

Product Return Process

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**- Developing a Web-Based Return Form to Improve the
Information Flow between an Apparel Company and Its Retailers**



**THE SWEDISH SCHOOL
OF TEXTILES**
UNIVERSITY OF BORÅS

Foreword

Product Return Process – Developing a Web-Based Return Form to Improve the Information Flow between an Apparel Company and Its Retailers is a master thesis within the Applied Textile Management program at the Swedish School of Textiles in Borås. We wish to thank our supervisor for giving guidance and valuable meetings throughout the study.

We also want to thank all the retailers for participating in the experiment and for their interest. Thanks to the apparel company for being collaborative and for giving us an insight into their return process at a detailed level. Special thanks to the Logistics Manager and the Return Department for all their time.

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Title

Product Return Process

- Developing a Web-Based Return Form to Improve the Information Flow
between an Apparel Company and Its Retailers

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Abstract

Handling product returns has become a critical activity for organizations as the volume of goods flowing back through the supply chain rapidly increases. Few research studies have published specific empirical data concerning the reverse logistics practices of companies. Information technology and information support has long been recognized as a competitive weapon – capable of enhancing company performance and achieving efficient reverse logistics. Reverse logistics is very unlike the forward, as it is more reactive and also has less visibility. Unlike forward logistics, incoming products from reverse logistics are not tracked broadly because of the lack of information systems resources necessary.

The investigated apparel company in this study is operating on the global market and expands their sales twenty per cent each year, resulting in increased pressure in the return flow. To meet this future demands, the return process has to be more efficient and not so time consuming. This study emerged from a case study made at the return department of this apparel company based on a research question. An improvement area was discovered through interviews, internal documents and observations. This area was investigated in existing theories through books and scientific research papers. From the theories and the case study, a hypothesis was created in order to be tested. To strengthen the hypothesis, an experiment was developed and performed at selected retailers and at the apparel company.

Research Question

Where in the product return process can improvements be made in order to make the information flow more efficient between retailers and an apparel company?

Hypothesis

By creating a web-based return form, the information flow between retailers and an apparel company will be more efficient, resulting in a more effective and structured product return process.

Through the experiment, various factors that strengthen the hypothesis were discovered. For instance, the information flow becomes more effective when retailers have clear guidelines how to send back products and when inserting the information into the computer system before returning. As the apparel company knows what is coming back, the disposition of returned products can be predetermined which will speed up the return process. Shared and available information across various parties facilitate the daily work with better communication. Furthermore, activities that are existing today within the return process can be eliminated which result in more effective product return process. Refund for retailers can be made quicker which result in more satisfied retailers and creates stronger relationships.

Key Words: Product Return Process – Information Flow – Return Form – Apparel Industry – Reverse Logistics

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1. Introduction

Today, apparel companies are facing different challenges and have to adapt their business to a rapidly changing world. It has been shown that in spite of the increasing importance of product returns processing and reverse logistics in corporate and academic literature, these actions have still not assumed a widespread high level of significance within organizations. Often the senior executives are given the responsibility of supervising the process but it is not their main role. It appears these executives mainly manage this function along with other obligations, which means that the product returns processing is still a “part-time” action in most firms (Stock & Mulki, 2009).

Few research studies have published specific empirical data concerning the reverse logistics practices of companies. According to Stock (2009) the product returns process, which has been modeled and described before, could be more accurately tested, with the existence of detailed flow charts of each step of the process being developed. Furthermore, Stock claims that there is a need for generic process maps and flow charts to be developed within the product returns process. (Stock & Mulki, 2009)

This study is based on a case study that has been made in cooperation with an apparel company. Detailed flow charts and process maps within the reverse logistics between retailers and the apparel company were developed, in order to find improvement areas where efficiency could be enhanced. As mentioned before by Stock, this is a field with lack of attention within both the business and academic literature. Through this study, it was found that the information flow and the electronic data interchange systems between the company and their retailers were inefficient and not modified.

1.1 Background

Handling product returns has become a critical activity for organizations as the volume of goods flowing back through the supply chain rapidly increases (Stock & Mulki, 2009). Managers more and more face the necessity of dealing with products that have been returned, recalled or need to be repaired (Minahan, 1998).

The curiosity in reverse logistics, developed during the 1990's, is related to that which happened in the inbound logistics area. For many years, companies were not as concerned with the inbound side of the logistics, focused primarily on the outbound side due to the larger amounts of resources associated with finished goods inventories. Logisticians recognized that raw materials, components, parts, and suppliers were important financial investments that had to be managed. Therefore, inbound logistics became a familiar and significant component of the total logistics management process. (Stock, 1998)

In a similar way, firms are recognizing that reverse logistics is a part of the total logistics management process that is growing in importance. As was the case in the development of inbound logistics, innovator companies that develop an expertise in reverse logistics activities can potentially gain competitive advantage in their various markets. (Stock, 1998)

Product returns are part of reverse logistics which includes a combination of other activities such as recycling, refurbishing, and repair as well as waste disposal. While some returned products can be repackaged and sold as new, due to legal or other restrictions, some products cannot be resold as new once the product has been returned by customers. (Stock & Mulki, 2009)

Organizations have also realized that a better understanding of products returns and efficient management of reverse logistics can provide them with a competitive advantage. Practices in product returns and reverse logistics can be a win-win situation benefitting both customers and the company. When effectively handled, product return processes can help companies recover value. Furthermore, they can aid in the development of consumer return policies that can increase customer loyalty and improve product sales. Better understanding of issues related to product return can also help identify areas in manufacturing or marketing where corrective actions might be necessary. In addition, with growing environmental concerns and legal regulation associated with green marketing and sustainability, activities related to product disposal in reverse logistics can provide insights into strategies for sustainable development. (Stock & Mulki, 2009)

Information technology/information support has long been recognized as a competitive weapon – capable of enhancing company performance. Information support is particularly critical to achieving efficient reverse logistics operations. Reverse logistics is frequently characterized by a need for rapid timing and processing. However, traditional information systems are designed around forward logistics. For optimal reverse logistics efficiency and effectiveness, information systems and data management must be redesigned or expanded to accommodate returns. (Trebilcock, 2001)

The electronic data interchange systems (EDI) are tools that allow automated information exchange between different tiers in the supply chain. The use of EDI has proven its effectiveness in several European industries, especially in the food, automotive and the chemical sectors. The benefits to be gained from EDI implementation in the apparel sector are many. Electronic integration in such a company can lead to benefits that go beyond a mere reduction of administrative costs to include reduction of co-ordination costs due to increased planning and exception management capabilities. (Mossinkoff & Stockert, 2008)

2. Theoretical Frame of Reference

Theory about return management, reverse logistic and information flow are presented in this chapter to give an insight what the literature highlights today.

2.1 Returns Management

“Returns management is that part of supply chain management that includes returns, reverse logistics, gatekeeping and avoidance.” (Rogers, et al., 2002, p. 5). According to Rogers (2002), Returns Management is an important supply chain management process that involves planning and effective implementation through the supply chain. Furthermore, Rogers claims that the effective execution of returns management allows executives to discover improvements opportunities, but requires supply chain alignment and the inclusion of the activities avoidance and gatekeeping, pivotal concepts in return management (Rogers, et al., 2002).

Gatekeeping involves making conclusions to limit the number of items that are acceptable into the reverse flow. Successful gatekeeping enables management to organize and reduce returns without harming customer service. Gatekeeping removes the costs connected with returning items that should not be returned or the cost of items returned to the unsuitable destination. Avoidance means finding appropriate ways to reduce the number of return requests. It can consist of ensuring that the quality of items and user friendliness for the customer is at the highest level possible before the item is sold and shipped. Returns management as a supply chain management process includes several features that can make an individual company more effective and efficient. (Rogers, et al., 2002)

2.1.1 Returns Management Process

Figure 1 illustrates the progression of sub-processes that include strategic and operational returns management. The lines linking the sub-processes to the other seven supply chain management processes in the center of the table describe the interfaces between each sub-process and these processes. (Rogers, et al., 2002)

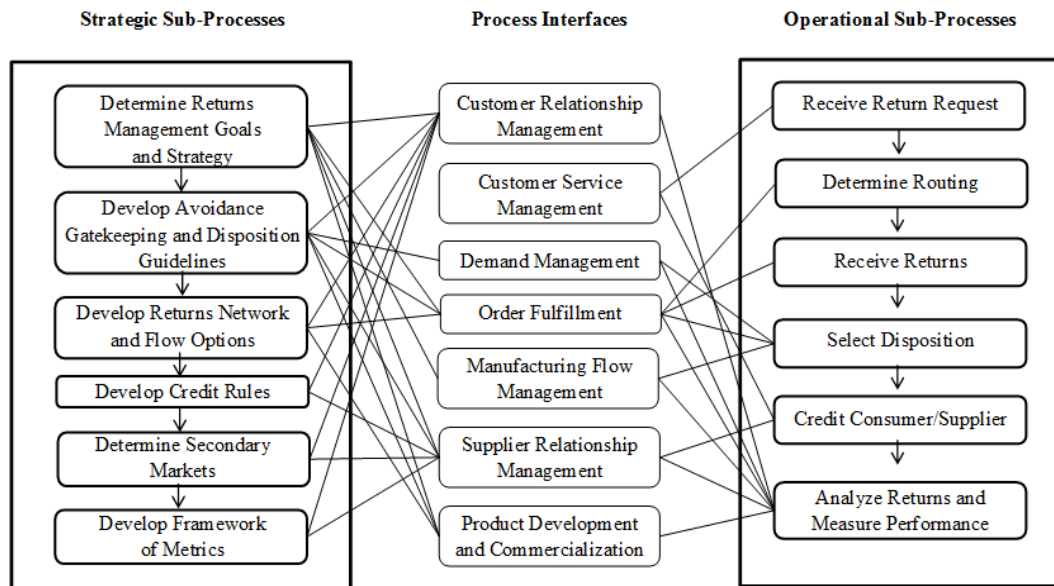


Fig. 1 Returns management process (Rogers, et al., 2002)

2.1.2 The Strategic Returns Management Process

The purpose of the strategic position of the returns management process is to create a formal structure through which the operational process is executed. For the implementation of returns management, it provides the blueprint. The strategic process consists of six sub-processes, as show in Figure 2. (Rogers, et al., 2002)

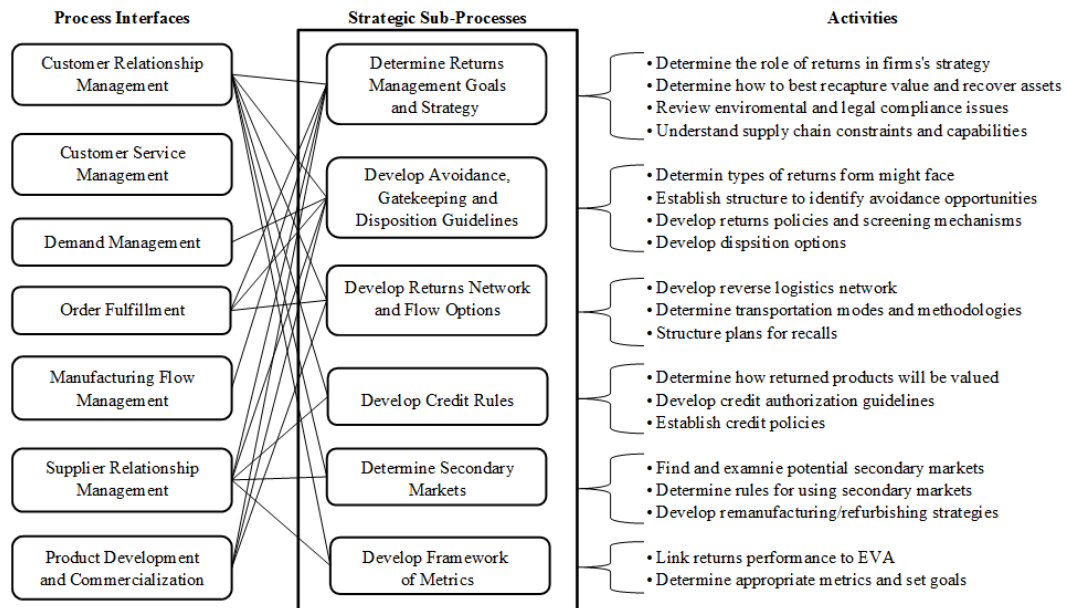


Fig. 2 Strategic returns management process (Rogers, et al., 2002)

A company's returns management capacities can be used strategically to improve the overall performance of the firm. For instance, return policies and standards can be used to improve profit, enhance customer loyalty and develop the brand or company's public image. Increased customer loyalty can grow due to return policies by reducing the risk to the customer. A customer is expected to purchase more items if they know that it can be returned if the item does not sell. Management can also use return standards or policies to enhance loyalty from small retailers or wholesalers by helping them organize their inventories. (Rogers, et al., 2002)

The process team has to first consider the way returns management may contribute to enhanced profits and the role that returns play in their company's general customer service strategy, in order to design a returns management system. One more key thought in determining the goals of the returns management process is to be aware of the legal and environmental regulation issues that impact the company and the supply chain. Furthermore, the company needs to determine the types of returns the firm might receive and develop policies and standards and screening mechanisms to handle those predictable returns. (Rogers, et al., 2002)

Returns avoidance includes selling and developing the item in a manner such that return requests are reduced. This is a critical step of the returns management. Avoidance can be achieved through different ways. For instance, it can be accomplished by giving better directions to the customer concerning how to properly operate the product or through improved product quality. Furthermore, the company has to develop clear credit rules with input from both customers and suppliers in order to decide how the returned products should be valued and handled. (Rogers, et al., 2002)

2.1.3 The Operational Returns Management Process

The operational returns management process, Figure 3 is developed at the strategic level. For returns management, the operational process is a guide for managing returns transactions. (Rogers, et al., 2002)

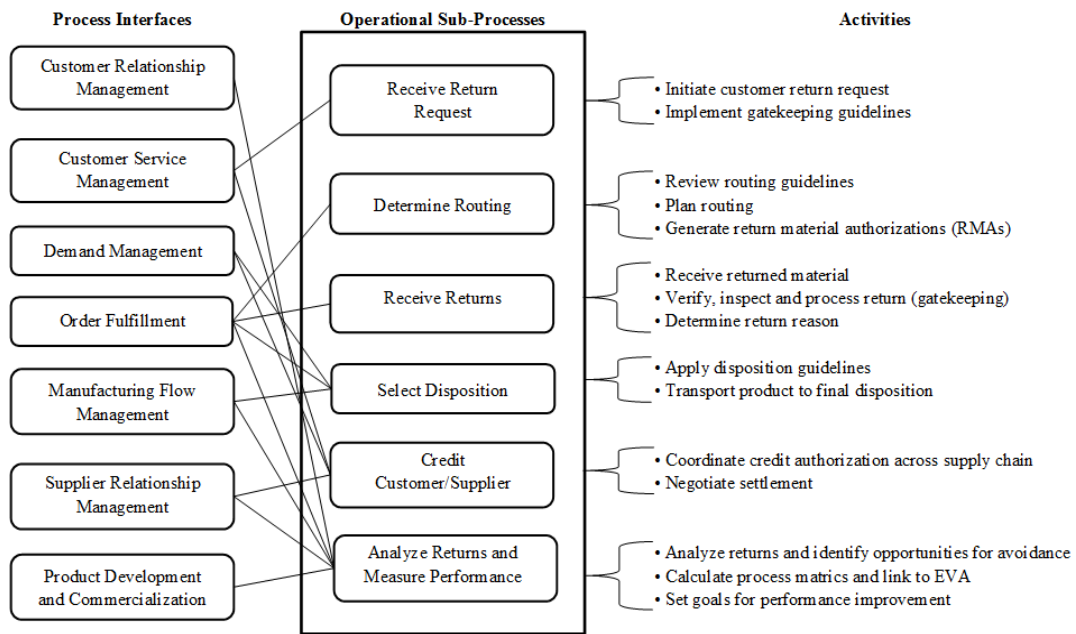


Fig. 3 Operational returns management process (Rogers, et al., 2002)

The operational process starts when a return request is received from the customer. When a return request is received, routing is determined based on the policies and guidelines established in the strategic portion of the process. The routing activity is for the most part a planning function. During the routing activity, a signal is sent to the order fulfillment location that the returns are on their way. The order fulfillment process may help in determining the routing. If the returned products are sent to a central return department or a warehouse, items need to be confirmed, inspected and processed. Usually this is a manual process that should be finished as quickly as possible to improve cash flow. The team at the return department determines the reason codes for the returns, in order to develop more significant performance metrics that can give valuable information both within the firm and to customers and suppliers. Failure to inspect products carefully and established reasons for returns may lead to even higher costs. (Rogers, et al., 2002)

The next process in the operational returns management process is to inspect each return and to determine appropriate disposition. Rules and guidelines, developed in the strategic returns management process, are used to select the final disposition and should be available in a database for workers processing returns. Once the returns have been processed, a credit has to be done to the supplier or customer. The last stage in the operational returns management process is to evaluate the returns and measure performance. A significant part of this step is to use the data on returns to recognize opportunities for avoidance in order to make improvements to the items and the other processes. (Rogers, et al., 2002)

Another description of the product return process has been made by Stock (2009), and this process can be grouped into four instead of six steps: 1. Receiving – consists of activities such as unloading and distribution of product returns to processing departments; 2. Processing – includes issuing customer credits and data entry; 3. Sort system – routing and inspection of returns to disposition point; and 4. Disposition – placing the product back into temporary storage or inventory, repackaging, refurbishing, repair or remanufacturing. (Stock & Mulki, 2009)

In a survey by Stock (2009), the result pointed out that the last three steps (2, 3, and 4) consume a large percentage of the time spent in the product return process.

2.2 Reverse Logistics

Terms such as reverse logistics and returns have been used to explain some of the activities within returns management (Rogers, et al., 2002).

The first known definition of reverse logistics was proposed by Stock (Zhou & Wang, 2008, p. 71):”... the term often used to refer to the role of logistics recycling, waste disposal, and management of hazardous materials; a broader perspective includes all activities relating to logistics carried out in source reduction, recycling, substitution, reuse of materials, and disposal.”

Another definition of reverse logistics proposed by Rogers (2002, p. 4) is: “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 of proper disposal.”

Reverse logistics is sometimes called “logistics backward”. That is because its flow of goods moves in the opposite direction compared to the straight supply chain. The forward flow of goods moves from the supplier to the manufacturer and then the retailer to the customer. Reverse logistics deals with all the different flows of goods and information that are essential to collect used products, packing materials, production scrap and other residues and take them to a place where they can be reused, remanufactured, recycled, or disposed. (Dyckhoff, et al., 2004)

According to Benjamin et al. (2012) there are four distinct organizational entities that have an effect on the company’s reverse logistics operations. They are:

- suppliers (input)
- buyers (output)
- governments (regulatory)
- competitors (competitive) (Benjamin, et al., 2012)

Reverse logistic has also become a competitive necessity as customers demand more tolerant return policies. One reason for the increased returns is the short lifecycle of products. All types of companies must deal with the problem of regaining products and decide the proper disposition that will retain value that would otherwise been lost. A correct handling of returns also has important customer service implications to keep them satisfied. A good returns handling system may even be able to function as a profit center, an example of which can be that some types of products can be remanufactured and resold. The opportunity to reclaim value and maintain customers' relationship, reverse logistics program design is of strategic importance. (Richey, et al., 2005)

Reverse logistics presents an opportunity for firms to distinguish or differentiate themselves with customers. The managing of reverse movements becomes part of the business image and is often a significant evaluative principle used in vendor selection and the successive purchase decision. High quality reverse logistics can encourage longer-term relationships; buyers are more likely to repurchase from vendors who do well at managing returns. Customer fulfillment ratings can rise with good reverse managing and business profitability can be directly impacted as well. (Daugherty, et al., 2002)

Even with the possibility for such substantive savings, most reverse logistics programs have been reactive, resulting from government rules or demands from environmental groups, rather than proactive efforts to gain economic benefits. Many firms have devoted too few resources and too little attempt to successfully forecast for and manage reverse logistics. (Daugherty, et al., 2002)

In terms of subjective information regarding products return, much has been published during the last decade. However, few research studies have published specific empirical data concerning the reverse logistics practices of companies. Stock was one of the first researchers to call for more investigation in this area. Much of his research focused on environmental aspects of reverse logistics, recycling, waste and substitute disposal and specifically source reduction. (Stock & Mulki, 2009)

Practitioners and academics have the same opinion that there is a growing focus on product returns and reverse logistics as companies are beginning to take a strategic perspective of the process. (Stock & Mulki, 2009)

2.3 Reverse Logistics within the Retail Sector

The collection and disposition of reverse logistics product in the retail context has been largely ignored. Reverse logistics flow is very unlike the forward flow. The reverse logistics flow is more reactive and also has less visibility. When a consumer returns a product to a retailer, the store collects the items to be sent to a centralized sorting facility.

At the time of the returns, information about the product and its condition may be entered into the retailer's information system, and forwarded to the return processing center. Unfortunately, this information capture rarely occurs, or is inaccurate. (Tibben-Lembke & Rogers, 2002)

Rogers and Tibben-Lembke (2002) have found that many retail companies use centralized returns centers (CRCs) to process returned product. When the product arrives at the CRC a determination must be made about where the product should be sent. Employees at the CRC must evaluate the condition of each incoming item, and determine the best place to disposition the item. With returned product, a wide range of different disposition alternatives is available, each with different revenue streams. Examples of destinations for products are:

- Return to vendor
- Sell as new
- Repackage, sell as new
- Sell via outlet
- Remanufacture/refurbish
- Sell to broker
- Donate to charity
- Recycle
- Landfill (Tibben-Lembke & Rogers, 2002)

If it is possible, the retailer's first alternative usually is to sell the item as new. If this cannot be done, a full refund from the vendor is the next most profitable option. When the retailer purchases the product from a vendor; an agreement must be made whether the retailer would be able to return the product to the vendor, and under what conditions. If it is not possible to return the product, the retailer has to try to sell the product again through an outlet store or web site, which generates reduced profits. Furthermore, before the product can be resold, it may need to be repackaged or remanufacture, which again reduces profits. (Tibben-Lembke & Rogers, 2002)

The longer a product stays at a CRC, the more potential for damage, and the more its value is declined. For seasonal products, by the time a product gets sold, and then returned, the season may have passed. The product is then worth less than it would have been if it could have been resold during the season. Given the relatively short lifecycle, reselling quickly is very important in recovering as much value as possible. Once a seasonal product has reached the end of its selling season, its value decreases significantly. If a returned product can be dispositioned quickly, it may be possible to sell the product off during its season. (Tibben-Lembke & Rogers, 2002)

When reselling products, either for the primary or for the secondary channel, the vendor has an additional benefit over the retailer. If a product has not sold very well for one retailer, the vendor may be able to sell the product for the full price to a different retailer that is experiencing higher demand for the product. (Tibben-Lembke & Rogers, 2002)

Unlike forward logistics, incoming products from reverse logistics are not tracked broadly because of the lack of information systems resources necessary. Reverse logistics is generally a lower priority for companies and the information systems resources is necessary to increase its efficiency and effectiveness that today generally are not available. Rogers and Tibben-Lembke (2002) found that a lack of information systems resources and a general lack of acknowledgment of the importance of reverse logistics were two of the largest barriers reverse logistics executives face. This lack of visibility of product coming into a return center makes short-term operations planning more difficult. At a return center, an ideal information system would allow them to see all of the returned items, including those items still at the store waiting to be sent to the vendor. This would allow planners to see how many units of a particular type are expected to arrive, which would allow them to schedule processing sortation planning more efficiently. (Tibben-Lembke & Rogers, 2002)

2.4 Information Flow

Information support is mainly to achieve efficient reverse logistics operations. Reverse logistics is characterized by uncertainty and a need for timing and processing. Some industries can rely on historical information to project the amount of returns while returns in other industries are much harder to predict. Even in those less predictable industries, the managers must be prepared to quickly process and handle the returned products, although they may not know when or if the products will come back. Thus, timely and correct exchange and access to information should be considered a top priority. But information coordination is complicated because of the multiple parties involved. There is great need for coordination between the parties to ensure maximum efficiency. A better communication would facilitate daily interactions and promote longer business relationships. (Daugherty, et al., 2002)

Because of the unpredictable nature of reverse logistics, trading partners must work together to ensure efficiency. Relationship commitment is believed to be a key easing variable between information system support and performance outcomes. (Daugherty, et al., 2002)

The networks must deliver information that matches the company's business model. This means information must be continuously available and shared across organizations. Such information support is a particularly important aspect of reverse logistics.

Available and accurate information offers necessary support for accommodating non-routine events such as product returns. Information support also helps to regain value that might otherwise be lost. It also aids in improving buyer-seller relationships through improved customer service and satisfaction. One example can be that if a manufacturer effectively handles the reverse logistics process through efficient pick-up and handling of unsold product, a stronger relationship is built with retail trading partners. However, effective, fast cross-organizational sharing of information is only possible if information systems are consistent. (Daugherty, et al., 2002)

One of the most serious problems that firms face in the execution of a reverse logistics operation is the lack of good information. This is shown in Figure 4, which describes the role of information systems support in reverse logistics program performance:

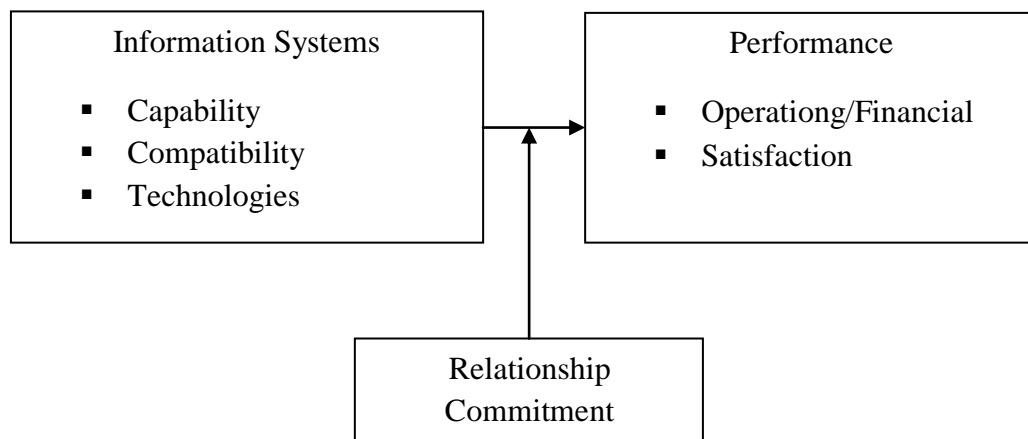


Fig. 4 The role of information systems support in reverse logistics program performance. (Daugherty, et al., 2002)

Producers of different kinds of products more and more face requirements to implement systems to manage the returned products. Instruments to plan and control the different return processes will have to be developed and provided with relevant information. Cooperation between producers and retailers has to be coordinated and supported by sufficient instruments. (Dyckhoff, et al., 2004)

The expansion of the producer's responsibility into the after-use phase emerges from the necessity to develop instruments to cope with the arising planning problems. While a traditional supply chain ends at the customer, the new way of thinking causes a number of additional aspects that have to be considered. The following examples are the most relevant:

- Uncertainty in reference to volumes, quality, composition, and timing of the collected discarded products leads to an increased system complexity.
- An imbalance of supply of discarded products on the one hand and the requirements of the producers as demand on the other hand.
- The additional market opportunities that can arise from these processes are unexplored until now. (Dyckhoff, et al., 2004, p. 64)

The instruments to support planning and control of the reverse logistics should assist decision making both on strategic as well as on operational levels and thereby consider the listed aspects. (Dyckhoff, et al., 2004)

There can be two steps for a successful information concept, where the first is that the needed data is to be collected at the producer and then be merged and collected effectively. The second step will then be to provide and transfer the information with the support of inter-organizational information structures and systems in order to support the planning processes at the return center. (Dyckhoff, et al., 2004)

2.4.1 Electronic Data Interchange

Electronic data interchange (EDI) is basically a tool that allows automated information exchange between different tiers in the supply chain. (Christiaanse & Kumar, 2000) The idea of bundling information electronically to help logistic processes was generated after the Second World War. It was when the allied forces had to find a way to efficiently support the part of Berlin that remained in western hands. In the 1960s this idea started to spread among business and organizations, and in the seventies the first EDI standards were introduced. It was also now the adoption of EDI started to gain popularity as the technology came to the point of "no return". With the accessibility of point of sales data for retailers in the beginning of the 1980s, the interest in EDI implementation in the relationship between producers and retailers gained more trust. Producers had now potential access to real-time sales data, quantitative analysis of the data to improve logistic processes, and as a consequence new forms of buyer-seller co-operative endeavor based on real-time exchange of information emerged. (Mossinkoff & Stockert, 2008)

There are four levels in the implementation of EDI technology. From the lowest to the highest ones these embrace: inter-firm computer files transfer, application to application file transfer, interconnected or shared databases and a fixed work environment. To be able to fully utilize the potential benefits deriving from the implementation of EDI, companies must agree on a set of process standards; this often requires consistent investments in time and money, and undervaluation of this feature is one of the main reasons for failure of EDI implementation. (Mossinkoff & Stockert, 2008)

2.4.2 Hypertext Markup Language

Hypertext Markup Language (HTML) is the most widely used languages on the web. When creating a document in a word processor, styles can be added to the text to explain the document's structure. For example, headings can be distinguished from the main body of the text using a heading style which usually is with a larger font. Tables can be inserted to the document to hold data, or create bulleted lists for a series of related points, and so on. The key purpose with this kind of markup is to provide a structure that makes the document easier to understand. (Duckett, 2008)

When marking up the document for the Web, a similar process is performed, except adding things called tags to the text. With HTML, the key thing to remember is that the tags are adding to indicate the structure of the document, which part of the document is a heading, which parts are paragraphs, what belongs in a table, and so on. Browsers such as Internet Explorer, Firefox, and Safari will use this markup to help present the text in a familiar fashion. However, the way these are presented is up to the browser, the HTML specification does not say which font should be used or what size that font should be. (Duckett, 2008)

2.4.3 Cascading Style Sheets

Cascading Style Sheets (CSS) takes control over the style of the document, including the colors and size of fonts, the width and colors of lines, and the amount of white space between items on the page. The CSS specification works by allowing specifying rules that say how the content of elements within the document should appear. Different rules to control the appearance can be set of every element in the page so it can start to look more interesting. (Duckett, 2008)

2.4.4 PHP Hypertext Preprocessor

PHP comes from Personal Home Page tools, but today it is mainly known for PHP Hypertext Preprocessor. It is a server-based script language that is used for creating dynamic web-pages. The dynamic web-pages are generated when a user interacts on the page. PHP is among the first created scripting-languages to be inserted into an HTML source document, instead of using an external file to process data. It is platform independent and can be used on almost every web-server. (Ek, 2010)

2.5 A Case Study on a Similar Experiment

A case study was made in order to analyze an information system focusing on recycling in a company. In order to integrate all the required information for recycling in extended supply chains, they suggest the development of a communication platform. It will connect the product manufacturer phase with the after-use phase and enables all the involved partners to have access to the needed information. On this platform all relevant product and process data for both the upstream as well as the downstream information flow from the company to the producer will be provided. According to the authors, the collection of information has to be realized on two levels:

- First, the inter-organizational level between suppliers and manufacturers.
- Second, the intra-organizational level, where information out of the manufacturers own information systems has to be gathered. (Dyckhoff, et al., 2004)

On the inter-organizational level the suppliers can use defined internet forms where they have to insert their data according to predetermined materials codes. These codes will then be assigned to different categories in a standardized way. On the intra-organizational level the material and components have to be matched to these material codes within the product development phase. In this way, the product data can be directly extracted to the recycling categories. The generated recycling passports will be made available on the Internet. Therefore it is important to use a format that cannot be changed or modified. The three authors explain that with support of the internet technology, companies will be able to access relevant information by the use of retrieval functions. (Dyckhoff, et al., 2004)

3. Problem Description

The investigated apparel company is operating on the global market and expands their sales twenty per cent each year, resulting in increased pressure in the return flow. To meet this future demand, the return process has to be more efficient and not so time consuming. Today, the majority of all the returns are sent back to the central return department.

In order to return products, the retailers have to contact the order department at the apparel company, to provide information about the quantity to return. The retailers cannot return packages until they receive a return number from the focal company. If this number is missing, the apparel company has to contact the retailer in order to clarify the issue which is a time consuming process. If the retailer has not noticed the returned products on a piece of paper, such as article number, sizes and quantity, the return department has to write this down on their own return note, in order to insert this information into the computer system.

As the retailers do not have clear guidelines how this should be done, this results in many different ways of writing. This is a time consuming process and results in duplication of work as the retailer generally has to note what to send back in order to make it easier at their own inventories. The apparel company loses control since the retailer decides whether to send a return note with the package or only report the quantity of returns. It is difficult to plan and organize when the return department does not know which types of products they will receive which generates the problem that the items of the current season do not get back into the market quickly. Also, it is more difficult to organize employees to meet higher return pressure.

Furthermore, retailers cannot go back and see the history in a shared computer system of what they have returned in the past. Today, the retailers do not communicate with each other if one needs a product of a special kind that some other retailer may have. For instance, at a retailer one product does not sell, while at another retailer it is very popular. Because of the lack of communication, a trade cannot be completed in an easy way between retailers. Instead it has to go through the apparel company. The apparel company does not have any information or control over this, and cannot see what kind of product is shipped back before they receive the packages. Today, retailers cannot in an easy way communicate with each other in order to switch products.

There are two different ways to close a return process which depends on the type of store the items are sent from. If the returned package is from an own shop, only an inventory movement is needed. When a private owned distributor return items, a credit has to be done in order to repay the customer and update the stock inventory. This procedure is quite time consuming as each product's price is determined one by one.

3.1 Formal Problem Formulation

One research question and one hypothesis are investigated in this study. These, followed by the aim of the study, are stated explicitly in this section.

3.1.1 Research Question

The research question investigated in this study is:

Where in the product return process can improvements be made in order to make the information flow more efficient between retailers and an apparel company?

3.1.2 Hypothesis

The hypothesis tested in this study is:

By creating a web-based return form, the information flow between retailers and an apparel company will be more efficient, resulting in a more effective and structured product return process.

3.1.3 Purpose

The aim of this study is to improve the product returns process information flow between the investigated apparel company and their customers. Through a web-based return form, available for both parts, an experiment will be performed in order to test if this method will make the returns process more efficient.

4. Methods and Materials

This study emerged from a case study made at the returns department of an apparel company based on a research question. An improvement area was discovered through interviews, internal documents and observations. This area was investigated in existing theories through books and scientific research papers. From the theories and the case study, a hypothesis was created in order to be tested. To strengthen the hypothesis, an experiment was developed and performed at selected retailers and at an apparel company.

4.1 Case Study

A case study has been made in order to gain knowledge on how the return process and the information flow works between an apparel company and their retailers. A process mapping was constructed at the apparel company's returns department in order to illustrate the product return process. The following questions were kept in mind during the process mapping;

- When does the activity occur in the process and why?
- Which employee is performing the activity and why this employee?
- How does the employee perform the activity and why does it have to be performed in this way?
- What is the goal with the activity and why does it have to be performed?
- What is the location where the activity is performed and why does it have to be performed here?

Yin (2009, p. 18) describes case studies as 'an empirical enquiry that investigates a contemporary phenomenon within its real-life context.' The case study was performed at the investigated apparel company's headquarter. Through observations, interviews, access to relevant documents and attendance at meetings, an essential insight was gained regarding how the product return process functions today. Interviews were made with selected retailers who collaborates with the company to receive information regarding their return process.

Interviews were made with four respondents at different positions: Logistics Manager, Quality Manager, Returns Department Manager, and Returns Department employee. The purpose with the interview questions was to gain the interviewees' points of view and what they see as relevant and important (Bryman, 2012). A number of structured introductory questions were created, in order to start the interviews and receive knowledge about their return process. Furthermore, only key notes were constructed to keep the interview flexible. In this way new questions could be asked to follow up the interviewees' replies, as well as reformulate and vary the order of the questions (Bryman, 2012).

Through this kind of qualitative interviews with both semi-structured and unstructured questions, rich and detailed answers were gained. The interviews were performed on several occasions at the apparel company.

Semi-structured interview questions were also asked to selected retailers. These interviews were made with four respondents at three different retailers. The respondents' position is retail manager. The aim of the interviews was to gain understanding on how the return process and the information flow works between the retailers and the apparel company. The interview questions asked to the apparel company and the retailers is included in Appendix 1.

An observation was made at the returns department of the apparel company to be able to see how it works in the natural setting of the "case". In this way, relevant behaviors and environmental conditions could be taken into consideration. Only through interview questions, the information from the interviewees could be subjective. Through observation an objective view of the process is also included. According to Yin (2009), observation is useful in order to provide additional information about the area being studied.

Relevant documents regarding the information flow and the return process was analyzed to confirm evidence from other sources. Furthermore, the documents provided other specific details and gave clarity how the apparel company operates today. Hence, the documents provided more questions that appeared.

4.2 Experiment

This part is divided in two different steps. First, creation of the web-based return form is describes, followed by the performance of the experiment.

4.2.1 Creation of Web-Based Return Form

In order to receive knowledge regarding important factors to include in a return form, a discussion was held with the return department at the apparel company. Information was gained from internal documents such as an in-house return note and internal guidelines concerning handling of returns. Furthermore, a dialogue was made with selected retailers in order to receive their point of view of the return process.

The gained information from the various inputs was collected and compiled to identify the relevant factors to include in the return form. The following factors are important to for an apparel company:

- Return number
- Customer name
- Customer number
- Date of return
- Reason why returning
- Article number
- Sizes
- Return quantity
- Arrangement between apparel company and retailer (credit, exchange of product, other arrangement)

One more important factor regarding the return form is the design. It should be easy to understand, simple to fill in, and have an aesthetic design. The return form should also facilitate for the retailer so that mistakes cannot be made. Retailers should for instance not be able to fill in letters where there are supposed to be numbers. Furthermore, the retailers should not be able to submit the return form without filling in all the various columns. This is to prevent misunderstandings between the retailers and the apparel company.


In order to make a web-based return form, an Internet domain¹ was created since access to the apparel company's own domain was not permitted. HTML was used to create the set-up on the domain, and CSS to create the design. Each time when the design was changed, it was done in the CSS codes. Through establishing a domain, access was gained to a database, which is a requirement in order to work with the system PHP. In order to use PHP, data codes were purchased to implement in the Internet domain. The data codes used when creating the web-based return form shows in Appendix 2.

The domain consists of two main parts: one internet address the retailers have access to and one that the apparel company operates in. The Internet address that the retailers use is the return form, see Figure 5. The set of important factors mentioned above is implemented in the return form. The retailers fill in the various columns before submitting.

¹ Domain - Technical computer term for a variety of Internet addresses (Nationalencyklopedin, 2012)

Return Form

Date:

/ / 
DD MM YYYY

Return number:

Customer:

Customer number:

Phone number:

Reason:

Article number (quality/collar/ front/color):

37 / 14 %

38 / 15

39 / 15 %

40 / 15 %

41 / 16

42 / 16 %

43 / 17

44 / 17 %

45 / 17 %

46 / 18

47 / 18 %

48 / 19

49 / 19 %

Article number (quality/collar/ front/color):

37 / 14 %

38 / 15

39 / 15 %

40 / 15 %

41 / 16

42 / 16 %

43 / 17

44 / 17 %

45 / 17 %

46 / 18

47 / 18 %

48 / 19

49 / 19 %

Arrangement between apparel company and retailer:

- ☐ Exchange of product
☐ Credit
☐ Other arrangement

Other arrangement

Submit

Fig. 5 Web-based return form

The other Internet address belonging to the apparel company has a log-in with a password so they are the only ones able to access the information. On this page, the company can edit and change the return form. When a retailer submits the return form, the document is uploaded automatically on this page as well. The apparel company can easily see information regarding the exact amount of products that will be shipped back. Figure 6 shows how the page will look like when the apparel company signs in to their own page. Figure 7 illustrates how the page will appear when retailers have submitted a return form.

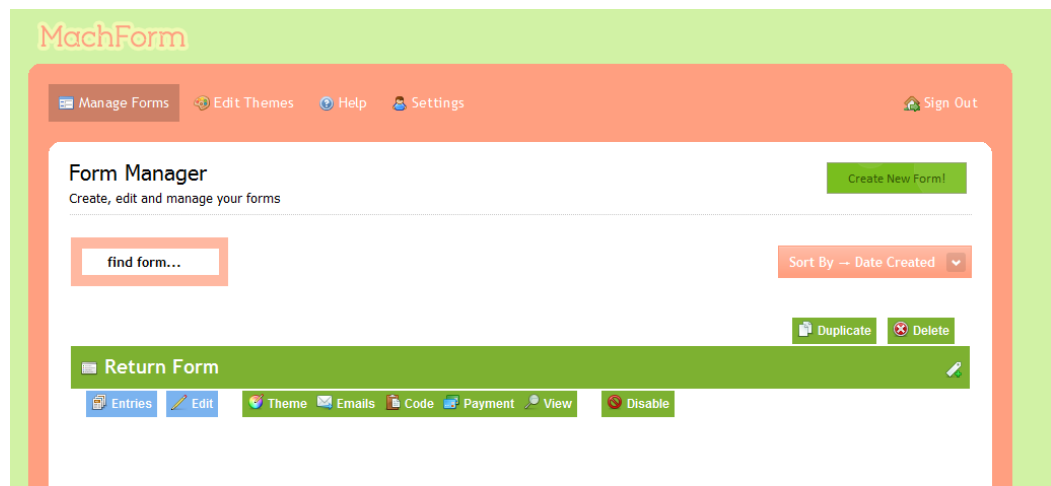


Fig. 6 View of the main page.

MachForm

Manage Forms
Edit Themes
Help
Settings
Sign Out

Return Form
Entries
#13

Displaying entry #13

Date:
29 May 2012

Return number:
456789

Customer:
Untitled

Customer number:
4585

Phone number:
0737665555

Reason:
Untitled

Article number (quality/collar/
front/color):
45 85 96 36

37 / 14%
5

38 / 15
1

39 / 15%
1

40 / 15%
1

41 / 16
1

42 / 16%
1

43 / 17
1

44 / 17%
1

45 / 17%
1

46 / 18
1

47 / 18%
4

48 / 19
5

49 / 19%
1

Article number (quality/collar/
front/color):
45 85 96 36

37 / 14%
1

38 / 15
5

39 / 15%

40 / 15%

41 / 16

42 / 16%

43 / 17

44 / 17%
1

45 / 17%

46 / 18

47 / 18%

48 / 19

49 / 19%

Arrangement between apparel company
and retailer:
☒ Other arrangement

Other arrangement
Untitled

Entry info

Date Created
7 May 2012 - 07:59:26 PM

Date Updated

IP Address
83.252.96.57

Edit
Email
Print
Delete

Copyright © AppForm Software 2007-2012

Fig. 7 View of submitted return forms.

4.2.2 Performing the Experiment

The experiment was performed at selected retailers and at the apparel company's return department. Interview questions were prepared and put to the users before the executions, both in a qualitative and a quantitative way, in order to have a dialogue as well as receive statistic data. The qualitative interview questions were semi-structured, and asked in order to get a general picture of how the respondents perceived the web-based return form. Furthermore, the quantitative questions generated direct answers that could be transferred into numbers (Bryman, 2012). The questions were asked so that the respondents were directed to answer in the range one to five, where one meant very poorly, two meant poorly, three meant satisfactorily, four meant well and five meant very well. These interviews were performed at one occasion.

Questions were asked to the users before testing the web-based return form to get a clearer view how returns are handled today. The questions were also asked to get them to start thinking and reviewing advantages and disadvantages with the process. Hence, the retailers and the apparel company were given the opportunity to try out the return form. Afterwards, more questions were asked to form a basis on which to build an idea of what they thought about the return form in general.

The experiment was performed in the same way at the retailers and the apparel company; only the interview questions differed, shown in Appendix 3.

4.3 Method Discussion

Through the case study, a deeper knowledge was gained regarding a product return process within the apparel industry. During the observations the process could be seen in its real-life context without influences from employees, resulting in an objective point of view. A true picture of how it really works is gained and not only explanations from the employees how it should work.

Qualitative questions contributed to have discussions with the employees. As the knowledge regarding the return process was limited, the unstructured and the semi-structured questions were appropriate. New questions could then easily be created after receiving answers, questions that could not be prepared before the interviews. As the interviews were performed on several occasions, reflections could be made between the interviews. The case study gave the possibility to detect a problem with own eyes that the company did not even know existed.

Theory was not used in order to create the design and content of the web-based return form, only a discussion was made with the apparel company. The absence here is having no more than one input, resulting in a customized return form for the investigated apparel company. In another perspective, it could not be made general for all the apparel companies as products can differ. Either way, some of the content could be used for several apparel companies; this is only an example to use as a model.

As access to the apparel company data base was not possible, an extern domain was created in order to develop a prototype. If access had been possible, a more advanced and suited system could be done. Furthermore, the limited time period prevented to further develop the system and implement the idea into the company. However, the main goal was to illustrate the idea of a web-based return form, not a finished product that could be implemented directly.

Having interview questions before and after was significant for the experiment at the retailers. Through interview questions before the experiment, an insight was given how they handled return today, as well as getting the retailers to reflect over this process. By having both qualitative and quantitative questions after the experiment at the retailers and the apparel company, enabled statistic data and an open conversation regarding the return form. The main goal of the experiment was to make the product and information flow more efficient at the apparel company and their retailers was not the main target. However, the retailers' opinion is important as they have to accept this new system in order to implement it. Therefore a few retailers were chosen to receive an approval.

The experiment was only performed once at each place, which may seem rather limited. If it would be performed several times, improvements could be made after each occasion. However, for this study where the main goal was to illustrate an idea, one experiment occasion is enough in order to strengthen the hypothesis.

The selected theory for this study was gained from books and scientific research papers. Through carefully searching after the main scientists in the area of return management, relevant articles and books could be found. Information regarding the idea of this study was limited and only one article was discovered concerning the main idea.

5. Results

The results from the apparel company case study, interviews with retailers, the apparel company experiment and the retailers experiment are presented in this chapter.

5.1 Apparel Company Case Study

Figure 8 illustrates the product and information flow between retailers and the apparel company. The return process begins with the retailer contacting the order department at the headquarters, to inform the return quantity. The retailer receives a note with the company's address and a return number to use when sending back items. This prepares the return department of the quantity and who the retailer is.

The packages arrive at the company's goods reception and are directly handed to the return department for evaluation. The return department ensures that the return number is correct and previously inserted in the computer system by the order department. If this number is missing, the order department has to contact the retailer to be given the right information. The package will be sent back to the retailer if the returns are not approved and will be charged for the transport fee.

If the return number is right, the products are divided in types and colors in order to identify the amount. If the retailer has not noticed the returned products, such as article number, sizes and quantity, the return department has to write this down on their own return note. The quality of the items is also ensured and if it is necessary the bags and labels have to be replaced, in order to resell the products again.

When the products have been inspected, the stock position is found through the apparel company's computer system. The warehouse has different stocking areas depending on what collection the product belongs to:

- If it is a product from the present collection, it will be sold at original price.
- If it is a product from an earlier collection, it will be sold at a reduced price.

The products are divided into size categories and placed in the correct stock position. There are two different ways to close a return process which depends on the type of store the items are sent from. If the returned package is from an own shop, in which case the company owns the products, only an inventory movement is required. When a multi-brand store returns items, where the retailer has purchased the products, a credit has to be done in order to repay the customer and update the stock inventory. The purchase price has to be found for each product so the correct amount can be refund.

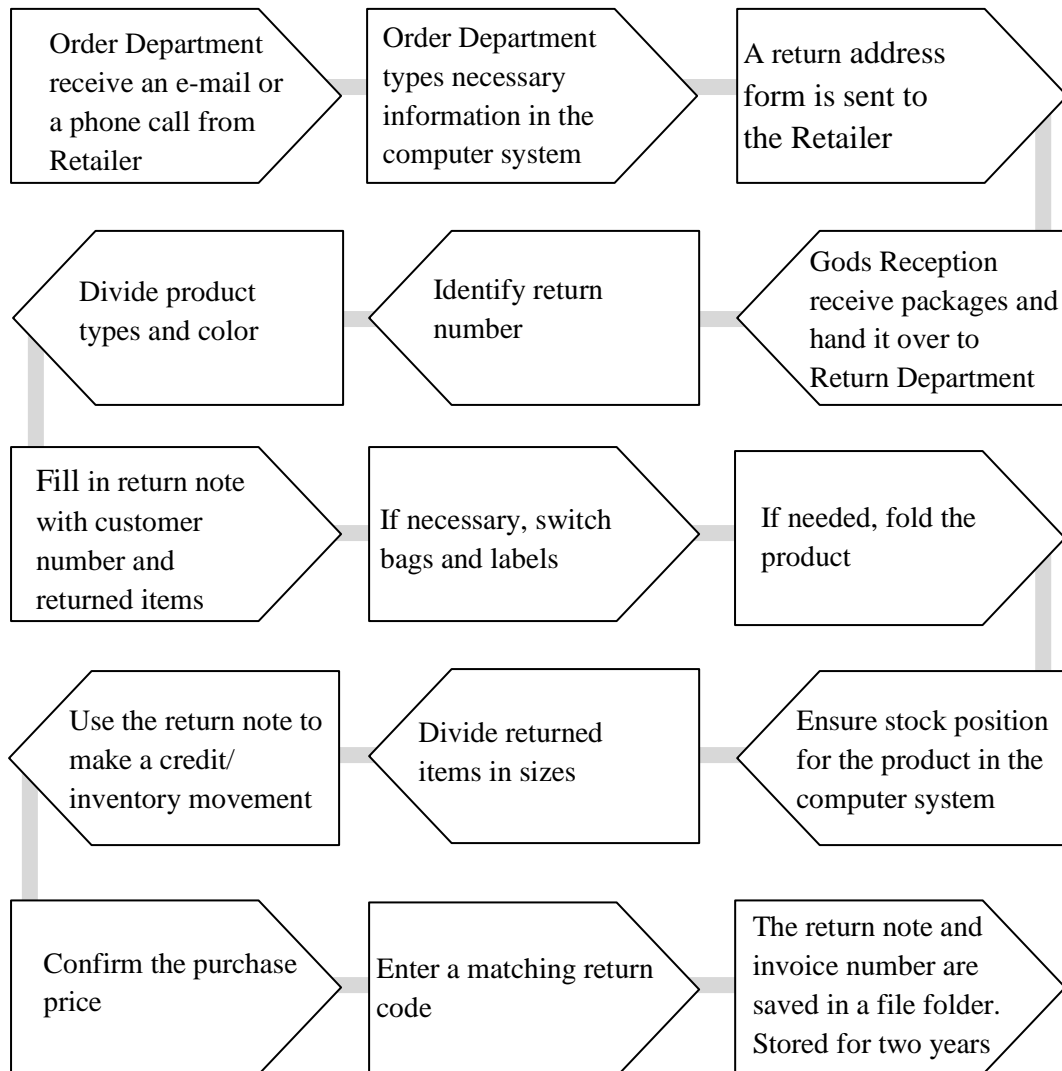


Fig. 8 Product and information flow between retailers and the apparel company

Through this case study, an insight was received where the information flow could be improved and how the web based return form could be implemented. Furthermore, knowledge about important variables to include in the return form was gained. Through this information gain from this case study, an experiment was designed and executed, in order to strengthen the hypothesis.

5.2 Interviews with Retailers

The normal procedure for Retailer 1 is to receive a return note in paper form from the apparel company, which they fill in manually. Furthermore, a bill of carriage is sent with the delivery of purchased products. The retailer does not return products often, as they have purchased products from the apparel company. They do not believe it is time consuming to return products, due to the small amount of returned products. As the retail manager is not always in the store, he believes that the return process today is inconvenient. If the retailer wants to purchase products or contact the company, they call them.

The normal procedure for Retailer 2 is to receive a return note in paper form and guidelines from the apparel company concerning how and under what circumstances to return products. The guidelines are to only return useful products and remove labels. The retailer believes it is time consuming to return product today. The return number is given by intermediates. There are several intermediates that have to approve the returned products before they can be shipped to headquarters. When the last intermediate has approved, an inventory movement could be done. This process can take up to three months.

Retailer 3 has created an own return note to use when returning products. They have purchased the products and have an agreement with the apparel company regarding the quantity returned. The retailer is allowed to return as much as they like if they switch the products to something new and stand for the shipping charge. They have received guidelines from the apparel company when returning; the product should be unpacked and the label should be removed. The retailer gathers products before returning and they believe that the return process is not time consuming as they do not return much.

All the retailers mentioned above have an own computer system they use in order to insert what products they have returned. This is done to facilitate their inventories.

5.3 Apparel Company Experiment

According to the manager of the return department, the new web-based return form will speed up the product return process. The manager believes that the design and content of the new return form is easy to understand and submit in comparison to the old return form. As the apparel company forecasts increased returns, the return department believes the new return form will facilitate to increase the efficiency of the product return process. The manager is very positive to the new idea and if the retailers are positive as well, the manager cannot see any disadvantages.

Furthermore, the return department believes it would be better if the retailers receive the return number directly through the new web-based return form. Also, the manager would like it if the article numbers were divided. Through this modification, the return department could confirm each article number more quickly. Another comment was that it would be good to be able to turn the web-based return form into a credit-note, in order to repay the customer faster. Also, the return department prefers to have a return note attached on the return package. Furthermore, a contact person should be easy to find on the return form.

The overall impression is positive and the manager of the return department believes the information flow will be clearer and more efficient with the new return form.

The logistics manager believes the web-based return form will make a significant difference within the apparel company's product return process. It is a very interesting idea that smaller companies could benefit from. Furthermore, the manager believes if the idea is easy and reasonably priced to implement, even bigger companies could receive advantages. According to the logistics manager, the web-based return form should be connected with the apparel company's business system. In this case, statistics could be gathered in order to review quantity returned and from which country etc. Also, the volume of returned product should be easy to find in the computer system in order to plan future work and employment. It is also important that the apparel company's business system inserts and updates all information from the external domain directly.

Regarding the design and content, the logistics manager would like to have the article numbers divided. The new return form should also exist in a paper form so retailers without internet could easily return products as well. Further comments from the manager are to be able to approve or reject a submitted return form from retailers. This action should be easy to view in the company's business system. If the return form is rejected, an e-mail should be sent to the retailer informing why the return request was rejected and to contact the return department in order to solve the problem. If the return form is approved, a reservation is automatically made at a transportation company containing information about the package's weight, the quantity and the retailers address. This will remove the process of manual reservation. Furthermore, the logistics manager would like to have the company's reclamations in this system as well. The overall impression from the manager is very positive and implementation possibilities were discussed.

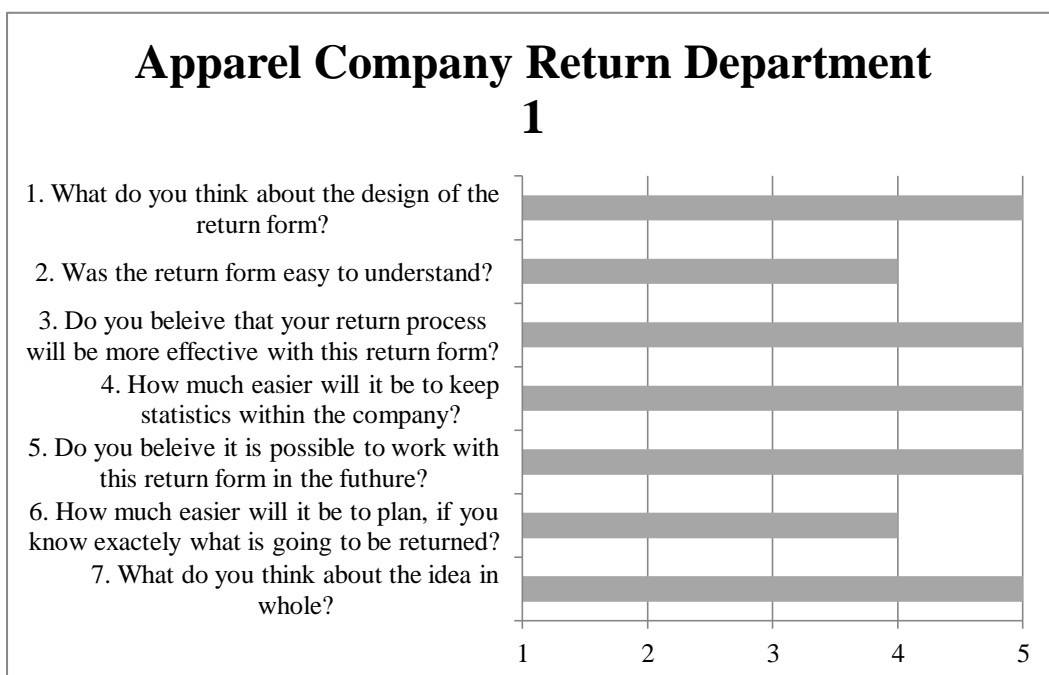


Fig. 9 Response from an employee at the apparel company

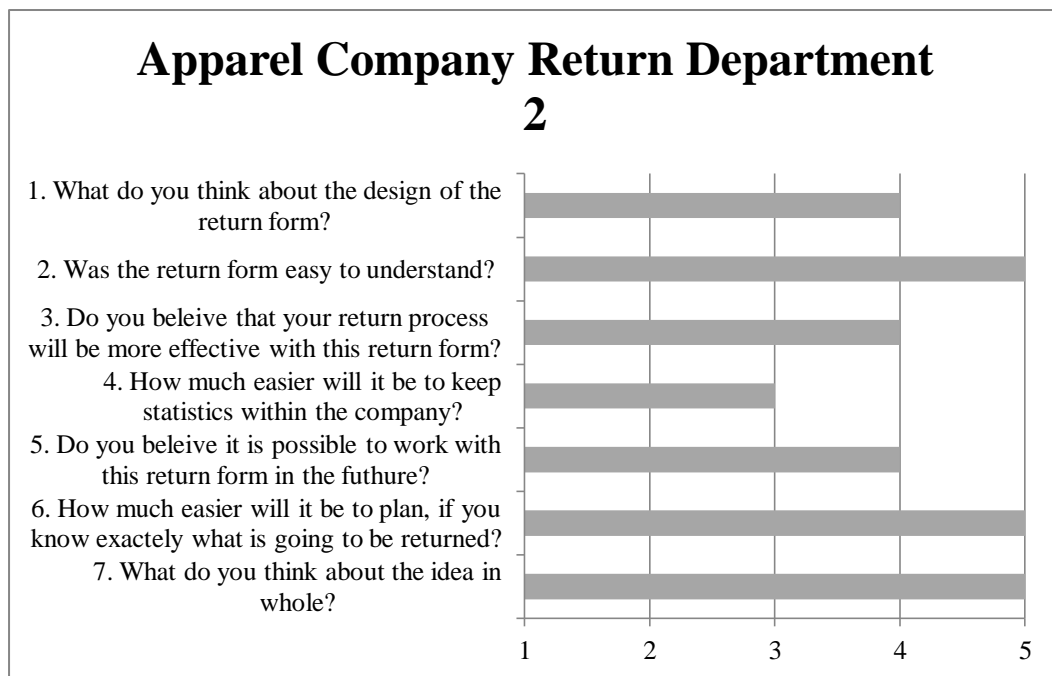


Fig. 10 Response from an employee at the apparel company

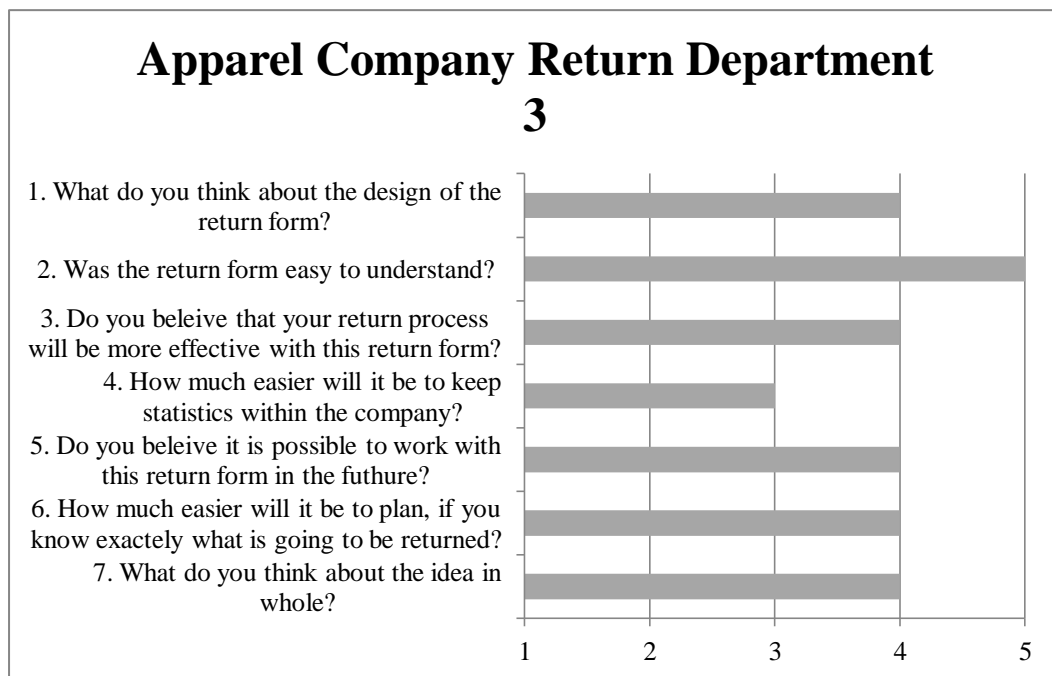


Fig. 11 Response from an employee at the apparel company

5.4 Retailers Experiment

Retailer 1 believes that the web-based return form would be much easier and more convenient to use in comparison with the manual return form they use today. It would be easier to control return products and to collect information that is necessary. The use of the return form makes it simpler to find information and the information does not get lost using a web-based return form. Today the retailer has to call the head office to receive a return number which they believe is inconvenient. Regarding the design and content of the web-based return form, the retailer is positive. They believe it is easy to understand and simple to submit. According to the retailer, this new return form will facilitate their return process and speed up the process at the apparel company which will generate a faster credit. The overall impression from the retailer is very positive.

According to retailer 2, the web-based return form would shorten the return process as there are several intermediates today slowing it down. Regarding the design and content, the retailer is very pleased as it is easy to understand and the content is relevant. The retailer had one aspect concerning the reason column. They would like to have one reason column under each article number if the reason of returning is different depending on product. The retailer's overall impression is very positive and satisfied.

Retailer 2 believes the idea of implementing a web-based return form is excellent. Today, the retailer has to call the head office to receive a return number which they believe is very time consuming. It would facilitate if they got this number directly when submitting the return form. Regarding the design and content, the retailer is very positive as they find it very easy. The retailer cannot find any difficulties with the new return form and the overall impression is very positive.

The retailers mentioned above are very pleased with the idea of a web-based return form. All retailers want to implement this new idea.

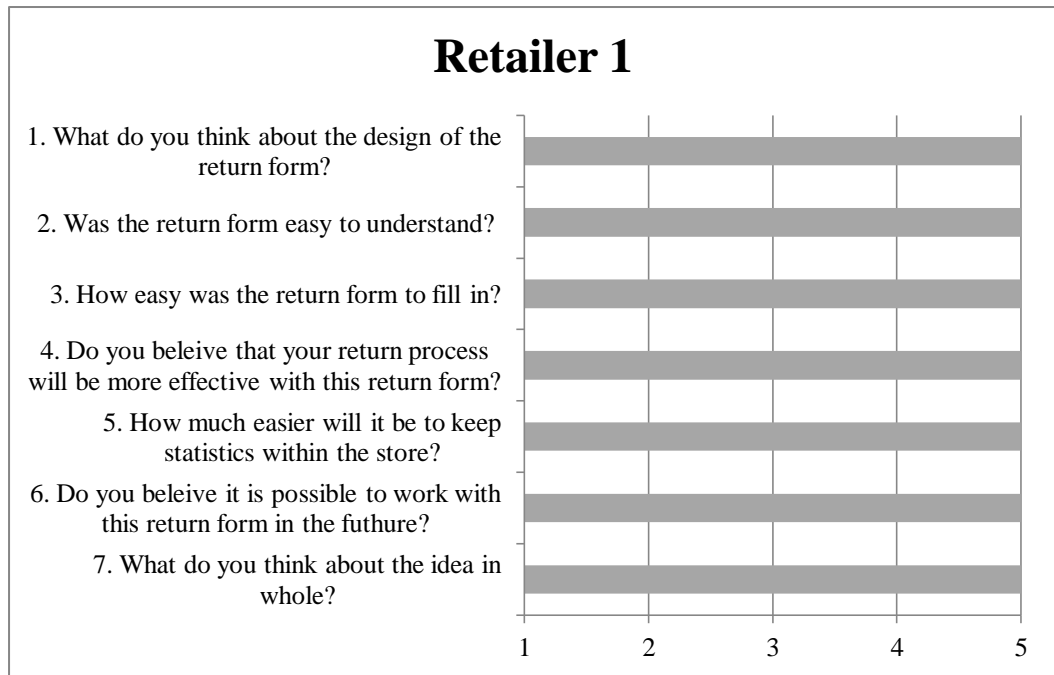


Fig. 12 Response from Retailer

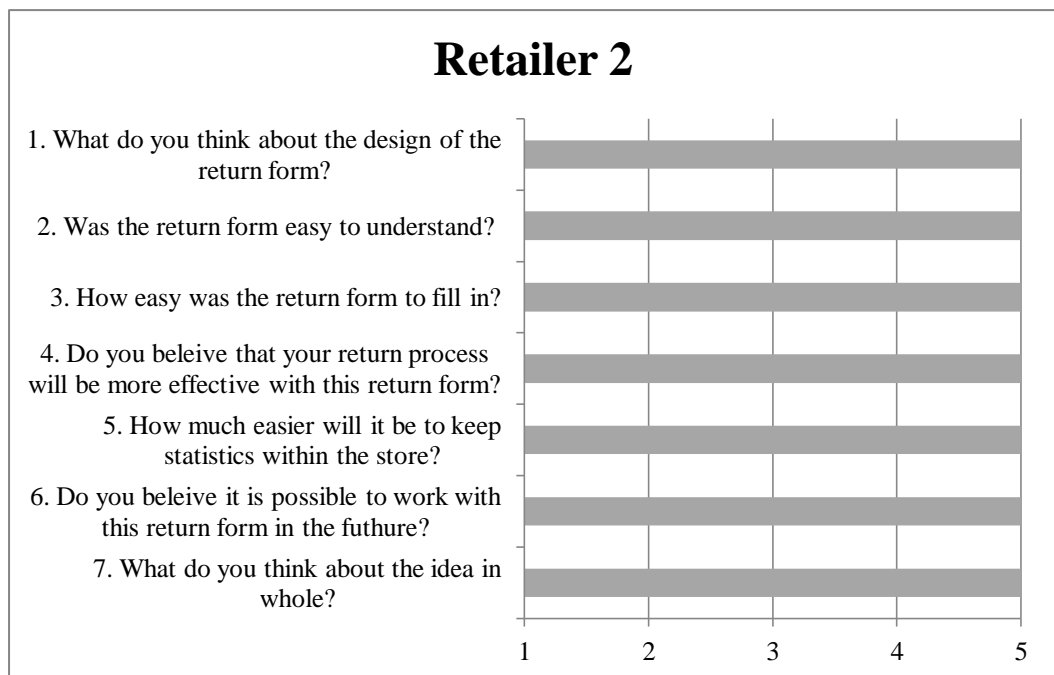


Fig. 13 Response from Retailer

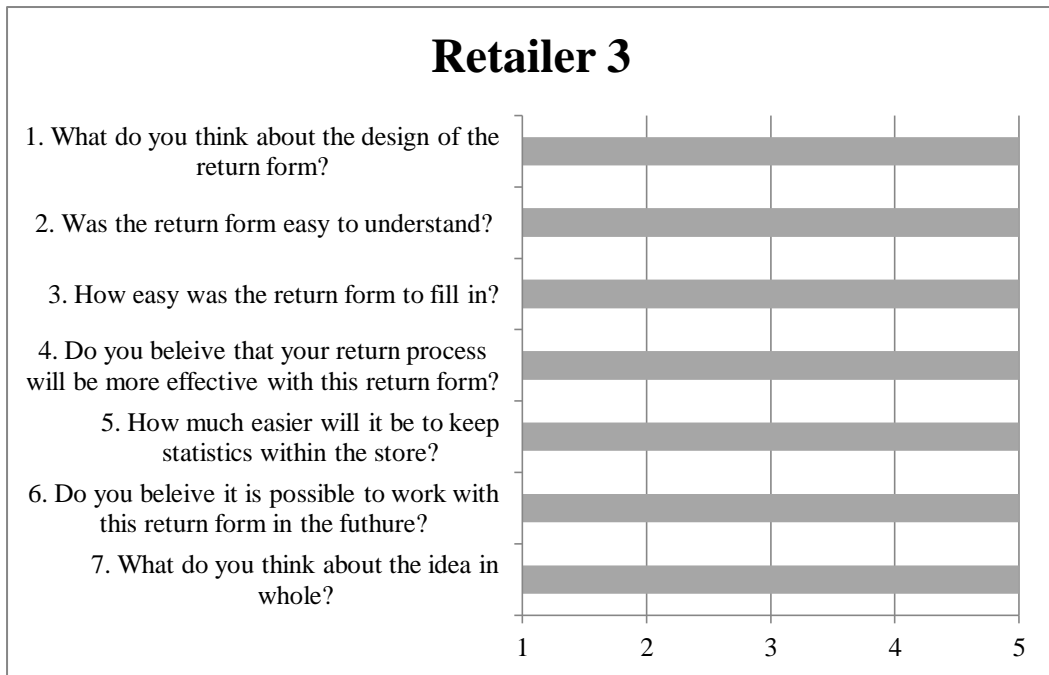


Fig. 14 Response from Retailer

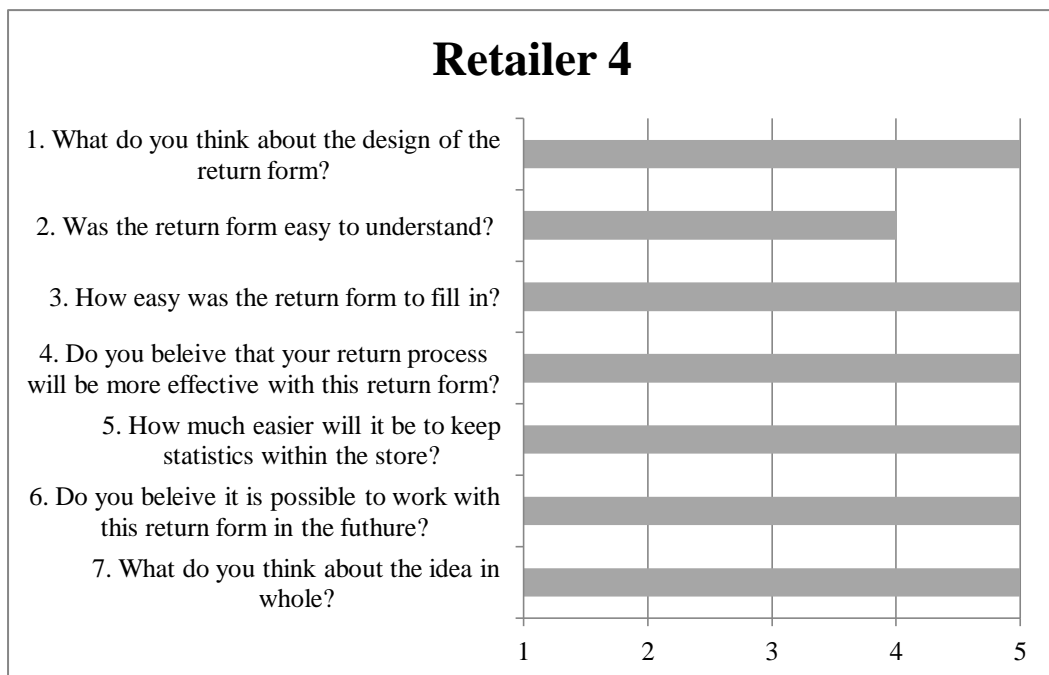


Fig. 15 Response from Retailer

6. Discussion

Returns Management is a topic that has not been given much attention during the last decades. Today, however, there is a growing focus on product returns as companies are beginning to take a strategic perspective of the process. Much has been published in terms of case studies and information regarding product returns. Nevertheless, few research studies have published specific empirical data concerning the reverse logistics practices of companies. Through the case study presented in Chapter 4.1, the lack of priority within the apparel company's product return process was confirmed. As the process perceived to be time consuming as well as inefficient, an idea emerged to employ an experiment to generate empirical data and to improve the return process.

As mentioned in the theoretical part of this study, return policies and standards can be used to enhance retailers' loyalty and improve profit. By having an efficient product return process, long-term relationships can develop as retailers are more likely to repurchase from companies who do well at managing returns. The case study at the retailers indicated that different guidelines from the apparel company were given. Through the idea of the web-based return form clear guidelines how to return products can be established. It would improve the interaction between the retailers and the focal company as well as facilitate the organization of the retailers' inventories.

James Stock points out that the most time consuming activities within the product return process is the last stages: processing, sort system and disposition. This is often a manual process, which was the case at the investigated apparel company, and should be finished as quickly as possible to improve cash flow. By implementing the web-based return form, these activities will be more efficient. The information regarding returned products is already inserted into the computer system before receiving the package. Furthermore, the employees handling the returns do not need to rewrite the information on an additional piece of paper if such a piece of paper is missing and input it into the computer system. This reduces duplication of work. With the new idea in place, they will only need to confirm the received information with the returned products and approve if it is correct. By having the information already input in the computer system, the refund process to the retailers will be made more quickly. The result from the interviews indicated that they are not satisfied with the repayment period as it is today.

Today, the apparel company cannot predict returns from the retailer until the packages physically exist at the return department. This results in difficulties in planning and organizing the employment as well as the products' future. At present, products' lifecycles tend to be shorter, and the longer the products stay in the return process, the more their value decreases and potential for damage rises.

Regarding seasonal products, the season may pass between the time a product is sold and the time it is returned. Through implementing the web-based return form, the mentioned scenarios could be prevented. By knowing incoming returns, the product disposition can be predetermined, which will speed up the return process. For instance, if the incoming products are seasonal, the possibility of selling the product at original price is higher. Also, the planning of employment could better be distributed if knowing the number of returns, as the quantity can differ from week to week.

It is complicated to coordinate the information flow, due to the multiple parties involved. To ensure maximum efficiency, the interaction between the retailers and the company is necessary. Through the web-based return form a better communication would occur and facilitate the daily work, as the information would be available and shared across the various parties. According to the interviewed retailers presented in Chapter 5.4, the web-based return form would not cause additional work for them as they already have input the information in their own computer system. It would facilitate their work and improve the communication with the apparel company, as the return process would be done more automatically. As the retailers believed that the return form was easy to understand and to implement, it would not be complicated to coordinate the information flow between the parties involved.

The opinions regarding the return number were similar for both the retailers and the apparel company. Today, the retailers have to contact headquarters, shown in Figure 8 in Chapter 5.1, to receive a return number before returning products. The response from the interviews indicted that this process is inconvenient and time consuming. The purpose of the new idea is that the retailers receive the return number automatically by opening the return form, which would exclude one activity within the current product return process.

Currently the web-based return form exists on an external domain; however, the intention is to integrate it into the apparel company's business system. This is to gather and connect all the data at one place. The reason why it was done by means of an external document was the absence of access to the apparel company's business system during this study.

The logistics manager believes that the idea in general is very good and that some more commands could be added. For instance, a possibility to approve or reject a submitted return form should be available. If the return form is approved, an email should be automatically sent to the retailer. Furthermore an email should be sent to a transport company with information regarding the package's weight, the quantity and the retailers address. If the return form is rejected, information concerning the reason is explained in an email. Through this possibility, several steps within the product return process would be eliminated and make the procedure more efficient.

Every retailer cannot be assumed to have an internet connection. Therefore the new return form should also exist in a paper form although the majority of the retailers have Internet today. When the return department receives such a return form, they could scan the document into the computer system.

The response from the retailers as well as the apparel company was in general positive, even if there were minor improvement areas. The retailers did not experience any disadvantages with the web-based return form and each one wanted to implement this system in the near future as illustrated in Figures 9-15 in Chapters 5.3 and 5.4.

Through having the opportunity to act as an external part during the case study, an objective view could be given to the apparel company. The key to the solution was to be the connection and interaction between the operational and strategic level. This enabled the authors of this thesis to combine the short-time planning with the long-term planning and translate it to a concrete solution that could be implemented easily.

This new system would be suited for apparel companies that still handle the product return process primarily manually and do not want to invest in advanced and expensive computer systems. It has been shown in various studies, presented in Chapter 3, that the return process is important and should be up-to-date. Companies can gain profit if handling returns more efficiently and also save time. The web-based return form is a simple way to create great opportunities and advantages for an apparel company's return process.

7. Conclusion

The product return process is a growing phenomenon and companies are beginning to focus more on this area as an effective product return process generates cash flow and saves valuable time.

The hypothesis of this study led to the creation of a web-based return form so that the information flow between retailers and an apparel company would be more efficient, which would result in a more effective and structured product return process.

Factors that strengthen the hypothesis are;

- The information flow becomes more effective when retailers have clear guidelines how to send back products and when inserting the information into the computer system before sending back products.
- As the apparel company knows what is coming back, the disposition of returned products can be predetermined which will speed up the return process.
- Activities that are existing today within the return process can be eliminated which result in more effective product return process.
- By having all the information gathered in the computer system, a better view is given and the information are structured and easier to find.
- Refund for retailers can be made quicker which result in more satisfied retailers and creates stronger relationships.
- Shared and available information across various parties facilitate the daily work with better communication.

8. Future Research

- This study is focused on making the product return process more efficient with the solution of a web-based return form. Further research could be to find other solutions regarding this area, as the main focus within logistics is the forward process. Companies can gain cash flow and competitive advantages if handling the product return process effectively.
- More empirical data is necessary within this area to improve and broaden the knowledge within the return process, as researchers claim that this is a relatively unexplored area.
- The experiment could be made at other companies within the apparel industry as this study only concerning one company. This in order to strengthen the hypothesis of this study.
- To make this study more reliable, more respondents would be necessary in order to receive a more general picture how well a web-base return form could function.

References

- Benjamin, T. H., Dianne, J. H. & Joe, B. H., 2012. Reverse Logistics Disposition Decision-making: Developing a Decision Framework via Content Analysis. *International Journal of Physical Distribution & Logistics Management*, 42(3), pp. 244-274.
- Bryman, A., 2012. *Social Research Methods*. New York: Oxford University Press Inc.
- Christiaan, E. & Kumar, K., 2000. ICT-Enabled Coordination of Dynamic Supply Webs. *International Journal of Physical Distribution & Logistics Management*, 30(3), pp. 268-285.
- Daugherty, P. J., Myers, M. B. & Richey, G. R., 2002. Information Support for Reverse Logistics: The Influence of Relationship Commitment. *Journal of Business Logistics*, 23(1), pp. 85-106.
- Duckett, J., 2008. *Web Programming with HTML, XHTML, and CCS 2nd Edition*. Indiana: Wiley Publishing.
- Dyckhoff, H., Lackes, R. & Reese, J., 2004. *Supply Chain Management and Reverse Logistics*. Heidelberg: Springer- Verlag Berlin.
- Ek, J. U. E. J. O., 2010. *PHP 5 Programmering*. Sundbyberg: Pagina Förlags AB.
- Mijatovic, D. & Tyrén, D., 2012. *BorasHK*. [Online]
Available at: <http://borashk.se/malin/view.php?id=2>
[Använd 25 April 2012].
- Minahan, T., 1998. Manufacturers Take Aim at End of the Supply Chain. *Purchasing*, 124(6), pp. 111-112.
- Mossinkoff, M. R. & Stockert, A. M., 2008. Electronic Integration in the apparel industry: the Charles Vögele Case. *Journal of Fashion Marketing and Management*, 12(1), pp. 90-104.
- Mossinkoff, M. R. & Stockert, A. M., 2008. Electronic Integration in the Apparel Industry: The Charles Vögele Case. *Journal of Fashion Marketing and Management*, 12(1), pp. 90-104.
- Nationalencyklopedin, 2012. *Nationalencyklopedin*. [Online]
Available at:
http://www.ne.se/dom%C3%A4n/494776?i_h_word=internet+dom%C3%A4n
[Använd 11 May 2012].

- Richey, G. R., Chen, H., Genchev, S. E. & Daugherty, P. J., 2005. Developing Effective Reverse Logistics Programs. *Industrial Marketing Management*, 2 March, Issue 34, pp. 830-840.
- Rogers, D. S., Lambert, D. M., Croxton, K. L. & García-Dastugue, S. J., 2002. The Returns Management Process. *The International Journal of Logistics Management*, 13(2), pp. 1-18.
- Stock, J. R., 1998. *Development and Implementation of Reverse Logistics Programs*. Oak Brook: Council of Logistics Management.
- Stock, R. J. & Mulki, P. J., 2009. Produkt Returns Processing: an examination of practices of manufacturers, Wholesalers/distributors, and retailers. *Journal of Business Logistics*, 30(1), pp. 33-54.
- Tibben-Lembke, R. S. & Rogers, D. S., 2002. Differences between forward and reverse logistics in a retail environment. *Supply Chain Management: An International Journal*, 7(5), pp. 271-282.
- Trebilcock, B., 2001. Why are Returns so Tough. *Modern Materials Handling*, 56(11), pp. 45-51.
- Yin, R. K., 2009. *Case Study Research Design and Methods*. Los Angeles: SAGE Publications Inc.
- Zhou, Y. & Wang, S., 2008. Generic Model of Reverse Logistics Network Design. *Journal of Transportation Systems Engineering and Information Technology*, 8(3), pp. 71-78.

Appendix 1

Interview Questions Apparel Company Case Study

1. How does the return process work today?
2. Which are the different steps in your return process?
3. Who is doing what?
4. Is every return product shipped to the headquarter?
5. What are the reasons of returning products?
6. How do you handle the returned products in the computer system?
7. What do you type in into the computer system?
8. What do you do with received returns?
9. What happens with the returns after credit/inventorial movement?
10. How fast do the products get back to the retailers again?
11. Do you see any problem with the return process?
12. How do retailers return products?
13. Have you stated guidelines for the retailers how to return products?
14. Have the retailers received a return note?
15. Is anything already inserted into the computer system before receiving products?
16. Do you handle returned products different depending on retailers?
17. Do the retailers gather the products before returning to the headquarter?

Interview Questions Retailer Case Study

1. How do you return products to the apparel company today?
2. Have you received guidelines from the apparel company regarding how to return products?
3. Have you received a return note from the apparel company?
4. Do you need to fill in something today before returning products?
5. How often do you return products to the apparel company?
6. Do you gather your products before returning them to the apparel company?
7. Do you think your return process is time consuming today?
8. Do you write down information about products that will be returned for your own inventories to the apparel company?
9. Do you prefer a return form as a paper?

Appendix 2

Data codes used when creating the web-based return form

HTML

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8"
/>
<title>Return Form</title>
<link rel="stylesheet" type="text/css"
href="./data/form_2/css/view.css" media="all" />
<link rel="stylesheet" type="text/css"
href="./data/themes/theme_27.css" media="all" />
<link
href='http://fonts.googleapis.com/css?family=Arvo:regular,italic,b
old,bolditalic' rel='stylesheet' type='text/css'>

<script type="text/javascript"
src="http://ajax.googleapis.com/ajax/libs/jquery/1.6.1/jquery.min.
js"></script>
<script type="text/javascript" src="js/jquery-
ui/ui/jquery.effects.core.js"></script>
<script type="text/javascript" src="view.js"></script>

<script type="text/javascript"
src="js/datepicker/jquery.datepick.js"></script>
<script type="text/javascript"
src="js/datepicker/jquery.datepick.ext.js"></script>
<link type="text/css" href="js/datepicker/smoothness.datepick.css"
rel="stylesheet" />

</head>
<body id="main_body" class=" no_guidelines">

<div id="form_container" class="WarpShadow WLarge WNormal">

<h1><a>Return Form</a></h1>
<form id="form_2" class="appnitro top_label" method="post" data-
highlightcolor="#ece5ce" action="#main_body">
<div class="form_description">
<h2>Return Form</h2>
<p></p>
</div>
<ul >

<li id="li_5" class="datum">
<label class="description">Date: </label>
<span>
<input id="element_5_1" name="element_5_1" class="element
text" size="2" maxlength="2" value="" type="text" /> /
<label for="element_5_1">DD</label>
</span>
<span>
```

```

        <input id="element_5_2" name="element_5_2" class="element
text" size="2" maxlength="2" value="" type="text" /> /
        <label for="element_5_2">MM</label>
    </span>
    <span>
        <input id="element_5_3" name="element_5_3"
class="element text" size="4" maxlength="4" value="" type="text"
/>
        <label for="element_5_3">YYYY</label>
    </span>

    <span id="calendar_5">
        <input type="hidden" value="" name="element_5_datepick"
id="element_5_datepick">
        <div style="display: none"></div>
    </span>
    <script type="text/javascript">

        $('#element_5_datepick').datepicker({
            onSelect: select_europe_date,
            showTrigger: '#cal_img_5'

        });

    </script>

    </li>
    <li id="li_1" >
    <label class="description" for="element_1">Return number:
    </label>
    <div>
        <input id="element_1" name="element_1" class="element
text small" type="text" value="" />

    </div>
    </li>
    <li id="li_2" >
    <label class="description" for="element_2">Customer: </label>
    <div>
        <input id="element_2" name="element_2" class="element
text medium" type="text" value="" />

    </div>
    </li>
    <li id="li_3" >
    <label class="description" for="element_3">Customer number:
    </label>
    <div>
        <input id="element_3" name="element_3" class="element
text small" type="text" value="" />

    </div>
    </li>
    <li id="li_86" >
    <label class="description">Phone number: </label>
    <div>
        <input id="element_86" name="element_86" class="element
text medium" type="text" maxlength="255" value="" />
    </div>
    </li>
    <li id="li_4" class="Orsak">

```

```

<label class="description" for="element_4">Reason: </label>
<div>
    <input id="element_4" name="element_4" class="element
text large" type="text" value="" />

</div>
</li>
    <li id="li_116" >
<label class="description" for="element_116">Article number
(quality/collar/ front/color): </label>
<div>
    <input id="element_116" name="element_116"
class="element text large" type="text" value="" />

</div>
</li>
    <li id="li_87" class="column_6 class">
<label class="description" for="element_87">37 / 14½ </label>
<div>
    <input id="element_87" name="element_87" class="element
text small" type="text" value="" />

</div>
</li>
    <li id="li_104" class="column_6 class">
<label class="description" for="element_104">38 / 15<br />
</label>
<div>
    <input id="element_104" name="element_104"
class="element text small" type="text" value="" />

</div>
</li>
    <li id="li_89" class="column_6 class">
<label class="description" for="element_89">39 / 15½ </label>
<div>
    <input id="element_89" name="element_89" class="element
text small" type="text" value="" />

</div>
</li>
    <li id="li_106" class="column_6 class">
<label class="description" for="element_106">40 / 15¾<br />
</label>
<div>
    <input id="element_106" name="element_106"
class="element text small" type="text" value="" />

</div>
</li>
    <li id="li_107" class="column_6 class">
<label class="description" for="element_107">41 / 16 </label>
<div>
    <input id="element_107" name="element_107"
class="element text small" type="text" value="" />

</div>
</li>
    <li id="li_108" class="column_6 class">
<label class="description" for="element_108">42 / 16½ </label>
<div>
    <input id="element_108" name="element_108"
class="element text small" type="text" value="" />

</div>
</li>
    <li id="li_109" class="column_6 class">
<label class="description" for="element_109">43 / 17 </label>
<div>

```

```



```

```

        <input id="element_103" name="element_103"
class="element text small" type="text" value="" />

</div>
</li>
        <li id="li_88" class="column_6 class">
<label class="description" for="element_88">38 / 15<br />
</label>
<div>
        <input id="element_88" name="element_88" class="element
text small" type="text" value="" />

</div>
</li>
        <li id="li_105" class="column_6 class">
<label class="description" for="element_105">39 / 15½ </label>
<div>
        <input id="element_105" name="element_105"
class="element text small" type="text" value="" />

</div>
</li>
        <li id="li_90" class="column_6 class">
<label class="description" for="element_90">40 / 15¾<br />
</label>
<div>
        <input id="element_90" name="element_90" class="element
text small" type="text" value="" />

</div>
</li>
        <li id="li_91" class="column_6 class">
<label class="description" for="element_91">41 / 16 </label>
<div>
        <input id="element_91" name="element_91" class="element
text small" type="text" value="" />

</div>
</li>
        <li id="li_92" class="column_6 class">
<label class="description" for="element_92">42 / 16½ </label>
<div>
        <input id="element_92" name="element_92" class="element
text small" type="text" value="" />

</div>
</li>
        <li id="li_93" class="column_6 class">
<label class="description" for="element_93">43 / 17 </label>
<div>
        <input id="element_93" name="element_93" class="element
text small" type="text" value="" />

</div>
</li>
        <li id="li_94" class="column_6 class">
<label class="description" for="element_94">44 / 17½<br />
</label>
<div>
        <input id="element_94" name="element_94" class="element
text small" type="text" value="" />

</div>
</li>
        <li id="li_95" class="column_6 class">
<label class="description" for="element_95">45 / 17¾ </label>
<div>
        <input id="element_95" name="element_95" class="element
text small" type="text" value="" />

```

```

</div>
</li>
<li id="li_112" class="column_6 class">
<label class="description" for="element_112">46 / 18 </label>
<div>
<input id="element_112" name="element_112"
class="element text small" type="text" value="" />
</div>
</li>
<li id="li_98" class="column_6 class">
<label class="description" for="element_98">47 / 18½ </label>
<div>
<input id="element_98" name="element_98" class="element
text small" type="text" value="" />
</div>
</li>
<li id="li_99" class="column_6 class">
<label class="description" for="element_99">48 / 19 </label>
<div>
<input id="element_99" name="element_99" class="element
text small" type="text" value="" />
</div>
</li>
<li id="li_100" class="column_6 class">
<label class="description" for="element_100">49 / 19½ </label>
<div>
<input id="element_100" name="element_100"
class="element text small" type="text" value="" />
</div>
</li>
<li id="li_56" >
<label class="description">Arrangement between apparel company
and retailer: </label>
<div>
<span><input id="element_56_1" name="element_56_1"
class="element checkbox" type="checkbox" value="1" />
<label class="choice" for="element_56_1">Exchange of
product</label>
</span>
<span><input id="element_56_2" name="element_56_2" class="element
checkbox" type="checkbox" value="1" />
<label class="choice" for="element_56_2">Credit</label>
</span>
<span><input id="element_56_3" name="element_56_3" class="element
checkbox" type="checkbox" value="1" />
<label class="choice" for="element_56_3">Other arrangement</label>
</span>
</div>
</li>
<li id="li_42" >
<label class="description" for="element_42">Other arrangement
</label>
<div>
<input id="element_42" name="element_42" class="element
text large" type="text" value="" />
</div>
</li>

```

```

        <li id="li_buttons" class="buttons">
        <input type="hidden" name="form_id" value="2" />

        <input type="hidden" name="submit_form" value="1" />
        <input type="hidden" name="page_number" value="1" />
        <input id="submit_form" class="button_text"
type="submit" name="submit_form" value="Submit" />
    </li>
</ul>
</form>
<div id="footer">
    Powered by <a href="http://www.appnitro.com"
target="_blank">MachForm</a>
</div>
</div>

</body>
</html>

```

CSS codes

The CCS codes are imbedded in the HTML document. There are four different CCS elements. To be able to see them you must enter the address: <http://borashk.se/malin/view.php?id=2>, and after that, click right and then “view sources”. Here you can see the CSS elements imbedded in the HTML document, click on the CSS elements and you will see the codes in a new pop-up window.

Appendix 3

Experiment Questions

Apparel Company

1. Do you believe that your return process will be more effective with this return form?
2. What do you think about the design of the return form?
3. Do you prefer to receive the return note as a paper?
4. Is something missing in the web-based return form?
5. Do you think that something should be added or erased in the return form?
6. How much easier will it be to plan, if you know exactly what is going to be returned?
7. Do you believe it is possible to work with this return form in the future?
8. Do you think there are any disadvantages with the return form?
9. What do you think about the idea as whole?

Retailers

1. Is something missing in the web-based return form?
2. Is it too much to fill in on the return form?
3. Do you think there are any disadvantages with the return form?
4. Do you think that something should be added or erased in the return form?
5. What do you think about the idea as whole?



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