Reverse supply chain performance in the online free return environment

L.V. Koers*, S1735535

University of Twente,
P.O. Box 217,
7500 AE Enschede,
The Netherlands
**corresponding author l.v.koers@student.utwente.nl*

ABSTRACT: Online retailers offer free shipping and/or returns to bind customers to them. When a customer decides to return a product, the reverse supply chain comes into play. The increasing stream of returns does not only influence companies internally, but also externally, namely the supply chain partners. Free return policies can help to maximize profitability, that is why those policies should not be abandoned, but optimized. The purpose of this research is to give an indication of the change in workload throughout the supply chain. Supply chain specialists of the biggest online retailers operating in the Netherlands were asked to assess the amount of returns that pass each of their reverse supply chain partners. Logically, the online retailer has the highest increase in workload, followed up by the transport services and drop-off points. Increasing streams of returned goods make it hard for online retailers to check everything in-house. An upcoming market therefore, is to become an outsourced (or sometimes, in-house) partner for checking and repairing returned goods.

Key words: Online retailer, free returns, returned products, reverse supply chain, supply chain partners

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Dr. M.L. Ehrenhard

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1 INTRODUCTION

For almost a decade now both product proliferation and customer demands have been increasing (Mendelson and Parlaktürk, 2008). More goods are offered via online platforms, and more people order online. Free delivery and returns are offered as a marketing tool for customer experience optimization (Brill, J. 2015). Lenient return policies can increase the amount of goods ordered by customers (Janakiraman, Syrdal and Freling, 2015) but inevitably increase the amount of goods that are sent back, which can be costly. Those returned goods go through a 'reverse supply chain'. They need to be announced by the customer (possibly brought to a pick-up point), picked up by a transportation service and checked by the online retailer before they can go back into stock, if they even make it this far into the process. Part of the returns can not get back into stock because of certain damage like stains, fabric damage or smell. Some products go even further back into the reverse supply chain, to suppliers or producers. Free return policies undoubtedly cause extra work for supply chain partners, but who are they, what exactly do they do and what percentage of returns pass each partner? Those are all subquestions to help us answer the research question:

What is the impact of free return policies offered by online retailers, operating in the Netherlands, on the workload of reverse supply chain partners?

It is important to know what the reverse supply chain of an online retailer looks like in order for them to prepare and enter into the right relationships with supply chain partners. Next to this, it is also important to look at the workload of each supply chain partner, caused by returns, to make sure enough effort is put in the relationships. Smooth functioning of the whole reverse supply chain helps to optimize the return process and service offered to the customer.

2 LITERATURE REVIEW

Returns always start at the customer. In this section we look for reasons why people return; and if returns cause extra work, why do online retailers not just eliminate them at all? Then we are going to take a look at the reasons why people return products and in the second part we discuss why online retailers would offer free returns and what theoretically speaking, are the advantages and disadvantages.

2.1 RETURN REASONS

In 2017 about 75% of the online customers claims to have returned products, an increase of 7% in comparison to 2016 (Ivory and Barker, 2017). This increase in returns has increased over the last few years, partially caused by an increase of free return policies offered.

The main reason for product return is because there is a lack of information, this is twofold according to Ram (2016). Intentional returns are made when the customer orders multiple comparable products with the intention to send back a part of the order. The other option is unintentional returns, which are caused by a difference between expectation and reality that can't be discovered by seeing the product online. The actual product differs from the website or catalog, for example size, color or touch don't meet up to expectations. This lack of information is the main reason that the percentage of online returns is higher than offline returns (Su, 2009). The highest percentages of returns are in the fashion sector, with an average of 25%, followed up by consumer electronics ranging from 11 to 20% (Ardeshirilajimi & Azadivar, 2015) and sports and health and beauty products on a shared third place, with an average of 15% each (Ram, 2016), making multi-category online retailers an interesting subject.

Secondly, products are being returned because at the time of arrival, the product is no longer wanted or needed. This is often the case for online retailers with longer lead-times, the customer has time to change his/her mind or buy a substitute product. When free shipping and return is offered, people tend to make impulse purchases, regretting it afterwards.

Thirdly, the fault can be at the retailer, when the wrong product or size is shipped. Especially in those cases, when the product is not returned because of personal taste, customers must be given the opportunity to return the product for free. In a research done by Hamilton (2015), it is stated that 54% of customers return products because they have received an incorrect item.

Fourthly, the product can be defective, meaning that it's broken or damaged and therefore the customer does not want to keep it. This is only the case in about 5% of returns (Kumar & Petersen 2010).

Lastly, a reason for return can be 'wardrobing', which is a form of return fraud. Wardrobing means buying a product to use it only once, or for a short period of time, to return it afterwards (Shang, Ghosh & Galbreth, 2017). In the last case, it is often difficult for the online retailer to handle the returned product. Malicious returns or fraud regarding returns is low in the Netherlands (Düren, 2014).

2.2 ADVANTAGES OF OFFERING FREE RETURNS

Offering free returns has some advantages and disadvantages, we will first discuss the biggest advantages.

Firstly, lenient return policies help online retailers to gain a competitive advantage. Competition between online retailers is increasing, mainly because of low entry barriers for the online retail industry i.e. relatively low set-up costs for websites and shopping applications. Next to this, search and switching costs for customers have decreased, meaning that online retailers now have to offer more (also in the long-tail and customized sections) to stand out from the rest and win the customer. A way to gain this competitive advantage is through using reverse logistics services as a strategic weapon (Chattarjee & Kumar, 2011). That is why some players offer free shipping and returns as an extra service. About 80% of online buyers deems free return policies a must, if they are not in place, they won't order (Ivory & Barker, 2017). When free return policies are correctly implemented and marketed, it can lead to higher profitability by increasing customer loyalty and differentiation from competition (Johansson, 2017).

Secondly, handling loose return policies can persuade customers into ordering more at once and more frequently, it removes the barrier to order (Freling, Janakiraman & Syrdal, 2015). Free returns have a big influence on customer loyalty, customers tend to come back to retailers that handle returns with less hassle. Some researches show that offering free returns has been too generous and failed to optimize supply chain performance (Su, 2009), which is true on the short-term, but in the current market, leniency of return policies can help maximize profitability on the long term (Minnema, 2017; Kumar & Petersen, 2009). "A moderate degree of product returns by a customer could not only lead to greater future purchases but also maximize profits" (Kumar & Petersen, 2010). The distribution centers and forward supply chain of the online retailer must be ready for an increase in goods sold and therefore an increase of stock. The spending after free returns was 158% to 457% higher than prereturn, whereas the spending after paid returns decreased by 75 to 100% (Bower & Maxham, 2012). Increased customer loyalty is a competitive advantage that leads to a stable online selling platform, increasing survival chances.

Thirdly, offering free returns signals confidence to the customers. "Return policies are a signal to the customer of convenience and an assurance of quality" (Bryant, Richey & Skinner 2008). You guarantee a good product and if the customer does not agree there is no problem with returning it. The perceived risk of the customer decreases and this helps to persuade the customer to order.

2.3 DISADVANTAGES OF OFFERING FREE RETURNS

Disadvantages to offering free returns are numerous and often costly, but do not necessarily have a bigger impact than the advantages, if handled well.

Firstly, because returns are free, returns increase, especially in the fashion sector. Normally, returns for high fashion apparel lie around 35% and return percentages are typically higher for Internet sales (Guide, Souza, Van Wassenhove & Blackburn, 2006; Bernon, Cullen & Gorst, 2015). The online retailer must make sure that it is prepared for an increase in returns and have proper policies in place on how to handle those returns. Returns are time consuming, passing a lot of steps on their way back: they have to be returned to the distribution center, checked and if necessary repacked and put back into the warehouse (Ram, 2016). Agreements with supply chain partners must be made, making the reverse flow of goods as smooth as possible.

Secondly, free returns cause a higher number of orders, meaning the online retailer has to keep a higher number of products in stock, often unaware of the number of returns. This increasing the risk that the online retailer bears and also increases the costs of warehousing.

Thirdly, the online retailer bears a risk of product value loss, especially for fashion products, that lose value faster than other products. Some products can still be returned after a long period, depending on the return policies, and sometimes this means that the product is out of fashion and the online retailer can't put it back in stock and has to bear the loss of value of the product as well. Consumer moral hazard (consumers abusing return policies), for example wardrobing, should also be taken into account when regarding product value loss (Che, 1996). Fourthly, research done by Brylla and Walsh (2016) shows that product returns negatively affect customer satisfaction and word-of-mouth advertising for the online retailers, but it is not clear if returns were free in this case. Offering free returns as a service (instead of paid returns) could increase customer satisfaction. Next to this, the research focuses on the short-term only, whereas other researchers, like Kumar & Petersen (2009 & 2010) have shown that long term effects of free return policies can maximize profitability.

Lastly, the online retailer also has to deal with an internal process for returns. Free returns complicate administration and stock keeping. Handling returned goods (unboxing, checking and repacking), can be time consuming and therefore costly.

3 THE (REVERSE) SUPPLY CHAIN

”A supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request” (Chopra and Meindl, 2009, p.13). In a forward supply chain, there are often six supply chain partners (See figure 1), starting with the producer, suppliers, the online retailer, transportation, pick-up points and the customer, but this can deviate from company to company.

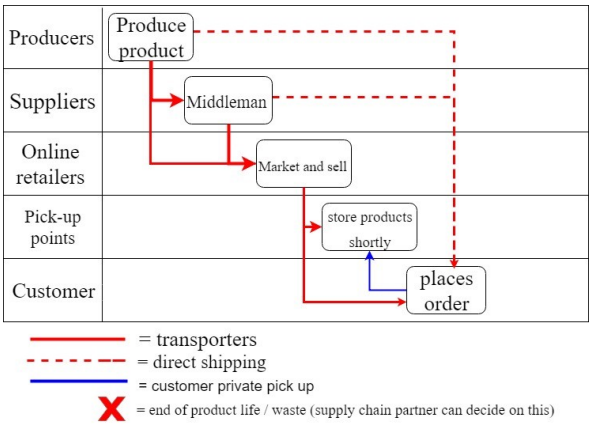

Fig. 1: The forward supply chain

Producers are in this case solely producing products and use the online retailer as a platform for sales, they do not sell to individuals. Suppliers also offer their products on the online retailers’ platform, but they differ from producers in two ways. First, suppliers can offer their products to individuals through their own online or offline platform, but don’t have such a big customer pool as the online retailers. Second, suppliers don’t make the product themselves, they often have the knowledge and ability to fix or assemble products themselves but do not manufacture them. The online retailer offers its platform to market goods, its distribution centers to store them and often have transportation services at hand for the most efficient shipping towards the customer. Producers and suppliers pay fees for storage and handling of the goods. Pick-up points (or in the reverse supply chain, drop-off points) are third parties like supermarkets, gas stations and other central points where products can be stalled, waiting to be picked up by the customer, or in case of the reverse supply chain, by transport service to go back to a distribution center.

Although reverse supply chain is a relatively new term, it has been around just as long as the original (forward) supply chain. When a customer decides to return products, that is where the reverse supply chain comes into play. Reverse supply chain starts when the resource goes at least one step back in the supply chain (Chattarjee & Kumar, 2011). It is important to know the path that returned products take on their way back, and the work that each supply chain partner performs, in order to optimize this backward loop or minimize the costs and time that come with the increasing number of returns. A well planned out supply chain of the online retailer, including clear contracts on return policies, can be beneficial to all partners. A reverse supply chain consists mainly of the same partners as the ’forward’ supply chain, but often adds an extra partner, the secondhand dealer (See figure 2).

The secondhand dealer buys the pile of returned goods that could not directly be returned into the stock of the online retailer. As you can see in figure 2, the X indicates the end of a product’s life, meaning that the product will be destroyed. The increasing amount of returns ask for a high-performance reverse supply chain and engaged supply chain partners, to make sure this stock does not pile up and becomes unusable. Since free returns are becoming the standard, there should be more attention given on the effect that this stream has throughout the supply chain. When there are more returns than a company can handle, or when it’s expensive to check returned goods, companies sometimes decide to have the product destroyed, rather than making sure it finds its way back to the forward supply chain.

The objective of a supply chain is to maximize overall value. In the forward supply chain this means cooperative coordination of partners which will lead to higher customer value of the good/service. The higher the integration, the easier it will be for the customer to receive and/or return a product. Integration of supply chain partners can also help in the reversed supply chain. ”Emphasis needs to be placed on relationship management in order to deal with the uncertainty, dynamic market structures and total information visibility that the environment brings” (Davis, Golicici, McCarthy & Mentzer, 2002). The better the integration of the partners (through increased communication and joint planning) the lower the loss of product value on the way back through the supply chain. In this paper, we focus on the effect of free return policies offered by the online retailer on the rest of the supply chain partners. The reverse supply chain has a bit more complex structure than the forward one, pushing online retailers into the role of conductor. Not only will they need to control the customer relationship, but also numerous supply chain interactions in a web of suppliers, partners and customers (Chaturvedi, Martich, Ruwadi & Ulker).

4 METHODOLOGY

In this research we are trying to answer the question:
”What is the impact of free return policies offered by online retailers, operating in the Netherlands, on the

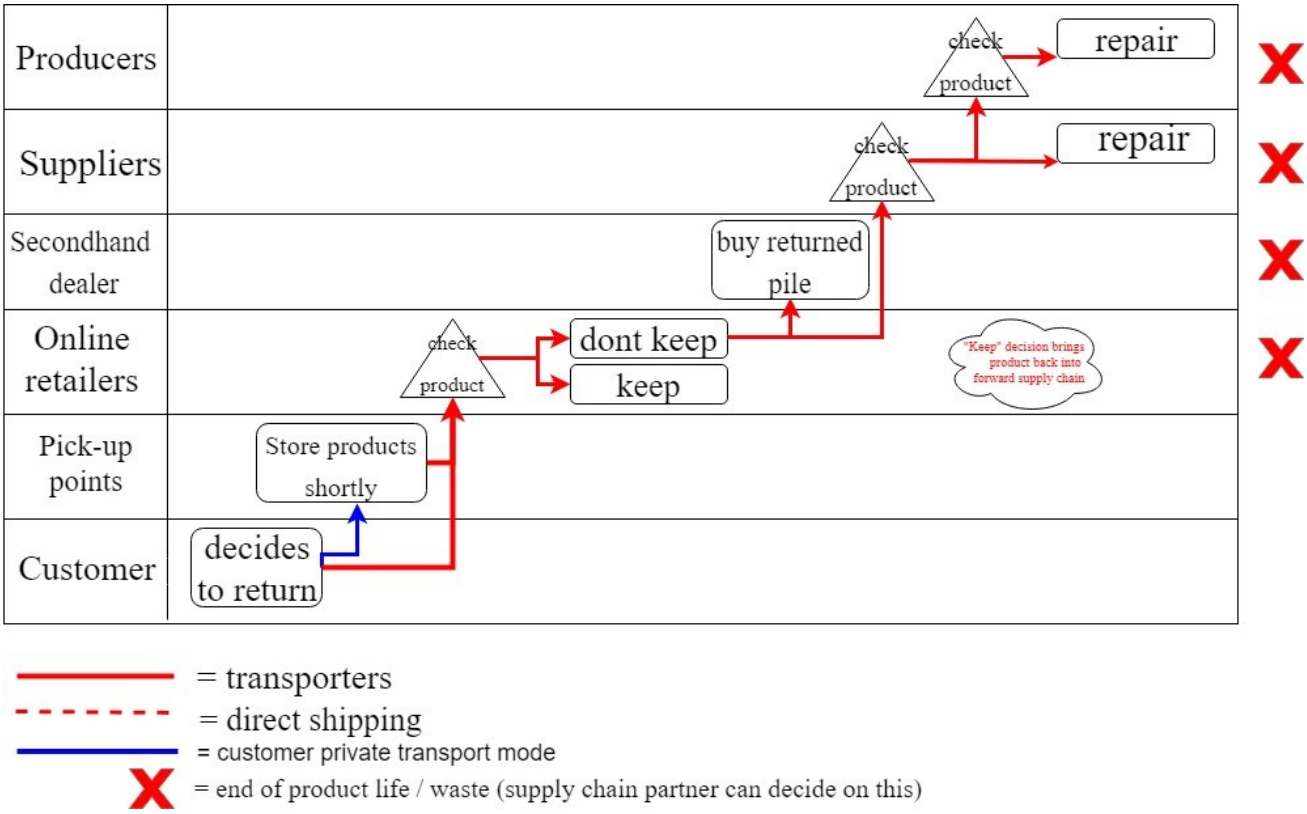

Fig. 2: The reverse supply chain

workload of reverse supply chain partners?"

We have already looked at two sub-questions, namely, the reasons why customers return and the reasons why online retailers offer free return policies (both advantages and disadvantages), using books, literature from the University of Twente online library, Scopus, Elsevier, websites from online retailers, daily paper and non-academic trade magazines and websites (like LogistiekProfs.nl). For the academic papers, keywords searched for are among others: reverse supply chain, reverse logistics, reverse loop, closed loop, free returns, supply chain partners or a mixture of those. Using this information, a forward supply chain and reverse supply chain model have been set up.

We assume that our model of supply chain partners is generalizable with the biggest online retailers, while keeping in mind that there might be individual differences per company, for instance additional partners or shorter lines to the customer through specific contracts. We also assume that offering free returns increased the amount of returns, and that the companies in question have found a way to sufficiently handle this stream of returns (i.e. set up of supply chain is stable and company is able to handle returns in a sufficient way).

Keep in mind that the reverse supply chain is a series of activities required to retrieve a used product from customers and either dispose of it or reuse it (Guide & Van Wassenhove, 2002). There is a difference between "end of life reverse supply chain" which is post-consumption, and the reverse supply chain for returns within 90 days, which is pre-consumption. In this research, we focus on the latter and most literature used is concerned with the pre-consumption reverse supply chain.

After the general models were made, we set up a questionnaire (See appendix 1). The questionnaire was used to check if the general models of the forward- and reverse supply chain were correct and to take a closer look at the function and change in workload of supply chain partners. Online retailers occur in a wide variety, since both fashion and electronics are in theory the products with highest percentage of returns, together with multi category retailers, they were chosen as the units of analysis. The decision to only approach online retailers with free return policies was made because they have the highest percentage of returns and therefore effects are easier to measure. Using LinkedIn and contact pages on websites of online retailers, we contacted supply chain managers/analysts/specialists (further mentioned as supply chain specialists) of seventeen big online retail companies that offer free returns. For every company, we tried to contact at least two supply chain specialists to increase reliability of the outcomes. With this questionnaire we gathered qualitative data using cross sectional research designs.

Questionnaires were needed because this information can't be found online. They were sent by mail or via LinkedIn. Personal meetings were not considered mainly to prevent rejection of managers regarding a time constraint. The main goal of the research was to get a deeper understanding of the companies reverse supply chain and the relationship between supply chain partners and the online retailers.

The questionnaire consisted out of three distinctive parts. Which we will shortly discuss.

First, those surveyed were asked to describe the forward and reverse supply chain of their company, in comparison with general models for both (See figure 1 and 2). This question is necessary to make sure all supply chain partners were mentioned in the general model and to reassure the person surveyed knows what is meant with the reverse supply chain concept.

The second part of the questionnaire is about the different supply chain partners, divided over seven sub-questions in which we made sure to get a deeper understanding of the function of each partner.

Lastly, we asked the supply chain specialists to indicate what percentage of returns pass each supply chain partner. This last question is an important signal for the amount of work that each partner has, caused by free returns of the online retailer. With the results of this question we plan to make boxplots to display the median of percentages for each supply chain partner. Using boxplots, it will be easy to see the spread of workload per supply chain partner and possible outliers. When it is clear what percentage of work goes to which partner, the online retailer can focus on which relationships are more important to improve.

It is important for online retailers to know the work free returns impose on themselves and supply chain partners in order to decide how much effort to put into each relationship. Only when the reverse supply chain functions smoothly, the return process and service offered to the customer can be optimized. An optimized return process can increase customer loyalty and therefore profitability.

Potential limitations to the research could be low response rate or incomplete questionnaires, another possibility is that the supply chain specialist is part of a team and does not have complete answers to the questions asked or is not allowed to share all information asked for. Therefore, the opportunity to hand in the questionnaire anonymously was given.

5 THE MODEL

To answer the research question, the following framework was set up. It shows the relationships between the online retailers and its supply chain partners as X-1,2,3,4,5 and 6 (see figure 3).

The model also shows the relationship between some other supply chain partners that might be influenced by the increased returns caused by free return policies, like supplier and producers or closer links between customer and transport services.

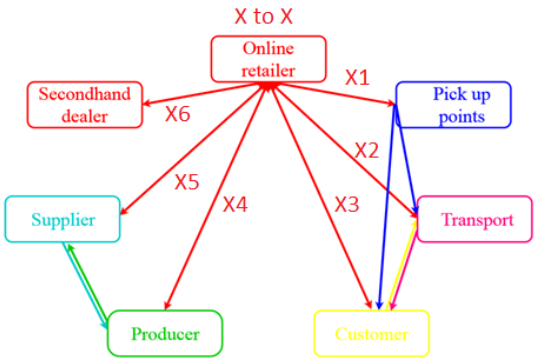

Fig. 3: Relationship model reverse supply chain partners

The model breaks down the general reverse supply chain into a heptagon with seven different partners. Every line represents a certain relationship; red lines are relationships between online retailer and partners involved in their supply chain. The other lines are relationships that can also occur in the reverse supply chain and are possibly affected by free return policies. What we want to achieve using this model is to establish the percentage of returned goods that flow from the customer to all the supply chain partners.

6 RESULTS

In this section we will look at the impact on supply chain partners of the biggest online retailers operating in the Netherlands, in terms of extra work created by offering free returns. The results are based on literature, information found on the websites of online retailers and, using a questionnaire, we asked supply chain specialists of the biggest online retail companies operating in the Netherlands (both fashion and electronics) about their supply chain and relationships with supply chain partners. Because the response rate for the questionnaires is low (only 16%), results are not generalizable among online retailers with free returns and making boxplots to graphically display the dispersion of workload among supply chain partners would give a skewed view of the reality. Therefore averages and outliers (if present) are described in text. The models for both the forward and reverse supply chain are feasible for most online retailers. Some, but not all, added an extra partner, which will be discussed after the other six supply chain partners. Some online retailers have indicated that, through contracts, some partners have

integrated deeper into their system.

The first striking result is that the estimation of returns in theory is different than in practice. In theory, fashion retailers get 25% of their products back, and electronic retailers somewhere between 11 and 20% (Ardeshirilajimi & Azadivar, 2015). The indication of returns given by supply chain specialists of fashion and multi category online retailers were on average around 6%, with outliers around 60%. For electronics this estimation was around 6%. Reasons for the difference in percentages from theory and practice could be that in the past three years, theory should have been revised because of an increased focus on reverse supply chain management that drastically reduced this number. Another, more feasible reason could be that supply chain specialists are not completely aware of the number of returns. There is certainly room for improvement here. Not being aware of the stream of returns is a potential danger and should therefore be closely monitored. Not handling returns well, through either a stagnating supply chain or internal problems with returns can directly influence the customers return experience and his/her loyalty.

Now, we will discuss the impact on the supply chain partners, beginning at the customer, where the reverse supply chain starts, all the way through the drop-off points, transport services and secondhand dealer to the suppliers and producers.

Firstly, the relationship between the online retailer and the customer (X1). The reverse supply chain starts when the customer decides to return the product. Returns are the highest in online fashion (especially for women) and electronics. When free returns are offered, customers tend to order more and more often. Through free return policies, service is increased, taking a certain workload of off customers. On the other hand, customers are often asked to integrate deeper into the supply chain, for example by giving reasons for returns or some other type of feedback. The most popular way of returns is through use of a drop-off point, in which customers takeover part of the role of transporter by bringing back the product to a drop-off point (or brick-and-mortar store from retailer). The deeper the integration of the customer, the higher his/her workload for the online retailer, but the higher the personalized service.

Secondly, the pick-up points, or in the reverse supply chain rather drop-off points; which are oftentimes PostNL, DHL, DPD or UPS service points, are important (X2). For the former, because of the increased number of returns (increased workload, but not very labor intensive), those points will have a higher number of visitors picking up packages. Monetary rewards for drop-off points can be direct, getting a fee per package handled, or indirect, the monetary rewards of the increased clientle. On average, more than 50% of returned products are sent back via those points or other drop-off points that can be used for free. Some online retailers have brick-and-mortar stores, giving the customer the option to return (and if needed) change the product. Thirdly, transport services, to get returned goods back from customer to the online retailer or even further back into the reverse supply chain, are often outsourced (X3). When heavy products are returned, online retailers often decide to do their own transport service. Since a high percentage of goods is returned, transport services get more work to do. The number of packages carried, and therefore the workload, increased by 25% in the last year only (PostNL boekt minder winst. 2018). Since transport services need to drive back and forth to distribution centers, they can work more efficient when they do the forward as well as the reverse stream of goods. Companies that offer home-pick up ask more from the transporter than companies that work with drop-off points, and home pick-up is therefore more expensive. Payment for transport services is often cascading, the more packages, the lower the price per piece. Advanced transporters like PostNL attract bigger online companies because of their advanced system of planning and network of carriers in combination with drop-off points in service. Fourthly, the online retailer itself (X to X). Although free return policies clearly increase the workload of online retailers, it also helps gain a competitive advantage. Online retailers must make sure they have a correct system in place to deal with this stream of free returns. Even if this means that a big part of the returns is sold to a secondhand dealer. One supply chain specialist mentioned that ”the whole action of sending products back and checking them is really expensive”. Therefore, it should be considered what offering free returns means internally to the online retailer. For instance, think about personnel to handle the products directly (checking, repacking etc.), the finance and increased difficulties for the administration department to deal with the redeposition to the customers and stock keeping, handling the exact amount of incoming and outgoing goods. Most online retailers claim to handle their returns well, but still a huge part of returns don't make it back into the forward supply chain, meaning they are sold to a third party or destroyed somewhere in the reverse supply chain (Amazon destroys massive quantities. 2018). We asked companies what their reason is for offering free returns. Most of the time this is out of service consideration and competitive advantage, whereas some online retailers think it is their legal obligation, which is not the case. When a customer has paid for delivery of the package and decides to return the complete order, the retailer is obligated to repay the delivery cost. The online retailer is not obligated to pay for the return costs, therefore the customer is ought to pay return costs himself. Out of service considerations, retailers often offer to pay for return costs but are in no way

obliged to do so (Grandiek, Laak, Stouwe, Wokke 2018). Online retailers must also consider the impact free return policies have throughout the supply chain, and how it will change their relationships with supply chain partners. Free returns mean increased communication and deeper integration with supply chain partners. Before offering free return policies, the online retailer must be sure that partners are aware. Fifthly, the secondhand dealers, whose workload is determined by the stream of rejected goods (X6). Some online retailers put products aside when checking or repairing takes too much time, and occasionally, the dealer comes to pick up all those products for a reduced price, even if the products only need small adjustments to be as good as new. On average, 12% of returns is sold to secondhand dealers, with outliers up to 60%. The reason this number is so divergent is because of the different companies' intentions. Some companies put aside all returns that can't go back into stock directly and sell it to secondhand dealers simply because it is not profitable to put in much effort. Other online retailers offer returned products on their platform, describing in detail why it has been returned and giving an appropriate discount. Next to this, some companies mention that they work with a third party for checking and repairing returned products, which is a growing business with the amount of returned goods. We will discuss this type of business in the last section 'other supply chain partners'. Sixthly, the combination of suppliers and producers (X4 and X5), because they both have the purpose of selling their goods and increasing their span to reach customers via the online retailers' platform. Again, the number of products sent back to either supplier or producer is very divergent, from very low averages (0 to 5%) up to 55% in outliers, depending on the contract made and value of the product. Producers that sell via online retailers must handle returns or perform reparations when the online retailer is not capable of doing so, especially in electronics this is often the case (Groothuis & Welsem, 2012). Sometimes, it is cheaper to send a new product instead of shipping it back to producer/supplier, repair it (if possible) and return it to the online customer. In this business to business relationship it is difficult to forecast exact demand. Lower sales than projected cause a return to supplier/producer (buyback clauses). Although buy-back clauses help align the interests of both parties (production and forecast of goods sold is equal) (Su, 2009), it shifts the risk to suppliers or producers, which can harm the relationship. Higher sales than projected lead to a loss in profitability for both supplier/producer and online retailer. Next to this, the relationship might be harmed because the online retailer deals with a loss in goodwill. The better suppliers and producers are integrated, the smoother the supply chain will function. This integration can be measured through information exchange, trust, joint partnership management, partnership specific assets and partner asymmetry (Sodhi & Son, 2009). Also, they can easily get feedback on their products using the online retailers' platform, making it easier to improve their goods and/or services. Lastly, some online retailers have extended their reverse supply chain with specific partners. For electronics, it is common to work with third parties that manage all returns and repairs, think about data wiping specialists or specific repair services. Fashion or multi-category online retailers often deal with third parties to handle all returns for them. Also, when companies decide that it is not profitable to check or repair certain products, another partner comes into play. Products are than either sold to a secondhand dealer or picked up by another party to be destroyed. As mentioned by one supply chain specialist "Sometimes the cost of sending goods back outweigh the value of the product, so we destroy the goods and get compensated by the supplier/producer". Although this sounds cruel, and like a major way of money loss, it is often the case. This "supply chain scandal" as Frontal21 (Amazon destroys massive quantities. 2018) calls it, is actively debated in Germany. Amazon was found to be one of the biggest destroyers in the country, even getting paid by other retailers to destroy goods. In conclusion, the online retailer has the highest increase of workload but has the opportunity to outsource the extra work that comes with returns relatively easy. The top three of most impacted supply chain partners (excluding the online retailer itself) is as follows. First, the workload of the transport services is the highest. In more than 50% of the cases they carry returned goods back to the distribution center of online retailers. In second place, the drop-off points. They dedicate an extra service of taking in and storing packages, also in more than 50% of the cases. The reason why this partner is in second place, with the same percentage of increase in workload, is because their job is less time consuming. In third place, the secondhand dealer, which job is dedicated to returned goods that don't go back into the online retailers forward supply chain. This percentage is not as high as for the other two partners, around 20% on average.

7 DISCUSSION

7.1 Optimal Number of Returns

Free returns undoubtedly increase the number of goods sent back. Although it seems to cause an increase in workload of almost every supply chain partner, it should not be the companies' goal to eliminate all returns. According to Kumar & Petersen (2010) "A satisfactory product-return experience can lead to increases in customers' future purchases and re-

ferrals and in the profit they yield for the company." Returns can be brought to the most optimal number. For online retailers to decrease their current amount of returns, it is important to give customers a clearer, realistic view of their products, in order to avoid disappointments. In fashion, this would mean accurate pictures and size guides. In electronics, this means correct description of function, size and features. Research by Janakiraman et al. (2016) shows that longer time to return decreases the amount of returns, because people get attached to the product. Albrecht, Hofacker, Kunz and Walsh (2016) have found that the reputation of online retailers is a powerful tool to reduce product return rates. Benlian, Hinz and Zhou (2017) found that "a well-considered package design, including colorful packaging and extra gifts, significantly lowers consumers' intentions to return". These are a few possibilities for companies to lower the amount of returns. Some online retailers dedicate an internal department to check, repair and/or repack returned goods, where others make the decision to outsource, because it is too time consuming and therefore not profitable. The percentage of goods sent to 'other supply chain partners' that can help to restore a part of the value lost in the return process is low, but can become increasingly popular over the following years. This handling of returned goods is a growing market. Companies in this market try to increase the residual value of the goods up to 75% of the new value. This is profitable because some online retailers sell returns to secondhand dealers for prices as low as 15% of the new value (Ouwerkerk, 2018). It is important to make the process of checking returns more efficient, for example by automating the checking of returns (Retourplaza lanceert SaaS, 2018). Some online retailers have picked up the idea of selling secondhand or rather second chance products on their platform for a reduced price, often found in a subsection, clearly describing the state of the product. Altogether, it is important for online retailers to have a close look at their own reverse supply chain and the amount of returns. As mentioned before, there are multiple tactics to reduce returns, mainly giving the customer a most realistic view of the product online. From practice it seems like most supply chain specialists of online retailers know their reverse supply chain, but are not specifically focused on the number and the amount of returns. When free returns are offered, it is important to make sure that the return value of products is as high as possible. Supply chain partners are a means of safeguarding this value. One trend that is seen in the online retail section with free returns is the need to bring back returned products into the forward supply chain. Specialist third parties help the online retailer to repair and value the product, to sell them on a 'second-hand' section on the online retailers' platform later on.

7.2 Further research

There is little research done about the supply chain of online retailers in the free return environment. Given the models for the forward and reverse supply chain, further research can focus on a more qualitative approach or case study on how to optimize this reverse supply chain or what other parties could be involved in the whole process to optimize the value of returned goods. In the model (fig. 3) other relationships that could be influenced by free return policies were also depicted (for instance the relationship between customer and transport service). We did not research relationships other than between the online retailer and its partners, but this could be done in further research. Quantitative research has to be done to make findings generalizable among online retailers. Next to this, it is important to keep an eye on the upcoming market of 'value-saving' intermediaries. Those companies can help to bring down the number of goods that are destroyed. Other variables that are influenced by free return policies can also be an interesting topic. Variables that are influenced, next to the workload of supply chain partners, could be the integration of those partners in the system of the online retailer. Giving them more responsibility can make the process more efficient and responsive to change. Another variable to focus on could be the footprint of the online retailer, which is partially influenced by its supply chain partners. Returned products often decrease in value, but this value can be increased by different supply chain partners. Especially third parties specialized in increasing the value of returned products can prevent products from being destroyed and help online retailers decrease their environmental footprint. Lastly, it would be interesting to take a look at the financial implications per supply chain partner. Who pays for the free returns and who makes the most money off the process.

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A QUESTIONNAIRE

This is a survey set up by Lisanne Koers, a student at the University of Twente. The goal of the research is to successfully finish the bachelor thesis answering the main question: *"What is the impact of free return policies on (reverse) supply chain performance of Dutch online retailers"*. Reminder: Keep in mind that answering questions below is not compulsory. If you do not feel comfortable answering a certain question, please only state the reason why.

Name:_____

Job position: _____

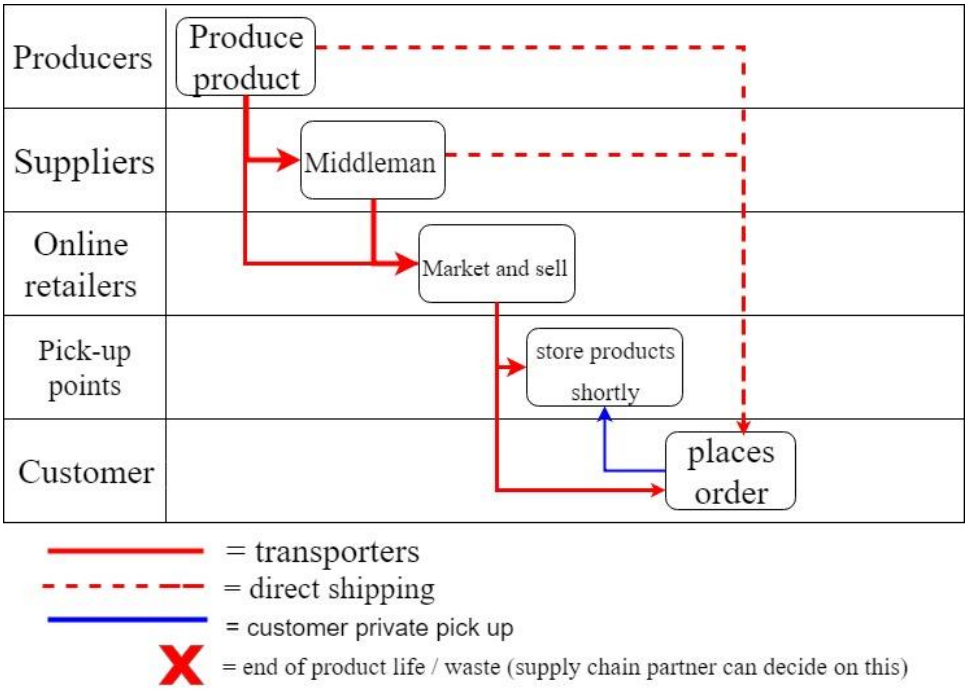
Years of experience in this position: _____

This survey consists of three parts: the (reverse) supply chain figures, a questionnaire about supply chain partners and a proportional indication of influence on supply chain partners.

Part 1:

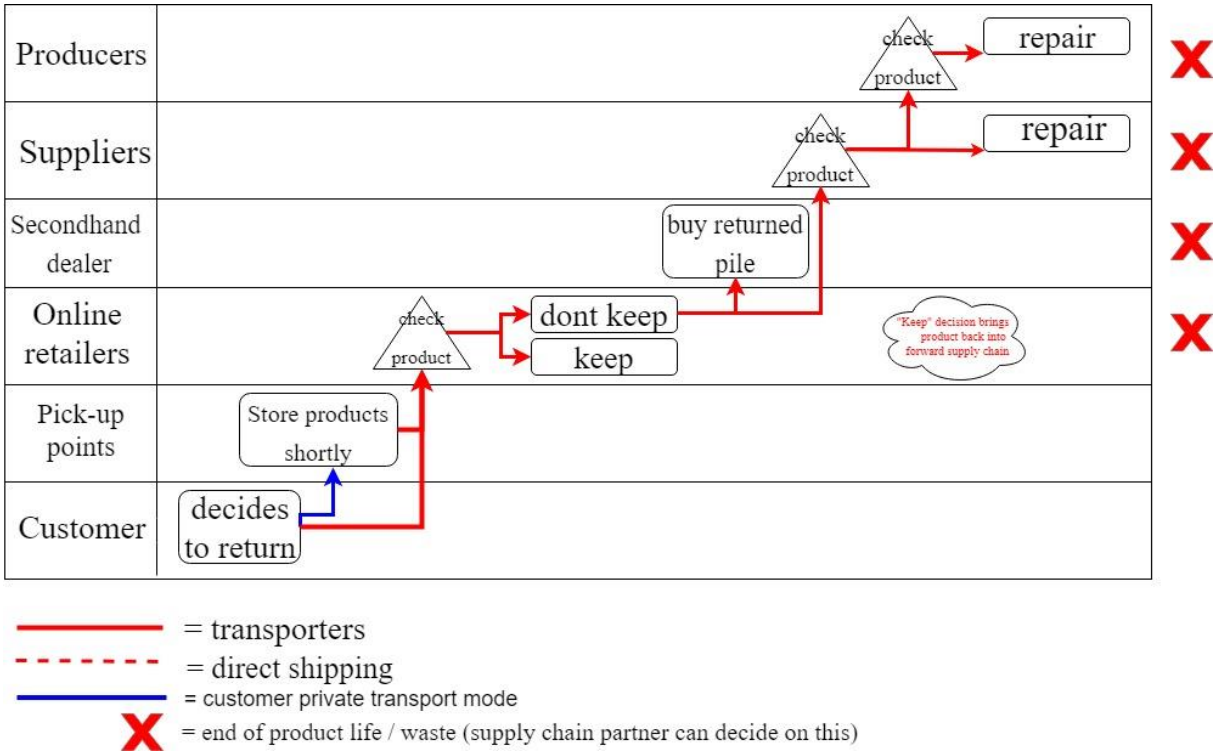
Figure 1 and 2 display the forward supply chain and the reverse supply chain respectively. Note that this is a general model. Please state whether this is a feasible model regarding the supply chain of your company. Elaborate on differences using the remark section below (i.e. outsourcing of certain steps for product acquiring/returns).

Figure 1. The forward supply chain



Remarks:

Figure 2. The reverse supply chain



Remarks:

Part 2

The following questions are categorized per supply chain partner. If you added supply chain partners in the figures above, please add information about the partner(s) in category seven. If the question considers a partner that is not in your supply chain, please state why the question is left unanswered. Keep in mind answers should be focused on the reverse supply chain, used to bring the product back from customer to retailer (Figure 2 – Reverse supply chain > for returns).

1. Customer

a. How many (and which) different return possibilities are offered to the customer and how often is each option used (%)? (for example: home pickup 30%, drop-off points 60%, store drop-off 10%)
b. Are there any demographics on returns available? (for example: what type of customer returns the most)

2. Pick up / drop-off points

a. In terms of pick-up or drop-off points, who are your partners? (supermarket, post office, gas station)
b. What are the requirements for pick-up or drop-off points? (central, opening hours, popularity)
c. What would be a reason for companies to in-house your pick-up points? (for example: increased number of customers, monetary reward)

3. Transport services

a. Is the transport service outsourced to a third party?
b. Do you work together with one or multiple transport service(s)?
c. Do you offer equal payment to the transporter for shipping from as well as towards the company?

4. Online retailer

a. What is/are the reason(s) for your company to offer free returns?
b. What percentage of goods is returned?
c. Did the amount of returns increase when you changed from paid to free returns? If yes, are there exact number/percentages available?
d. What percentage of returns is put back into stock after a check?
e. What are the main reasons products can't go back into stock? (worn, dirty, broken)
f. What happens with the other percentage that can't go back into stock directly? (sale, repair, outlet, thrift shop, send back to supplier or manufacturer, sell to secondhand dealer, charity, throw away)
g. Is there anything done to minimize returns or the costs that come with it?
h. Did you integrate supply chain partners further when deciding to offer free returns? If yes: how? (higher levels of communication, interactive control of stock)
i. Can you point out major changes caused by offering free returns (intern as well as external, between partners)

5. Secondhand dealer

a. Which type of products go to a (bulk) secondhand dealer?
b. What do you offer to the secondhand dealer? (for example: reduced prices)

6. Suppliers and producers

a. Do returns go back to suppliers or producers? And if so, in what cases?
b. To what extent are suppliers and producers integrated into stock-keeping of your company? (for example: not integrated, we share information about product improvements, they keep their own products up to a certain stock level)

7. Other supply chain partners

a. What is the task of this partner(s)
b. Other relevant information:

Part 3

For the last question please indicate (at X=) what percentage of returns pass each supply chain partner. For this question we leave out the customer, since this is the start of returns and therefore 100% of returns pass the customer.

- Pick up / drop-off points

100% = all returns pass a drop-off point
0% = no returns pass a drop-off point > direct return to company
X=

- Transport services

100% = all returns come back via transport services
0% = all returns are dropped off at our store
X=

- Online retailer

100% = all returns come back to the online retailer (or distribution center)
0% = no returns come back to the online retailer (directly shipped to other supply chain partner)
X=

- Secondhand dealer

100% = all returns are sold to a secondhand dealer
0% = we do not work with secondhand dealers
X=

- Suppliers and producers

100% = all returns go back to either a supplier or producer
0% = none of the returns go back to a supplier or producer
X=

- Other supply chain partners

100% = all returns pass this partner
0% = none of the returns pass this partner
X=

Thank you for filling out this questionnaire. If you would like to change or add anything from the answers afterwards feel free to contact me.

I would like to receive the final thesis: *yes / no*
Can I use your name (or company name) as a *reference* in my thesis or would you like to submit this questionnaire *anonymously*?

Lisanne Koers
University of Twente
l.v.koers@student.utwente.nl
06-12499285