on the whole reverse logistics process. Furthermore, they could help improve the overall flow and reduce unnecessary steps and consequently avoid any waste of time.

5.2.1 Staff Training

For efficiently running processes, well-trained staff is crucial. As the store manager said, all employees can accept returned garments and conduct the subsequent processes without the approval of managers. In their article, Rogers and Tibben-Lembke (1998) confirm that the gatekeeping stage - where products enter the reverse logistics - is the most important one regarding profitability. As the store manager of Pearl reported, the acceptance of unsuitable products is time consuming as they must be returned to their owner and cost money during the successive steps. In the startup phase, there were misunderstandings and therefore unsuitable products have been accepted. As the director and the store manager frequently mentioned that the second-hand products need to match the APLACE concept, it is important that all employees understand it. In the literature, trained staff is described as an important aspect for gatekeeping (Palm et al. 2014). Accordingly, it is suggested that APLACE invests in a proper staff training in regards to identifying suitable second-hand products and the efficient handling of all following steps. Srivastava (2013) and Alshamsi and Diabat (2015) highlight that in reverse logistics, companies face a high level of uncertainty and traditional forecasting techniques do not apply here. Therefore, it is important to train the staff to handle unpredictable scenarios. A manual for all stores can function as a tool for guidance. The director already pointed out that it is hard to know all existing brands, but there could be created an index with brands which are not accepted. Photos showing different types of styles which are accepted and styles which are not accepted can visualize the concept. Regarding the quality standard, photos can also be useful to show which conditions are acceptable or not.

5.2.2 Consigner Communication

This next point comes hand in hand with the gatekeeping stage. The importance of a good first selection was described prior. Tibben-Lembke and Rogers (2002) describe reverse logistics as a reactive phenomenon which is responding to consumer activities. Accordingly, it is not only important to prepare the staff but also potential consigners. When also educating the consigners about the APLACE and Pearl concept, it is easier for them to make a more suitable first selection for the return. Especially brands or styles Pearl does not wish to sell can be communicated to consigners. This would stabilize the uncertainties with which companies are confronted in reverse logistics (Alshamsi & Diabat 2015). Communication with the consigners beforehand can be a tool to make gatekeeping more efficient. Another tool is email communication before returning products. Consigners can be encouraged to contact APLACE in advance to list the brands and styles, or even send photos of the products they wish to return. This is not only convenient for APLACE but also for the consigners, as they do not need to carry unsuitable products to the collection point.

Regarding the quantities of returns, the APLACE director and store manager were both satisfied, however they estimate the volumes to even out. As Ekström et al. (2014) explain, the knowledge about recycling and reuse possibilities amongst potential consigners is crucial for a steady or increasing flow of supply. This is an important aspect which shall not be underestimated in regards to long term planning.
5.2.3 Digitalization of Processes

The communication between Pearl and its consigners for the second-hand products is running through the Smart Consignment software. The director pointed out that a modern solution for the communication is important to him as the competition has still not digitalized the communication. However, there are still some manual processes which could be replaced by digital processes. Currently, the consigner and product information are first noted down manually and the consigner receives a copy of these notes as a physical receipt. To save time and minimize errors, the data for each product and the consigner’s contact information can be inserted directly into the Smart Consignment software. To support this process, the stores could be equipped with an iPad only to serve the purpose of collecting the necessary data to accept returned products. This would be beneficial during busy times when the cash registers are occupied. Subsequently, the consigner could receive a digital receipt via email.

5.2.4 Transportation

As it is explained by Gupta and Ilgin (2013) and Tibben-Lembke and Rogers (2002) the biggest difference between forward to reverse logistics is the many-to-one transportation. At APLACE, there are currently three different collection points for second-hand garments. As the director and the store manager report, the biggest part of returns arrives fortunately directly at the second-hand store and additional transportation is not necessary. However, the few returns occurring at the two APLACE stores in Stockholm are then temporarily stored at the headquarters’ storage until they are picked up once a week. As it is suggested by Tibben-Lembke and Rogers (2002) the forward transportation can be used also for the reverse transportation to save costs. However, in the context of these little quantities, it might not apply. Storing the returns at the headquarters for maximum one week is a quite lengthy process. While Gupta and Ilgin (2013) argue that there is less pressure on speed in reverse logistics than in forward logistics, Srivastava (2013) emphasizes that efficient transportation have a positive impact on profitability. Returned products are all individual regarding quality and style, the time spend on each product for further processes is different (Gupta & Ilgin 2013). If the returns cannot be transported to the second-hand store more frequently, the subsequent processes such as registering in the system and attaching the price tag should be done during the storage phase. This would make better use of the time during storage. Accordingly, the security tags and steaming is due at Pearl before they are then ready for sale.

5.3 Proposed Performance Measurement Framework

As mentioned before, performance measurement is an essential tool for a company to monitor and improve its strategy and processes. Continuous improvement is crucial for its existence and growth. Since the second-hand concept of APLACE is quite new, the marketing director pointed out that they had not developed any additional performance measures apart from the existing retail indicators. In order to ensure the proposed adjustments in the reverse logistics, a framework has been worked out for APLACE (see table 1).

Since the balanced scorecard from Kaplan & Norton (1992) is the most commonly used method (Mohammed & Walid 2012), it was used as the base for the performance measurement framework. The four perspectives financial, internal processes, innovation and customer perspective were adapted and adjusted accordingly to fit the concept. In addition to this, the environmental and social perspectives were included as suggested by Piotrowicz (2011) and Mohammed and Walid (2012). The measures were selected from the concepts that were proposed by the aforementioned authors Piotrowicz (2011) and Mohammed and Walid (2012) as well as Aït-Kadi et al. (2013). They were adjusted according to the processes of
strategy of APLACE and reflect the most relevant indicators that are suitable for their concept.

<table>
<thead>
<tr>
<th>PERSPECTIVE</th>
<th>MEASURE</th>
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| **Financial**     | - Monetary investment in reverse logistics  
                      - Monthly sales of returned products  
                      - Revenue recovered  
                      - Costs of consignment share  
                      - Value of returned products |
| **Process:**      | - Number of returned products (per week)  
                      - Process time to check and accept the returned products (first selection)  
                      - Process time to register consigner and product information into the Smart Consignment software  
                      - Time of transportation of returned products from inventory to Pearl  
                      - Number of days of inventory  
                      - Process time to prepare returned garments for sale |
| **Internal & External** |                                                                                                                                 |
| **Stakeholder**   | - Customer satisfaction  
                      - Consigner satisfaction |
| **Innovation & Growth** | - Employee competencies  
                       - Information technology (Smart Consignment) competency |
| **Environmental** | - Number of outlet products sold  
                      - Percentage of packaging reusable/recyclable  
                      - Reduction of need for road transport  
                      - Energy utilization within facilities |
| **Social**        | - Corporate image  
                      - Relationships (to customers and consigners) |

Table 1: Proposal for performance measures for APLACE
6 Conclusion and Implications

To conclude the presented thesis a short overview of the answered research questions and a summary of the thesis is given. Furthermore, the contribution in terms of research and industry considerations is pointed out. Finally, the chapter concludes with a presentation of the limitations that affected the study are given as well as an insight into a possible research that could be conducted in the future.

6.1 Conclusion

In accordance with the presented purpose of the research, the study offers an answer to research question 1 – “How is the value stream of the reverse supply chain retailer with the purpose of reuse structured at a small-scale independent multi-brand fashion?” – by depicting a current-state value stream map (figure 5) of the second-hand concept of the Swedish retailer APLACE. The identified research gap is thus filled accordingly. Furthermore, these findings were analyzed and compared against the reviewed literature. The results of this analysis are presented in the form of a possible future-state value stream map for APLACE (figure 6) to answer the second research question – “How can the existing structure of the reverse logistics presented in the case study be optimized?”. Subsequently, further recommendations were formulated. Four main areas were identified which are crucial for efficient reverse value streams. The first stage of reverse logistics, known as gatekeeping, is determining its success. A primary good selection of suitable products contributes to the profitability. Secondly, it is important to acknowledge that the customer triggers these value streams and therefore customer communication is vital. Thirdly, for smoothly running processes a certain degree of digitalization is necessary. This ranges from consigner communication to stock-taking. Lastly, the transportation represents a major challenge as it is many-to-one unlike in forward value streams. Therefore, companies must rethink their strategy to cater to these new requirements. In addition to this, an overview of a possible performance measurement framework was suggested which can serve as the basis for future research.

6.2 Contribution

The thesis contributes an insight into how small-scale multi-brand fashion retailers can enter the second-hand market and therefore closes the previously presented research gap. The lack of such existing frameworks for multi-brand retailers and consequently an orientation of how to structure such a potential reverse supply chain can be a reason why not more of them start second-hand concepts. As mentioned before, customers sometimes do not return used garment solely due to lacking options (Hvass 2014). It is therefore even more important, that retailers start offering opportunities to do so.

In terms of contribution to the industry, the outcomes of this research offer an indication of how an established small scale multi-brand fashion retailer can open an additional second-hand concept. Due to the current relevance of this topic and the increasing interest in sustainable business models in fashion, concepts like these are crucial. Other companies with the same size can see these findings as an example of how they can enter the second-hand market. Furthermore, retailers in other markets or with a bigger size can also take an example of this study and adapt a similar business model.
6.3 Limitations and Further Research

The presented case study experienced a few limitations that were caused by a very tight time frame in which it was conducted. Due to the short time period that was available for the research the success of the second-hand concept of APLACE - economically as well as from a sustainability perspective - could not be observed. Especially, since the concept was quite new at the time of the study, the processes were not well established yet and consequently the impact could not be measured at that point. In order to determine the outcome of the concept, a longitudinal research design would have been useful or an additional examination at a later point. This applies in particular to the developed future-state value stream map and the recommended performance measurement framework. As Rother (2009) points out, continuous improvement of the value stream is essential, which includes creating a new future-state map once the suggested future-state map is implemented. A future research could be conducted based on the future-state value stream map and the performance measurement framework that have been worked out in this study. The processes could be monitored and the success evaluated with the help of the measures. Finally, a new future-state map could be developed based on these findings. This future case study which would use both qualitative and quantitative research methods at several time periods would lead to a better understanding (Woodside 2010).

Another limitation that occurred concerns the relatively small amount of empirical data. At the time of the research, the staff at the retailer which is also involved in some processes of the second-hand store, was not fully trained yet. This restricted the possible candidates for an interview. Since the store manager of the second-hand store and the marketing director of APLACE were the only ones that were in the full picture of the processes and ideas behind the project, they were the only suitable candidates to be interviewed or to talk to. Furthermore, the second-hand store has opened two weeks prior to the research and was still in an experimental phase. The collected data might be richer when investigating an established concept. Ideally, other employees as well as customers and consigners could have been interviewed in order to receive richer information and to identify even more areas of improvement for the future.
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Appendix I

Interview guide

1. General:
   - What was the intention to start the second-hand store?
   - What do you think are the main benefits for APLACE by having a second-hand store?
   - Which products do you accept? Do you only sell garments, or also accessories and shoes or further products?
   - Do you only sell second-hand products in the store (Pearl)?
   - Why did you choose to sell the garments on commission?

2. Collection and overall Process:
   - Who is responsible for the second-hand shop processes?
   - Can you explain the overall processes and steps?

   COLLECTION:
   - How many collection points do you have as of today?
   - Do you accept garments in the store in Malmö or only in the Stockholm stores?
   - How are the garments collected? One-on-one with the sales person?
   - How do you decide which products are accepted (quality/brand)?
   - How is the average quality of the returned garments?
   - How do you ensure to get the good quality garments back?
   - Is it important to you that the garments have been bought at Aplace?
   - How many garments do you receive per week on average and what quantities are you aiming for?
   - Now you are only focusing on consumers living in/close to Stockholm. Can you imagine a postal garment take-back could increase the garment returns?

   SORTING:
   - Are the collected garments sorted or is the sorting process done during/together with the collection?
   - Do you have standard criterias according to which you sort the garments?
   - Where is the storage / where do you do the processing of returned garments?
   - Why are the garments collected at Norrlandsgatan and not at Pearl?
   - How many garments do you collect before proceeding to the next step? Do you bundle the collected garments before you transport them to the second-hand store or is there a regular pick-up date/time?

   FURTHER PROCESS:
   - Do you take care of cleaning and repairing processes before you resell the garments in case you notice anything after the garment were accepted?
   - Who is responsible for the transportation? External company or own employee(s)?
   - How is the transportation done?
   - What are further steps after the garments are being brought to Pearl? (Steaming/Tags etc.)

   COMMUNICATION:
   - How do you inform consumers about the garment take-back and how do you motivate them to drop off their garments?
   - Do you inform people about the second-hand concept when they purchase in one of your Aplace stores?
   - How many people are returning their garments? What is their feedback so far?
   - Do you provide any kind of membership for Pearl (pe. newsletters, event invitations)?
Which social media channels do you work with and how in regards to Pearl? (informing the customer about the second-hand store and the concept)

PRICING:
- How/Based on what do you set the price for the second-hand garments? (brand, condition, quality?) Do you have some kind of specific guideline that you follow or is it decided individually from case to case?
- Who decides the price?

OTHER:
- What information do you collect from the customers when you accept their garments in order to contact them later?
- How and when do customers receive their money when an item is sold (where? cash/credit card/online payment?)? How do you inform them?
- What happens to unsold garments? (After which period of time do you take them out of the store?)
- What happens when the customer does not respond to emails that they should pick up their unsold garments?
- Would you like to keep all steps in-house or would you also consider outsourcing them, if so, why?
- Is it possible to only use one system for registering the used garments and selling the items?
- Would it be possible to share the consignment system with the consumers so that they could register themselves in advance?

3. Customer:
- How would you describe the customers in the second-hand store?
- Is it the same customer who is purchasing products at APLACE?
- Do you think you enlarge your customer group with the second-hand store?
- Have you noticed changes in the buying behavior in the "regular" stores since Pearl opened?

4. Concept:
- What do you think about the competition - Filippa K has its own return policy, do you think there is a problem that customers would bring their used Filippa K clothes back to their second-hand store rather than to you?
- How do you convince the customer to bring back the garments to you? Which are the incentives for customers to return garments?
- Do you connect the second-hand store to your other stores?
- Do you think special events to collect garments would increase the amount of garments brought back?
- Do you think about providing a second Pearl store or an online store for second-hand garments?

5. Success:
- Would you say the second-hand store is successful?
- How do you measure it (KPIs)? Do you have established success factors?
- Is there anything that might have potential to be improved in your eyes?
- How profitable is the second-hand concept from a business perspective compared to the “regular” APLACE stores?
### Appendix II

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>REPRESENTS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Consigner" /></td>
<td>Consigner</td>
<td>The consigner who brings his/her used items to be resold</td>
</tr>
<tr>
<td><img src="image" alt="Customer" /></td>
<td>Customer</td>
<td>The customer who buys the second-hand products</td>
</tr>
<tr>
<td><img src="image" alt="Movement of unfinished product" /></td>
<td>Movement of unfinished product</td>
<td>The products before they went through the last process</td>
</tr>
<tr>
<td><img src="image" alt="Movement of finished product" /></td>
<td>Movement of finished product</td>
<td>The products after they went through all the processes</td>
</tr>
<tr>
<td><img src="image" alt="Inventory" /></td>
<td>Inventory</td>
<td>Unfinished items that stored before the next process</td>
</tr>
<tr>
<td><img src="image" alt="Process" /></td>
<td>Process</td>
<td>Each box indicates one process; this can include several tasks that are done in one step without interruption</td>
</tr>
<tr>
<td><img src="image" alt="Transport" /></td>
<td>Transport</td>
<td>Indicates the transport of items from one location to another</td>
</tr>
<tr>
<td><img src="image" alt="Electronical information flow" /></td>
<td>Electronical information flow</td>
<td>E.g. email communication or electronic data interchange</td>
</tr>
<tr>
<td><img src="image" alt="Store" /></td>
<td>Store</td>
<td>Shops of the company</td>
</tr>
<tr>
<td><img src="image" alt="Information box" /></td>
<td>Information box</td>
<td>Additional information is noted here</td>
</tr>
<tr>
<td><img src="image" alt="Smart Consignment (consignment cloud)" /></td>
<td>Smart Consignment (consignment cloud)</td>
<td>Computer software in which information about consigners and their products is collected; sends out automatic notification email to consigners about sold items</td>
</tr>
</tbody>
</table>