On Aligning Returns Management with the E-commerce Strategy to Increase Effectiveness

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Abstract

The returns management (RM) process has traditionally been seen as a value recovery process, which has resulted in an efficiency focus in the returns flow. This thesis present, the effects on a fashion e-commerce organisation, which is underprioritising or neglecting RM in general and consumer returns specifically. In the reported and described single-case study and through a real-life experiment, performed with the case organisation nelly.com, it is shown that the consumer returns rates are not only influenced by the product itself. They represent a complex problem that has its reasons and causes, whereby the product (size, fit, quality, et cetera) together with consumer buying and returning behaviour ultimately have a combined effect on the organisation. The results from the thesis are based on previous research and rest heavily on the research performed since the start of the research journey. Consumer returns form part of the value creation in e-commerce and therefore returns management is a strategic part of the business as such.

Handling consumer returns in a traditional or efficient returns system without knowing the reason for return and the state of the returned item is nothing other than gambling with resources. The proposed returns information system (RIS) framework in the thesis addresses this issue and facilitates the downstream application of the gatekeeping activity, near or at the end-user location; managerial attention is required at the strategic process level to build a proper returns system that is partly, and quite likely, decentralised.

Products, suppliers, customers and internal processes cause consumer returns and therefore a returns manager needs to address these with other functions and SC partners. This result is partly new and the proposed alignment of RM as a strategic process is new in the sense that RM is part of value creation. This thesis empirically supports the conclusion that “one size fits all” is outdated and does not fit with e-commerce business. The results imply that managers need to gain a profound understanding of consumers’ buying behaviour and also to create differentiated delivery and returns processes to be able to grow within the existing customer segments and possibly to attract new or non-customers who are out of reach at present. Seeing the RM process as strategic in e-commerce, as proposed in the thesis, facilitates the development of the process to become both effective and efficient. Returns management has the potential for revenue creation and cost reduction.

Keywords: Returns management, supply chain management, alignment, case study, experimental research, gatekeeping, avoidance, reverse logistics, strategy, e-commerce
The supply chain is perfectly designed to execute its current output – so do not complain about its current output – if you want another output you need another supply chain design.

Lee Hochberg¹
Singapore 2012 Supply Chain
“Thought Leadership”

¹ Director, GM, Global Integrated Planning & Optimisation Systems
Preface

The results presented in this thesis would not have been achieved without the support of the case organisation nelly.com, assisting the applied research performed with important empirical data and professional knowledge. I would like to take this opportunity to thank you all, especially the former operations manager Peter Eriksson, for your support!

The financial support of this thesis, apart from the University of Borås, comes from Sweden Logistics and Västra Götalandsregionen.

Further, it would not have been possible for me to complete the thesis without the support of my fellow colleagues at the University of Borås, especially my colleagues at the Swedish School of Textiles and the School of Engineering. I would like to thank you all for all the discussions we have had throughout my research and the writing of this thesis. Thank you Björn, Daniel, David, Göran, Jonas Larsson and Jonas Stray.

My supervisors have all assisted me greatly in different ways. Professor Håkan Torstensson, you employed me and started my research journey. Even though I left my initial path within the field of reverse logistics, you have supported me for a long time and have helped me significantly. Professor Dag Ericsson, you have been an inspiration from day one, and you made me rethink what my research was about when you explained your views on how to look upon logistics or, better, material administration, and demand chain management. Finally, I wish to thank Professor Kent Lumsden at Chalmers. You, together with your colleagues, inspired me and my fellow students throughout the first courses on logistics, and you supervised me in my thesis work for my masters’ degree. You were my examiner for the licentiate degree, and now you are there for my doctoral degree as well. Lastly I would like to thank Professor Fredrik Nilsson at Lund University for your help with my thesis during my final seminar.

Before I become more personal, I would like to thank those I have forgotten to mention who have helped me in different ways!

Last but not least, I will thank you, Malin, my wife: thank you for all the support you have given me throughout our years together, and for listening to my unnatural interest in returns. Malin, Karl and Hedda I love you with all my heart!

I thank you all for your support!

Skanör, February 2013

Klas Hjort
List of appended papers

This thesis rests on the five appended papers that are listed below and referred to in the thesis with capital letters A to E. Paper A is self-authored and the other four were written together with colleagues. Paper B was written jointly with two consultants from the information systems community, and three of the papers (C–E) were written collectively with research colleagues at the University of Borås. A description of each author’s contribution is presented in section 0 on page 61.

Paper A:

Paper B:

Paper C:

Paper D:

Paper E:
Hjort, K., Lantz, B. & Ericsson, D. (2012), “Customer segmentation based on buying and returning behaviour: Supporting differentiated service delivery in fashion e-commerce”, Proceedings of the 17th International Symposium on Logistics, 8–11 July 2012, Cape Town, South Africa. The paper was pre-selected by the Organising Committee of the International Symposium on Logistics (ISL) as one of the top three papers on strategy, and sent to IJPDL for consideration as the best SC strategy paper and possibly publication. The editors of the International Journal of Physical Distribution and Logistics Management chose the paper as the best of the three pre-selected supply chain strategy papers from ISL 2012. Submitted to IJPDL for the review process on 13 August.
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1 Introduction

This chapter presents a theoretical and practical background to the research field that demarcates the research area and justifies the purpose and the research questions addressed. After the background follows a detailed presentation of the purpose and research questions and this first section ends with a short outline of the thesis.

1.1 Background

Sustainability and sustainable development are closely linked to the reverse flow of goods as well as the forward flow of goods. Traditionally, the reverse flow aims to reduce the environmental impact or the effects from the forward flow through recycling activities and value recovery has historically been the focus in the research area of the returns flow. However, there is possibly an interaction effect between the two oppositely directed goods flows and therefore organisations need to analyse whether, how and why there is and what this effect is. That is, the two flows should, depending on the problem, be researched simultaneously. Here, the author does not refer to the interaction effect following the statistical meaning, merely that one flow is related to the other. The forward flow of products is part of the overall value creation process and the reverse flow aims to recapture or recover value from returns (Rogers and Tibben-Lembke, 1999). In industries such as e-commerce, especially apparel and fashion, the returns flow is normally not included in the value creation per se, only in the recovery, i.e. the two goods flow are not connected and the possible interactions are not yet known (author’s note).

The development of the research field of returns management (RM) can be traced back in time to its beginnings in the field of reverse logistics (RL). Since the oil crises at the beginning of the 1970s, and subsequently the relationship established between economic development and environmental degradation, first placed on the international agenda at the United Nations (UN) Conference on the Human Environment held in Stockholm in 1972, the awareness of global environmental issues has risen (UN, 1992). After the conference, governments set up the United Nations Environment Programme (UNEP), which today continues to act as a global catalyst for action to protect the environment. Producing companies became increasingly involved in new regulations regarding what they produce and the waste they generate, both from the production and from the products. By 1983, when the UN set up the World Commission on Environment and Development, environmental degradation, which had been seen as a side effect of industrial wealth with only a limited impact, was understood to be a matter of survival for developing nations (UN, 1992). The Commission put forward the concept of sustainable development as an alternative approach to one simply based on economic growth:

One which meets the needs of the present without compromising the ability of future generations to meet their own needs.

New regulations, such as extended producer responsibility (EPR) or “polluter pays”, together with tougher rules for the disposal of waste and regulations for landfills, have influenced both producers and consumers to separate recyclable resources from waste in Sweden, the EU and other developed and now underdeveloped countries. In Sweden, most (perhaps all) EPR programmes operate in separate systems, i.e. the
producer or initial source does not operate the returns system itself. The organisations that are obliged to conform to the regulations normally pay a “producer’s fee”, i.e. packaging material, tyres and automobiles, et cetera, instead of operating the returns flow themselves. This, of course, is in line with the general trend towards focusing on the core business and outsourcing.

Research in the field of reverse flows started in the 1960s (Pokharel and Mutha, 2009) and there is a growing interest in the reverse logistics area due to the value recovery of used products (Pokharel and Mutha, 2009). The research on the returns flow has evolved over time (Rubio et al., 2008) from reverse logistics to returns management (see Rogers and Tibben-Lembke, 1999; Rogers et al., 2002). Historically, research has focused on reverse logistics, with the emphasis on cost-efficient (Guide Jr et al., 2006) collection, redistribution and recovery of end-of-life (EOL) or end-of-use (EOU) products. Further, the recovery of EOL and EOU products also considers the interaction with traditional production planning, as material, components and product are recovered and inserted into the forward flow. Thus, the focus has been on resource reduction, reuse and recycling. Reverse logistics has several definitions and one often-cited definition is the following by Rogers and Tibben-Lembke (1999):

The process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal.

Later in time, the research focus on the returns flow opened up to cover areas such as returns management, in which an extended approach involving returns avoidance and gatekeeping lets one work proactively to avoid returns and to gatekeep the returns system from “unwanted” returns (Rogers et al., 2002). Avoiding (preventing) returns is the most cost-efficient way of reducing returns (author’s note); previous research has focused on ease of use and improved quality issues. Stock et al. (2006) categorise returns into two groups: controllable and uncontrollable. In essence, the controllable can be eliminated before they occur and the cause or causes can be minimised or avoided through actions taken in the supply chain (Stock et al., 2006). Conversely, the uncontrollable returns are unavoidable in the short term according to Stock et al. (2006). Returns management as a business process was introduced in 2001 (Croxton et al.) and is defined by Rogers et al. (2002) as follows:

Returns management is that part of supply chain management that includes returns, reverse logistics, gatekeeping and avoidance.

There are different reasons why producers, distributors and customers, or end-users, send or transport materials in reverse, or upstream (a better description). However, the returns flow can be divided into two separate flows, namely packaging and products (Rogers and Tibben-Lembke, 1999, p. 6.). According to Rogers et al. (2002, p. 3.), returns are grouped into five categories: asset returns, consumer returns, environmental returns, marketing returns and product recalls. For products, consumer returns account for a large share of the returns flow and are an increasing problem, due to the growing interest in e-commerce. The returns percentages vary by industry (Rogers and Tibben-Lembke, 1999) (see Table 1) and product category (Guide Jr et al., 2006). Research reports returns levels reaching 50% of the total shipments (Norek,
and returns levels are typically higher in catalogue sales and e-commerce (Guide Jr et al., 2006) and the average returns rate for online apparel sales is as high as 35% to 40% (Norek, 2002).

Table 1 Returns rates for different industries in the US (Rogers and Tibben-Lembke, 1999)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Return level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magazine Publishers</td>
<td>50%</td>
</tr>
<tr>
<td>Book Publishers</td>
<td>20-30%</td>
</tr>
<tr>
<td>Book Distributors</td>
<td>10-20%</td>
</tr>
<tr>
<td>Greetings Cards</td>
<td>20-30%</td>
</tr>
<tr>
<td>Catalogue Retailers</td>
<td>18-35%</td>
</tr>
<tr>
<td>Electronic Distributors</td>
<td>10-12%</td>
</tr>
<tr>
<td>Computer Manufacturers</td>
<td>10-20%</td>
</tr>
<tr>
<td>CD-ROMs</td>
<td>18-25%</td>
</tr>
<tr>
<td>Printers</td>
<td>4-8%</td>
</tr>
<tr>
<td>Mail Order Computer Manufacturers</td>
<td>2-5%</td>
</tr>
<tr>
<td>Mass Merchandisers</td>
<td>4-15%</td>
</tr>
<tr>
<td>Auto Industry (Parts)</td>
<td>4-6%</td>
</tr>
<tr>
<td>Consumer Electronics</td>
<td>4-5%</td>
</tr>
<tr>
<td>Household Chemicals</td>
<td>2-3%</td>
</tr>
</tbody>
</table>

Rogers and Tibben-Lembke (2001) summarise the most common reasons why products or packaging are sent backwards (see Table 2). Among end-users, defective, warranty and recalls are characteristics that might fit into Stock et al.’s (2006) controllable group, thus they are avoidable; however, the unwanted product returns from end-users would fit into the group of unavoidable returns. There is likely to be an increase in the returns rates from end-users towards retailers (Guide Jr and Van Wassenhove, 2006). Cost-efficient processes might be desirable; however, they are an approach that can limit a firm’s profitability in today’s business environment (Guide Jr and Van Wassenhove, 2006), which Autry (2005) describes as hypercompetitive, with firms competing vigorously on the basis of customer service. In e-commerce in the EU, especially in fashion and apparel, product returns are often non-defective albeit unwanted (the last line in the upper-right box in Table 2) in relation to size and fit issues and could be sold again.
Table 2 Characterisation of items in the returns flow by type and origin (adapted from Rogers and Tibben-Lembke, 2001)

<table>
<thead>
<tr>
<th>Supply Chain Partners</th>
<th>End-Users</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products</strong></td>
<td></td>
</tr>
<tr>
<td>Stock balancing returns</td>
<td>Defective/unwanted products</td>
</tr>
<tr>
<td>Marketing returns</td>
<td>Warranty returns</td>
</tr>
<tr>
<td>End of life/season</td>
<td>Recalls</td>
</tr>
<tr>
<td></td>
<td>Environmental disposal issues</td>
</tr>
<tr>
<td></td>
<td>Consumer returns (non-defective/unwanted)</td>
</tr>
<tr>
<td><strong>Packaging</strong></td>
<td></td>
</tr>
<tr>
<td>Reusable totes</td>
<td>Reuse</td>
</tr>
<tr>
<td>Multi-trip packaging</td>
<td>Recycling</td>
</tr>
<tr>
<td>Disposal requirements</td>
<td>Disposal restrictions</td>
</tr>
</tbody>
</table>

Commercial product returns have often been viewed by companies as a nuisance (Blackburn et al., 2004; Guide and Van Wassenhove, 2006) and as a necessary evil, a painful process, a cost centre and an area of potential customer dissatisfaction (Stock et al., 2006), therefore focusing on an efficient returns system. However, organisations have realised that effective returns management can provide a number of benefits (Norek, 2002; Rogers et al., 2002; Stock et al., 2006; Mollenkopf et al., 2007a; Mollenkopf et al., 2007b; Frankel et al., 2010; Mollenkopf, 2010), such as improved customer service, effective inventory management and product dispositioning.

Thierry et al. (1995) introduced product recovery management (PRM) and different product recovery options, such as repair, refurbishment and remanufacture cannibalisation and recycling. PRM is company-orientated, dealing with responsibilities for manufacturers and aiming to recover as much of the economic and ecological value as is reasonably possible. Thierry et al. mention the importance for companies to become more adaptable to rapid changes in both regulations and customer demand for “green products”, i.e. products that can be resold, recovered or recycled. Stock and Mulki (2009) report that firms utilise a fairly consistent returns handling process and the three most frequent disposal methods are return directly to stock, sell the returned items as scrap and finally return to stock after repackaging. Research into the reverse flow conducted at earlier times focused merely on planning and controlling the vertically integrated chain of events, with the main focus on efficiency. The focus shift from logistics to supply chain management (SCM) is central to this thesis, as Stock’s prior research regarding the returns flow focused on reverse logistics as opposed to forward logistics.

Certain industries, such as the e-commerce business, have boomed along with the development of the Internet; e-commerce is one example that would not exist without it. Besides the upsides of online sales, such as availability 24/7, an increased product range, lower price and convenience, there are some downsides to online shopping as well. The Internet as an intermediary in itself creates a distance between the buyer (in this case the consumer) and the seller’s (in this case the e-tailer’s) products. This physical distance is evident in certain businesses in which consumers struggle to evaluate products and services before ordering, thus certain consumers might hesitate to use the e-commerce distribution channel. In a recent study, 68% of Swedish
consumers who do not purchase clothes online report that they always want to see/try clothes on first before they shop online. Another 33% express that it is complicated to return clothes if they do not fit (e-barometern, 2012). However, around half of the online consumers report having used the returns opportunity and 77% of them are quite pleased with the returns process (e-barometern, 2012). Returns management gives organisations an opportunity both to differentiate themselves from competitors and to attract hesitant non-adopters. Liberal returns policies are often used for this purpose and have become a marketing practice in both business-to-business (B2B) and business-to-consumer (B2C) markets (Autry, 2005). Wood (2001) performed an experiment and found that lenient policies in catalogue retailing increased product returns and sales, with a positive net sales effect. Researchers from different disciplines, including marketing (Kang and Johnson, 2009; Harris, 2010; Rosenbaum et al., 2011) and management (Piron and Young, 2000; King and Dennis, 2003), have found that nearly 20% of consumers engage in some sort of “illegitimate product returns”. This shows that returns are interrelated with consumer behaviour and as such organisations’ strategies affect the returns levels.

A number of EU directives are linked to different areas of e-commerce in the internal market (Mattsson, 2012). Therefore, the returns policies in e-commerce in Europe are affected by different legislation, such as the directive on electronic commerce (EUR-lex, 2000) and the directive on consumer rights (EUR-lex, 2011). In the EU, these directives are transposed into national law to protect consumers buying from a distance, i.e. by phone, mail order, e-commerce, et cetera. Therefore, consumers are entitled by law to return what they have purchased within a certain time frame and under certain conditions.

Distance sales are increasing in both Sweden and Europe and the online sales in Europe have doubled since 2005 (EMOTA, 2011). In 2008, the total European distances sales amounted to €123.8 billion, an increase of 13.1%. In 2011, the growth rate exceeded 20% in most European e-retail markets (EMOTA, 2011). Nearly 40% of all Internet users in the EU (27 countries) have bought or ordered goods or services for private use over the Internet (eurostat, 2009). In 2010, the percentage rose to nearly 60%, with users from the UK leading with 79% (eurostat, 2010). One in four consumers who did not order over the Internet in 2009 raised trust concerns about receiving and returning goods, complaint or redress concerns (eurostat, 2009). The harmonisation of consumer rights and the creation of an online single market will probably affect e-commerce and the possibility for cross-border trade with greater transportation distances, et cetera. In the EU and other neighbouring countries, the sales per capita vary; in Russia and Spain, the sales are rather modest in comparison with those in Germany and the UK (Table 3).
### Table 3 Statistics for distance sales 2006 (EMOTA, 2006)

<table>
<thead>
<tr>
<th>Country</th>
<th>Population in millions</th>
<th>Total distance sales in million EUR</th>
<th>Distance sales per capita EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>5.4</td>
<td>1,180</td>
<td>218.5</td>
</tr>
<tr>
<td>Finland</td>
<td>5.2</td>
<td>620</td>
<td>119.3</td>
</tr>
<tr>
<td>France</td>
<td>63.0</td>
<td>18,000</td>
<td>285.7</td>
</tr>
<tr>
<td>Germany</td>
<td>82.4</td>
<td>26,296</td>
<td>318.0</td>
</tr>
<tr>
<td>Netherlands</td>
<td>16.3</td>
<td>3,690</td>
<td>226.4</td>
</tr>
<tr>
<td>Norway</td>
<td>4.6</td>
<td>1,032</td>
<td>224.3</td>
</tr>
<tr>
<td>Russia</td>
<td>142</td>
<td>1,297</td>
<td>9.1</td>
</tr>
<tr>
<td>Spain</td>
<td>43.8</td>
<td>1,094</td>
<td>25.0</td>
</tr>
<tr>
<td>Sweden</td>
<td>9.0</td>
<td>1,804</td>
<td>200.4</td>
</tr>
<tr>
<td>Switzerland</td>
<td>7.5</td>
<td>1,644</td>
<td>219.2</td>
</tr>
<tr>
<td>UK</td>
<td>60.4</td>
<td>26,843</td>
<td>444.4</td>
</tr>
</tbody>
</table>

However, both markets, underdeveloped and developed, are interesting for distance sales organisations, and therefore act as driving forces for cross-border distance sales. The European Commission’s Digital Agenda lists 16 legislative actions that aim to prevent consumers from enjoying a digital single market; their targets are ambitious and include among others (EMOTA, 2010):

- 50% of the population should be buying online by 2015.
- 20% of the population should be buying cross-border online by 2015.

Distance sales, i.e. Internet, mail or phone order trade, represent an increasing share of the retail trade in Sweden. In 2005, the turnover amounted to SEK 13.4 billion, and in 2009, it doubled, reaching SEK 28.1 billion. Its share of the retail trade increased by over 50% over the same time period, and represented 4.6%.

The trend is quite clear – distance selling is increasing, and the e-commerce side represents the greatest area. In Sweden alone, the e-commerce turnover reached SEK 27.7 billion in 2011, with a 10.6% increase since 2010, and currently it represents 5% of the total retail trade (e-barometern, 2011). The prognosis for 2012 (see * in Figure 1) is SEK 31.3 billion based on a 13% increase from the first quarter of 2012 (e-barometern, 2012). The increase in turnover in the Swedish retail sector as a whole was 4.5% in the first quarter of 2012 (e-barometern, 2012). E-barometern is a quarterly report that covers the Swedish retail development within e-commerce and it is produced in cooperation between Posten, Svensk Distanshandel and Handelsn utvecklingsinstitut (HUI).
Logistics and specifically distribution are critical success factors in e-commerce, and e-commerce organisations in Sweden also foresee these factors as major future challenges. Increased competition, both domestic and from abroad, is present and constitutes another foreseen future challenge. Regarding the domestic competition, the number of Swedish organisations that are involved in distance sales has increased by approximately 5 times in 10 years; at the same time, the turnover has only doubled and that might be an explanation for the perceived increased domestic competition. So, in a sense, the competition seems to increase over time (see Figure 2).

Figure 1 The turnover trend in distance selling in Sweden²

![Distance selling in Sweden 2004-2012](image)

Figure 2 The development of distance selling in Sweden between 2001 and 2010 (SCB, 2010)

![Mail order and e-commerce development in Sweden](image)

² Source: quarterly reports from e-barometern.
The data presented in Figure 2 cover a certain (selected) area of the Swedish distance sales and therefore the sales figures do not match the overall sales figures presented in Figure 1. Further, approximately one-third of the organisations have experienced increased competition from abroad, with 12% reporting drastically increased competition; however, one-third have not noticed any change in the competition from abroad (e-barometern, 2011). Two out of three Swedish organisations report selling abroad, with Norway as their major export market followed by Finland and Denmark. Six out of ten organisations foresee an increase in the exports, and 15% believe there will be a drastic increase.

1.2 Problem area

Supply chains (SC) are omnipresent (Gattorna, 2010); therefore, the same applies to returns management (the supply chain process). The reader might not think of it or know it, but the author is convinced that every reader of this thesis has entered something into a returns system. This thesis itself will probably enter a recycling returns flow sooner or later the author hopes the latter. It is quite clear that we would like to increase certain returns rates and decrease others or even avoid them. It is beyond the scope of this thesis to try to reduce consumption as such, but any returns flow that could reduce the amount of virgin raw material we consume represents returns that are wanted. However, we need to balance and control the resources consumed when we operate the returns system, thus creating an effective and efficient returns system or rather supply chain. Previously, reverse logistics was considered, as mentioned earlier, as a necessarily evil and a cost centre. However, it has started to acquire a strategic role in organisations (see Table 4). It is time to position returns management in its proper place in the supply chain strategy. Mollenkopf et al. (2007a) investigated the marketing/logistics relationship relative to returns management. They found that the effectiveness of returns management was enhanced when firms coordinated their strategic and operational activities. Clearly, returns management needs to be efficient; in some cases, however, it seems that it is also part of the value creation and not only the value recovery. Therefore, there is possibly a need to align the returns management with the overall supply chain strategy.

Stock and Mulki (2009) emphasise that product returns will continue to be part of business operations and the literature indicates that competition is increasing and consumer demands are surely following that development. Rogers and Tibben-Lembke (1999), see Table 4, present the strategic role of reverse logistics in different business areas. All the different reasons or roles indicate the essence of returns management and its cross-functional nature. Clearly, returns relate to other functional areas, such as marketing, sourcing, manufacturing, et cetera, as returns policies are part of marketing practice (Autry, 2005) and a lenient returns policy increases returns (Wood, 2001); therefore, returns management is surely part of the value creation process. The increasing e-commerce in Sweden, Europe, the European Union (EU) and globally will increase the flow of consumer returns and therefore returns management and particularly avoidance and gatekeeping need to be examined in a supply chain context, cross-functionally and interdisciplinarily.
Increased competition has forced organisations to initiate reverse logistics as a strategic variable with which retailers and manufacturers have liberalised their returns policies (Rogers and Tibben-Lembke, 1999). Part of the customer satisfaction involves the company accepting returns, as certain products do not live up to consumers’ expectations or needs. Christopher (2005, p. 28) suggests that we have entered the era of supply chain competition. Globalisation and the increasing competition between organisations to attract the end-user or consumer have resulted in shorter product life cycles; products are almost obsolete by the time they reach the marketplace. Thus, internal integration is no longer sufficient by itself; to become the market leader the supply chain must be integrated. Christopher (2005, p. 137) argues that the main focus should be on effectiveness rather than efficiency and the development of an agile supply chain by increased responsiveness. Increased responsiveness is logical in the highly competitive contemporary market. The increased competition and the downward pressure on price (Christopher, 2005, p. 33) have forced organisations to focus on their core business instead of vertical integration. This shift follows the globalisation trend of outsourcing non-core business. This, however, increases the complexity of the supply chain, which requires supply chain integration and management. The logic of supply chain management states that independent entities can no longer compete by themselves in global customer value. The objective of supply chain management is to create the greatest value for the entire supply chain network, including the end-customer (Croxton et al., 2001). Porter (2008) argues that it is the industry structure that drives competition and profitability. Porter’s five forces that shape the competition are applied to the industry as such and therefore are not suitable for the analysis in this thesis as the main focus will be on selling and delivering finished goods from the shelf. However, Porter notes that an understanding of the forces that shape the competition is the starting point for developing strategy and the strongest force or forces determine the profitability and become the most important in the formulation of a strategy.

The e-commerce business and its consumers are both directly affected by regulation: within the EU, the consumer directive (EUR-lex, 1997) stipulates conditions for both parties regarding returns allowances. These are minimum requirements and they are reflected in the returns policy document. Globalisation has changed the competitive arena and both increased the competition and opened or widened the market opportunities. In the Nordic countries, foreign purchases are an important part of the Norse e-commerce. Four out of ten consumers have shopped online from another country in the past year (PostNord, 2012). The most common countries to make

<table>
<thead>
<tr>
<th>Role</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Reasons</td>
<td>65.2%</td>
</tr>
<tr>
<td>Clean Channel</td>
<td>33.4%</td>
</tr>
<tr>
<td>Legal Disposal Issues</td>
<td>28.9%</td>
</tr>
<tr>
<td>Recapture Value</td>
<td>27.5%</td>
</tr>
<tr>
<td>Recover Assets</td>
<td>26.5%</td>
</tr>
<tr>
<td>Protect Margin</td>
<td>18.4%</td>
</tr>
</tbody>
</table>

Table 4 The strategic role of reverse logistics (Rogers and Tibben-Lembke, 1999) indicating both value creation and value recovery.
foreign purchases online are the UK (57%), the US (44%), Germany (29%) and China (13%) (PostNord, 2012). The Nordic e-commerce market is approaching 100 billion and Nordic consumers purchased goods to a value corresponding to SEK 95 billion in 2011.

Returns management as a supply chain management process includes several features that can increase individual organisations’ effectiveness and efficiency. However, the process will provide the most benefits when implemented across the members of the supply chain. The returns management process can reduce costs, increase revenues and increase customer satisfaction (Rogers et al., 2002). However, the conceptual RM framework (Rogers et al., 2002) was not defined for the e-commerce business and therefore there is a need to test and verify the applicability of the process and activities to the B2C e-commerce business. The process interfaces and the activities mentioned were clearly developed and defined before the great e-commerce boom and therefore the relatively new phenomenon of e-commerce consumer returns might not fit the framework.

The RM framework is defined for the SC; however, it is clearly developed with a manufacturer as the focal point. The gatekeeping activity is quite labour-intensive and therefore its applicability to B2C e-commerce is probably quite poor. The framework and activities as described in the literature (Rogers and Tibben-Lembke, 1999; Rogers et al., 2002) are probably meant to support rather infrequent and valuable return flows between the organisations in the SC, which are quite distant from the e-commerce consumer returns, especially in fashion and apparel.

Porter argues that in essence the work of a strategist is to understand and cope with competition (Porter, 2008, p. 79) in an industry. Performing an industry analysis, Porter lists common pitfalls and one of them fits the analysis performed in this thesis, namely not to pay equal attention to all of the five forces, but rather to dig deeper into the most important. The literature highlights that organisations are starting to apply and implement returns management strategically internally and in supply chains. There is, however, little evidence regarding why and how this started and further where in the chain it started. In e-commerce and especially in fashion and apparel, consumer returns are omnipresent and therefore one might think that returns management is a strategic issue. If not, how does one start to address returns management in an organisation and what is needed to increase the awareness of the importance of returns management?

1.3 Purpose

Derived from the discussion in the introduction, the purpose of this thesis is to:

Increase the understanding regarding how and why to apply and improve returns management in e-commerce.

Further, the aim of this thesis is to improve the RM framework and to assist the development of returns management research. The intention is to develop a conceptual/theoretical model of an e-commerce returns system that incorporates the application of avoidance (to improve effectiveness) and gatekeeping (to improve efficiency) in an e-commerce context with the aim of improving the system’s performance (effectiveness). To be able to apply RM, there is a need to understand better and identify the factors that cause returns.
Previous research has highlighted the following areas for further research (Rogers et al., 2002); see also Rogers & Tibben-Lembke, (2001, p. 146):

- Determining the costs and benefits to the supply chains derived from improved returns management.
- Determining which method of gatekeeping is most effective in managing the trade-offs between costs and customer service.
- Identifying the information technology and types of systems that are needed to support returns management fully.

These research areas are partly addressed in the thesis and will be examined in the following sub-chapter, which presents the research questions.

1.4 Research questions

In the preceding chapters, the background to the research was outlined, indicating a natural increase in returns depending on environmental concerns and legislative issues. Further, considering the increasing distance sales and returns levels presented in Table 1, together with the awareness of increasing consumer expectations and the relatively new e-commerce business, we need to focus on understanding which factors create or cause consumer returns. A thorough understanding of the factors that cause returns and how these affect organisations and the system should open up new systems opportunities. Below the three main research questions are presented and all three research questions result from a mixture of prior theoretical knowledge and insights from the author’s licentiate thesis (see Hjort, 2010).

RQ 1: What causes consumer returns and what are the potential benefits of improving returns management in an organisation without a clear returns management strategy?

The question addresses two issues: firstly, the apparent mismatch between the conceptual framework of RM in the context of B2C e-commerce; and secondly, how forces such as competition, legislation and globalisation change the arena and how these external forces are handled internally. Further, what are the effects from the increasing competition, changing legislation and globalisation on the organisation and how are the effects treated to manage consumer returns?

RQ 2: How can contemporary information technology enhance returns system performance and contribute to efficient and effective returns management?

In the research literature, returns management is defined and described in a supply chain context with a focal point on the manufacturer, extending the network further down- and upstream with the focus on efficiency. Research regarding the returns information system is almost absent from the literature and the second research question addresses how to apply gatekeeping and avoidance to increase efficiency and effectiveness in the supply chain returns system. Hjort and Ericsson (2010) conclude that a returns system that facilitates the separation of goods and information flows together with a possibility for customers to register returns online could contribute to
improved returns management. However, how this could be achieved and how it could enhance the system need to be researched.

RQ 3: Based on the achieved understanding and results, what are the potential benefits of aligning returns management with the business/supply chain strategy?

The last question aims to apply the findings from the previous two research questions and to incorporate them into the answer to the third question. In the literature, returns management is closely related solely to value recovery. However, in certain areas, such as e-commerce, RM is undoubtedly part of value creation and therefore it is potentially important to align it with the overall business strategy. The third question addresses this issue.

1.5 Definitions

The term “distance sales” is used to describe the combination of mail order and e-commerce; in the licentiate thesis, distance sales include phone orders as a third-order entry. “Customer” and “consumer” are used interchangeably in the thesis as terms for the end-user, i.e. the one who purchases; however, this individual does not have to be the one who finally consumes the resources.

Efficiency is defined here as doing activities/things right and, as Porter (1996) expresses, greater efficiency results in lower average unit costs. Effectiveness is defined here as doing the right things or performing the right activity.

The returns management process and other processes are discussed in the thesis and therefore there is a need to define a process. A process is defined as:

\[ \text{... a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer. (Hammer and Champy, 1993)} \]

The following definitions are used throughout the thesis to describe the amount of returns in relation to what was delivered. “Return percentages” are described in two ways, namely for shipments and units. One shipment can contain one or more units and the shipment’s return percentage for one shipment can only be 0% or 100%. However, for units it can be in the full range of 0% to 100%. The greater the number of units delivered, the smaller the return percentage can be, if we do not consider 0% as a return percentage. The opposite occurs for fewer delivered units — two delivered units can be returned in the range of 50% or 100%, if we exclude 0% as a return percentage.

Return percentages for shipments are calculated as described below:

\[ \text{Return percentage shipment} = \frac{\text{Returned number of shipments}}{\text{Delivered number of shipments}} \]

Return percentages for units are calculated as described below:

\[ \text{Return percentage units} = \frac{\text{Returned number of units}}{\text{Delivered number of units}} \]
1.6 Delimitations

The application of returns management to the e-commerce market is limited to focusing on two of four activities – returns avoidance and gatekeeping – and does not focus on returns or reverse logistics. The analysis of the present systems using the developed framework will likely support the development of RM, strategically, thus influencing the other two activities, i.e. returns and reverse logistics. The main reason for limiting the research to these two areas is that historically the focus has been on RL.

The mail order/e-commerce system is characterised by delivery from stock, meaning that the final distribution of finished goods will take place after a consumer has placed an order. Thus, the system analysis will concentrate on the e-commerce business and further downstream in the SC. Information regarding other parts of the SC will be taken into account when opportunities arise and when it fits the overall research purpose.

1.7 Thesis outline

This section presents a brief outline of the thesis as an introductory guide for the reader.

Chapter 1 – Introduction. In the introduction, a background to the problem area of consumer returns together with returns management is presented. The purpose of the research is presented, and three research questions are proposed and discussed in relation to the purpose and problem background. Based on the purpose and the research questions, the scope of the research is presented, and limitations are also addressed at the end of the section.

Chapter 2 – Previous research and conclusions – licentiate thesis. In the second section, the research performed in the licentiate thesis is summarised and the main conclusions are presented. The licentiate thesis served as a starting point for the doctoral degree thesis and it influenced both the final purpose and the questions addressed.

Chapter 3 – Frame of reference. In this section, the theoretical frame of reference (FoR) is presented. The FoR is developed from the purpose and the questions addressed, to support the analysis performed from synthesising different theories and perspectives. The section is quite comprehensive and was expanded successively during the research.

Chapter 4 – Research design. This section provides a description of the research approach undertaken. The author attempts to delineate his pre-research presumptions and how they may have influenced the research process and results, ending with a discussion on research quality.

Chapter 5 – Summary of appended papers. The results from the appended papers are presented, together with the relations between the research questions and the appended papers. The relationship between the appended papers is described and each paper is summarised, presenting each introduction, purpose and overview and methodology and ending with the main findings and conclusions. The section closes with an overview of the appended papers and a presentation of the results in brief.

Chapter 6 – Analysis – results. This section presents and discusses the answers to the three research questions addressed.
Chapter 7 – Conclusions. The main conclusions in the thesis are presented in Chapter 7, in which the returns management in e-commerce is concluded together with the practical and theoretical contributions.

Chapter 8 – Discussion. This section discusses the results of the thesis in terms of the purpose and research questions as well as the research performed and the outcome.

Chapter 9 – Future research. The thesis ends with suggestions on future research, presenting topics that are relevant to the findings in this thesis.
2 Previous research and conclusions – licentiate thesis

The licentiate thesis serves as a starting point for the doctoral degree thesis; therefore, a brief summary of the licentiate thesis with the title, Returns Avoidance and Gatekeeping to Enhance E-commerce Performance, is presented.

2.1 Introduction and purpose

The mail order business was once a traditional method of selling and distributing clothes, and other commodities, to customers. Now, the e-commerce trend, with more sophisticated techniques for marketing, selling and distributing goods, has challenged not only the traditional mail order system, but also seemingly the traditional retail chain and even fashion chains. This change not only affects how sellers compete (be they long distance or not), but it also probably affects us as consumers – our requirements and how we purchase. This work contributes to this development through extensive empirical investigations into how and why customers return what they have previously ordered.

Returns management as a supply chain management process includes several features that can make an individual organisation more effective and efficient. However, the process will provide the most benefits when implemented across members of the supply chain. The returns management process can reduce costs, increase revenues and increase customer satisfaction (Rogers et al., 2002).

The purpose of this thesis is to identify and characterise the important factors causing returns. Further, to assist the development of returns management research, the intention is to develop a theoretical model of a supply/demand chain returns system that incorporates the application of avoidance and gatekeeping in a distance sales context with the aim of improving the overall system’s performance. The research design used in the thesis is a case study performed at one of the largest mail order organisations in Sweden, with a long tradition in the business. The main data used in the thesis were collected from interviews and a questionnaire and secondary data were exported from the case organisation. Sales and returns data covering approximately one year of sales and returns in the Swedish market were analysed quantitatively, and the results were regularly discussed and presented to key informants in the case organisation to substantiate authenticity and trustworthiness.

2.2 Research questions and design

A thorough understanding of what causes returns and how they affect organisations and the system should open up new systems opportunities. Below, the three main research questions (RQ) are presented.

RQ 1: What characterises efficient returns systems? In particular, what are the causes and sources of returns, which factors and processes influence returns systems’ performance and what are the key elements and requirements to consider when designing a returns system?

RQ 2: How can contemporary information systems enhance returns system performance and contribute to efficient returns management?
RQ 3: Based on the achieved understanding and results, how should a supply/demand chain be organised to avoid future returns?

This research followed a systems approach to logistics research, as Ekwall (2009) indicates as an established tradition. The author, however, acknowledges the actors’ approach as being equally interesting, but given the research questions, purpose and scope, the systems approach was found to be the most suitable.

Given the characteristics of logistics research, complex systems, including organisational boundaries, the presented research questions and the possibilities of accessing empirical data, from both transactions and consumers, the case study design was decided upon, using a mixed-method approach combining both quantitative and qualitative data. According to Ellram (1996), research methodologies can be described according to the data used and the type of analysis performed.

Case studies are suitable for holistic situations in real-life settings (Ellram, 1996, p. 99; Dubois and Gadde, 2002; Yin, 2009) and to formulate theories that later could be tested using surveys. A case study is not a linear process; it requires an integrated approach to handle the interrelatedness of the various elements in the research work, and therefore the abductive procedures should support the case study method. Any preliminary analytical framework consists of the researcher’s ultimate presumptions, and the framework is developed as the empirical observations emerge. A holistic approach often determines a systems approach, in which the world is understood in terms of its mutually dependent components, whereas the more positivistic approach favours a reductionist approach, in which the reality could be deconstructed into its parts (Gammelgaard, 2004). Following a systems approach, deconstructing the reality into its parts is ultimately meaningless; the researcher should work very closely to, and influence, the research object, and the main objective is to improve the system.

The aim of the first study was to increase the understanding of the possible causes of returns and how returns management, especially avoidance and gatekeeping, applies to the problems of consumer returns. The first study is presented in two papers (I and II). To explore a little-known phenomenon, an exploratory case study design is desirable, according to Ellram (1996). The case study design suits both exploratory and descriptive studies, and the combination of both in-depth understanding and broad descriptions – i.e. combining qualitative and quantitative techniques (Eisenhardt, 1989; Ellram, 1996) – facilitates the quest to determine the causes of consumer returns.

The second case study relates to the outcome of the first, and tries to describe the differences in consumer requirements regarding service delivery. The study uses the survey technique to gather empirical data from the customers to the case organisation in the first and second studies. According to Yin (2009, p. 63), mixed methods, in this case combining a survey with a case study, could be more difficult to perform but could enable the researcher to address broader questions.

The overall research process can be described as abductive (see Figure 3), which fits both the research questions and the purpose of the research.
Figure 3 The abductive research approach (Kovács and Spens, 2006)

In the first study, the initial exploratory search for causes of returns helped to develop the research questions further and to be more descriptive in the understanding of causes. This resulted in a developed framework that expanded towards logistics and customer service. In order to apply avoidance later, we had to learn more about the “root cause” of returns. Following the abductive approach, out of the exploratory results we developed hypotheses that were tested against the empirical data. The results of these hypotheses generated suggestions regarding what causes returns, or at least regarding the parts of factors that cause returns. Later, the propositions were tested in Study 2 and presented in Paper III, and this should be seen as the second test of the results.

2.3 Results from the appended papers

The individual results from the appended papers are combined and presented in relation to the research questions and main findings in Table 5. Research question 1 (RQ-1) is divided into four parts, as Paper I does not answer the whole question. RQ-2 was addressed in both Paper I and Paper II, whereas RQ-3 was addressed in all three papers with a focus in Paper III.

As presented in Table 5, Paper I answers parts of RQ-1, in which customer age, lead time and order entry were found to affect returns levels and hence cause returns. This leads to an increased need for more information about demands or requirements from the customer side, pre-delivery, and a follow-up, i.e. post-delivery, to assure that the correct service was executed (RQ-2). If not, how could customers be segmented and offered a differentiated service, or better, how could the pre-delivery information regarding customer requirements result in more accurate service delivery in tune with the demands, causing loyal customers and reducing returns?

Paper II researched and answered part of all three research questions; a returns system that does not separate information and returned goods cannot gatekeep, and therefore the efficiency of the system is affected negatively. Without gatekeeping, all returns are let into the system and the overall aim of the returns system, namely to recover value, cannot be guaranteed. The returns information system (RQ-2) does not support the returns management process as such. A web-based returns system could help to facilitate both the gatekeeping function, through the separation of information and goods, and the avoidance function, in which a faster information flow can help to reduce unnecessary returns. Paper II also addressed RQ-3, though with modest results; the indication that returns levels vary with customer age and the notion that customers
have different requirements further highlight the need for segmentation and differentiated service delivery.

Paper III followed the results from the previous papers addressing the questions of customer requirements and their dispersion by possible segments. In line with the results from Paper I and Paper II, it was concluded that today’s mail order/e-commerce business would probably benefit from investigating the customers’ needs and requirements and offering the customer segments differentiated services.

Table 5 The relation between the appended papers in the licentiate thesis, the research questions and the main findings

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Paper I – Avoiding returns in distance selling through differentiating customers and their service delivery</th>
<th>Paper II – An application of avoidance and gatekeeping to manage returns in a distance selling setting</th>
<th>Paper III – Service delivery requirements of mail-order/e-commerce customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>What characterises efficient returns systems?</td>
<td>Gatekeeping the entry point of the returns flow to facilitate value recovery</td>
<td>Customer age, lead time and order entry, i.e. varying customer demands</td>
<td>Product size and fit, other reasons leading to regretting order and not collected parcels. Product not consistent with text or picture</td>
</tr>
<tr>
<td>What are the causes and sources of returns?</td>
<td>The ability to gatekeep and guard the returns flow from unwanted returns</td>
<td>Separation of returns information and goods flow to facilitate gatekeeping</td>
<td></td>
</tr>
<tr>
<td>What factors and processes influence returns systems performance?</td>
<td>Retrieve information other than product specifics (size &amp; fit) to increase consumer insight in order to offer and deliver the right service</td>
<td>Gatekeep unwanted returns and avoid unnecessary returns. Retrieve returns information, process information to avoid returns i.e. short term (outgoing), and long term (product dev. &amp; suppl. dev.)</td>
<td></td>
</tr>
<tr>
<td>RQ 1</td>
<td>Based on the achieved understanding and results, how should a supply/demand chain (S/DC) be organised to avoid future returns?</td>
<td>Customer segmentation, differentiated service delivery</td>
<td>Separation of goods and information, customer segmentation</td>
</tr>
</tbody>
</table>
2.4 Main conclusions

The overall conclusion is that the distance sales trade is affected by the trends that are seen in other areas, namely increased competition – not only from within the distance trade but also from the traditional retail trade. This is probably due to the ease of shopping via e-commerce and the vast supply of products that even exceeds that of the retail chains. This attracts new customer groups with new demands and requirements. This, in many ways, constitutes an archetypal difference between today’s e-commerce business and yesterday’s mail order business, and could explain why customers from the different channels behave and return items differently. The use of the Internet affects how we purchase, and therefore the result of the purchase. It is quite likely that we are far more spontaneous when purchasing over the Internet in comparison with placing telephone and mail orders.

The primary conclusions are that consumer requirements tend to vary, and therefore the standard solution of delivering goods to a vast variety of consumers without engaging in discussion about the individual customer service requirements (et cetera) is most likely to be the central cause of the increasing returns trend seen in the business.

2.5 Contributions

The contributions of the licentiate thesis are characterised as industrial/practical and theoretical, with the main contribution in the former category, as this is applied research in close cooperation with organisations. The main share of the practical contribution comes from the detailed descriptions of the relations between logistics processes and returns and, further, the relations between customer groups and returns and finally the relations between different order entries and returns. It indicates the importance of understanding customer requirements and gaining consumer insights, through both closer cooperation with customers and the development of new information systems to communicate better and faster and to follow customers and their purchasing and returns behaviour dynamically.

The theoretical contributions from the research are modest; however, the model (see Figure 4) was adapted from Carter and Ellram (1998).

![Figure 4 The forces affecting consumer returns (Hjort, 2010)]
The model presents four forces causing returns. It builds on previous research in the field of reverse logistics and somewhat opens up the perspective, shifting from a product perspective regarding returns to customer service. This leads to combining the frameworks of avoidance and demand chain management, resulting in a quite detailed discussion of over- and underdelivery (see Figure 3.7 and Section 5.2 in Hjort (2010)) and the potential benefits from the segmentation of customers and differentiated service delivery.

2.6 Future research

Finally, in this concluding part, the author wishes to summarise the work carried out and how it has influenced the author and future research. First, the complexity of the world of logistics research has become quite apparent. Studying the last mile problem, distributing products normally kept in stock to customers ordering via mail order/e-commerce is only a minor part of the field of logistics, yet has proved to be a complex area of investigation. Previous research in the field of returns has focused on handling efficiency as returns levels increase. The work performed by the author has introduced the importance of understanding the customers’ requirements, especially regarding service delivery. Therefore, future research will continue to build on the idea that we all have different, individual requirements and demands.

Following the trends, including the EU action plan for creating an online single market, further drives the need for a better understanding of these customer requirements, and forgetting the focus on an average customer supported with a uniform delivery system. Regarding the answers presented to the research questions, it should be of the utmost importance and interest, for practitioners and academia, to understand customers’ requirements and ultimately how customers perceive the service delivery offered or executed, and how organisations are affected by competitive pressure, regulatory issues and their own delivery performance, in order to avoid the returns that can be avoided, i.e. unnecessary returns.

This thesis attempts to establish a deeper understanding of the causes of returns and how returns management, particularly avoidance and gatekeeping, can be applied to distance sales. The scope of the thesis is narrow and explores returns and related problems in one organisation. Future research should expand the size of the case study and explore how returns vary by market and whether this variance is influenced by geography, legal and cultural factors, and so on. Furthermore, it should also explore how returns in distance sales affect an organisation’s revenue (see Figure 5).

Research should also consider how customers could be encouraged to pay for all the returns by increasing the product price. Consumer insight was mentioned in section 3.6, together with demand chain management in section 3.5. Heikkilä (2002) proposes that supply chain improvement should start from the customer end, and the concept of SCM should be changed to demand chain management. In this instance, the distance sales consumers’ requirements regarding service delivery and the availability of products, and how these can be transformed into value offerings and differentiated capabilities, should be considered.
Suggestions for future papers

I: How do returns vary within different markets and what are the main reasons for this variation? We proposed that the outer environment (see Figure 4) consisting of regulatory and competitive forces influences returns. Paper I should investigate how these forces affect returns levels.

II: How do returns affect the revenue in a distance sales organisation and what could be done to maximise revenue by minimising returns without affecting sales (see Figure 5)?

III: Test propositions from Paper II as a quasi-experiment and measure how sales and revenue are affected in relation to returns. Returns policies could be seen as a bridge that decreases the consumer risk regarding distance sales. It allows new customers to test the business as such; further, liberal returns policies that expand to include reduced freight and returns costs might attract new customers as well as stimulating repurchase and more impulsive behaviour when ordering, thus creating more returns.

IV: How can consumer insights be created and transformed into differentiated value propositions and supported by supply/demand chain capabilities in order to avoid under- and overdelivery of products and services?

Figure 5 Returns’ effect as a function of ease of returning (returnability) against sales and returns
3 Frame of reference

This chapter presents and discusses the theories that have been used in the development of the theoretical frame of reference for the research performed in this thesis. The framework focuses on RM that allows a proactive return approach via avoidance, identifying factors that might influence returns, and therefore further expands the thesis’s framework to fit the theory matching process used (see Figure 3). The avoidance activity is central to this thesis and therefore the framework, though focusing on RM, expands into explaining the forces and factors that drive consumer returns, such as theories on consumer behaviour. Without the expansion of the framework and suitable theoretical connections, the credibility of the results and suggested improvements based on new understanding would have been questionable. The expansion of the frame of reference had direct implications for the system’s model; the returns system that was the assumed initial system in the end included the distribution system.

![Diagram of supply chain and theories](image)

Figure 6 A presentation of the SC and the theories used in the framework developed for this thesis

3.1 Returns management in B2C contexts

The change from early product recalls and reverse logistics to today’s returns management has evolved from merely a company activity within a logistics network to an important supply chain management process as introduced above. A number of terms, definitions and pieces of literature describe the reverse flow of products: closed-loop supply chain management (Blumberg, 2005; Guide Jr and Van Wassenhove, 2006; Guide and Van Wassenhove, 2006; Yang et al., 2009), reverse logistics (Rogers and Tibben-Lembke, 1999; Rogers and Tibben-Lembke, 2001; Autry, 2005) or simply returns (Anderson et al., 2009), to mention a few.

If organisations still view returns as a cost driver and not as a competitive edge, they miss the potential value it could add to them and their customers (Mollenkopf et al., 2007a). Wood (1979) had already concluded in 1979 that customer satisfaction and company image are factors to consider when recalling products. In the conceptual definition of (Rogers et al., 2002), returns management consists of strategic and
operational levels. The strategic part of RM develops the road map for the execution on the operational level. RM is often underprioritised in comparison with other business processes. In distance sales with return levels reaching 20—50% or even higher, it is difficult to understand that RM could still be underprioritised, especially when a large share (if not all) of the costs of returns are paid by all customers, returning or not. However, returns management is increasingly being recognised for just the purpose of affecting the competitive positioning, i.e. affecting sales, and it is nowadays seen as an important link between marketing and logistics (Mollenkopf et al., 2007a). In e-commerce, especially fashion with its obvious problems in finding the right fit and size online, it is crucial to see the company as a whole. Porter (1996) explains that “fit is important because discrete activities often affect one another”; fit here is meant in relation to organisations and not products. From a consumer’s perspective, online purchase represents a certain level of risk (Mollenkopf et al., 2007b) and returns policies can therefore help to improve customer loyalty by reducing the risk (Rogers et al., 2002). However, the risk does not only relate to products, i.e. quality, size and fit issues; the consumer also has to await the delivery and the execution of the service delivery as well. Mollenkopf et al. (2007b) argue that well-executed returns handling could act as a service recovery opportunity, in which the customer evaluates the ongoing service delivery during a particular purchase experience. According to Andreassen (2000), service recovery affects customer loyalty, which follows the arguments by Harrison and van Hoek (2008) that service performance is important, as customers’ perception of delivered products and services is what creates loyal customers. Thus, the importance of returns management should not be underestimated in distance sales as a competitive advantage is created through the system of activities (Porter, 1996), returns included.

Returns management is defined as (Rogers et al., 2002, p. 5):

The part of supply chain management that includes returns, reverse logistics, gatekeeping and avoidance.

The above definition is used in this thesis and the broader integrative approach of returns management as it allows the discussion of the problem of returns and work proactively with avoidance and thereby hopefully avoids future returns. The gatekeeping and avoidance activities are important in the creation of an efficient and effective returns flow. However, it is equally important from the perspective of an efficient and effective supply chain. As noted in the introduction to this thesis, independent entities can no longer compete by themselves in creating global customer value and therefore the objective of SCM is to create the greatest value for the entire supply chain network, including the end-customer (Croxton et al., 2001). This is achieved, according to SC theories, through the integration of processes within and between organisations (Croxton et al., 2001; Mentzer et al., 2001; Lummus et al., 2008) (see Figure 7).
The definition of logistics has evolved over time and more recent definitions emphasise the strategic, coordinative (Harrison and van Hoek, 2008, p. 7), future profitability, cost-effective fulfilment (Christopher, 2005, p. 4) and supply chain elements (Harrison and van Hoek, 2008). This shift of emphasis is probably a result of increased competition due to globalisation, shorter product life cycles and more demanding customers. Traditionally, the literature describes logistics from a focal firm perspective whereby sourcing and production are managed (planned, executed) in line with sales forecasts and demand.

A returns flow is much more reactive and less visible (Tibben-Lembke and Rogers, 2002, p. 272). A returns flow with poor visibility, in a B2B or a B2C context, will likely support neither an efficient nor an effective returns or supply chain flow. Thus, a returns flow with poor visibility, and therefore disconnected from the forward flow, and where the returns flow could contain non-defective (just unwanted) items, then the supply chain “systems” available-to-promise are not updated and the overall effectiveness is likely to be affected. Thus, we cannot be sure that we are performing things right or the right things in the returns flow or in the supply chain. The four returns management activities as defined (Rogers et al., 2002) are presented in the subsequent subsections.

### 3.1.1 Returns

Returns are caused by a plurality of factors depending on the position in the supply chain and the nature of the product. Organisations need to assess all the possible returns and determine the best possible returns procedures and returns flow network. The flow of goods to and from consumers could be depicted as a double-arrowed goods flow, as shown in Figure 7. However, the returns flow as such differs from the traditional goods flow (Tibben-Lembke and Rogers, 2002) and is therefore indicated with a separate returns flow arrow pointing in the opposite direction. The traditional, forward or downstream goods flow that travels from left to right in Figure 8 is traditionally supported with more information and planning based on sales forecasts and advanced shipping notices (ASNs) (Tibben-Lembke and Rogers, 2002, p. 272) or point of sales (POS) data that drive replenishments. The returns flow as such differs...
depending on its origin, i.e. consumer, e-commerce or supplier, and it is normally more reactive than proactive (Daugherty et al., 2002), due to less information and visibility and less focus on economic gain. The closer to the consumer, the greater the size and scope of the returns issues are (Tibben-Lembke and Rogers, 2002). The visibility and value of the returns flow are likely to increase as products move upstream as returns are registered, handled, sorted and buffered; thus, the shipment frequency decreases as returns move towards the supplier and the value per shipment should increase as products are consolidated from individual consignments (returns) to larger units (pallets, cages, containers).

The Global Supply Chain Forum and the authors of “The returns management process” (Rogers et al., 2002, pp. 3-4) define five types of returns. The main bulk of the e-commerce returns flow consists of consumer returns and some product recalls due to quality issues.

**Consumer returns** are perhaps the most difficult as they are unpredictable and therefore difficult to anticipate, which affects the handling and execution of the return. From a B2C perspective, consumer returns are naturally the main returns flow and should be differentiated by the cause of return. If the cause of return is not a consumer error, the best procedure might be to target reconciliation with the consumer and thereby reduce the harm caused. Returns that are associated with quality issues require procedures that incorporate product development, production and suppliers. As stated by Cooper et al. (1997) regarding logistics and supply chain management, “there is definitely a need for the integration of business processes in the supply chain that goes beyond logistics”; this applies equally well to returns management. Reasons for returning are often defective products or buyers’ dissatisfaction or remorse. Other possible reasons (non-defective products) are fit, size, missed collection or difficulty of operation (Rogers and Tibben-Lembke, 1999). Thus, the returns management process will (should) not own the process of understanding what causes returns and how to
reduce the number of returns in the future. The reasons for returning of course vary with the products at hand, and therefore there is no simple route to integrate returns management and other processes to reduce consumer returns. However, Ferguson et al. (2006) argue that consumer product returns are driven by a “consumer is king“ attitude supported by liberal product returns policies.

Not all consumer returns are a token of a bad sale or a dissatisfied consumer; some organisations are even managing product returns policies to maximise their future profits (Rosenbaum and Kuntze, 2003; Petersen and Kumar, 2010). From a company perspective, despite the cost of returns, i.e. handling and refunding, the customers’ ability to return may have a positive impact on future purchases and long-term profits (Petersen and Kumar, 2010). This ability to return and the level of leniency in returns policies decrease the risk that a customer might perceive prior to ordering or at the time of placing an order, especially in e-commerce. In e-commerce, consumer returns are an inherent element of shopping online due to the customer’s inability to experience a particular product and/or service prior to ordering. However, the returns policy and its leniency might also result in consumer abuse (Kang and Johnson, 2009) and research has found that that nearly 20% of consumers engage in some type of “illegitimate product returns” (Piron and Young, 2000; King and Dennis, 2003). In the high-tech industry, a large share of consumer returns have no functional or cosmetic defects, and these are called false failure returns (FFRs). Ferguson et al. (2006) report that in HP’s inkjet printer group, FFRs account for 80% of their returns. At Bosch Power Tools North America, FFRs account for 2% of sales (Ferguson et al., 2006). Some retailers are trying to identify customers with excessive returns and refusing to allow them to return items (Cha, 2004). It is controversial to practise this aggressive consumer behaviour (Ferguson et al., 2006). Within the EU (EUR-lex, 1997), organisations are not allowed to decline e-commerce consumers’ returns if they are legitimate returns; thus, in e-commerce, there is no such thing as excessive returns.

By analysing consumer returns and achieving a better understanding of drivers such as consumer behaviour, product characteristics and consequences of product returns, managers from different functions in e-commerce can determine the relationship between the costs and the benefits to the company and their supply chain. Understanding the actual returns rate and determining an acceptable returns level form a good starting point (Blanchard, 2007).

**Marketing returns** are products returned from a position downstream in the supply chain. They often occur due to slow sales, quality issues or a manufacturer’s purchase of a competitor’s retail stock. Another possible reason for a marketing return is producers and retailers who promote a brand or mark down their products if the consumer returns a similar used product. The enterprise Bröderna Nyman in Långhem in Sweden used this system in 2006 and 2008 and the products that were collected from consumers were then donated to charity. Using marketing returns then becomes a way of both increasing sales and positioning the brand in favour of competitors. Marketing returns as such are a returns flow that appears between a retailer and a wholesaler or producer. They are not in the main focus of this thesis as it focuses on consumer returns; however, marketing returns and the returns policy between e-tailers and their suppliers might be a solution to cope with slow movers or products that are unsuitable for the local market and wanted elsewhere. Thus, from an SC perspective, instead of selling products and handling excessive returns rates or even using clearance sales in...
one channel of the SC, products are sent upstream to another retailer with a better demand and returns pattern.

**Asset returns** are products (assets) that a company wants to be returned. Assets can be expensive assets, such as oil drilling equipment, or less expensive reusable assets, such as containers or pallets (Rogers *et al.*, 2002). Autoliv in Vårgårda in Sweden uses collapsible boxes to deliver airbags and other safety equipment to their customers in a closed-loop system and collects the collapsed containers and then delivers new products in a back-haul system. These containers are relatively expensive and used only when the closed loop functions properly. When delivering to areas such as the Russian automotive industry, other options are evaluated due to the high risk of losing expensive containers.

**Product recalls** are returns that are normally initiated because of safety or quality issues. Industries that are susceptible to these types of returns, such as the automotive or food industries, have to develop a system to inform customers and an efficient handling system. An example is Båtmera, of Sweden, which found that a wooden toy it sold could break if dropped from a height of 1.5 metres. No customer had reported breaking the toy; the problem was discovered when an employee dropped the toy. The company conducted a voluntary recall of the product, informed the customers via the Internet and gave them the option to bring the product back to the nearest store for a full refund.

**Environmental returns** are returns caused by environmental regulations. These can be due to a product containing hazardous material or waste, or non-hazardous material or waste such as used packaging material. In the EU, the responsibility for disposing of this material lies with the producer. In Sweden, producer responsibility exists in eight areas: batteries, cars, drugs, electronic appliances, paper, packaging material and tyres (Naturvårdsverket, 2013). This means that the importer or producer of these products must pay for collecting and recycling the products sold on the market.

### 3.1.2 Reverse logistics

Reverse logistics often seems synonymous with returns management (Mihi Ramírez, 2012); the author of this thesis and others (Rogers *et al.*, 2002; Diane and David, 2005, p. 34) refer to reverse logistics as the part of returns management that deals with the physical flow of materials upstream or at least from customers or consumers. Its main purpose is to recapture value from the product or, as a last resort, its proper disposal. It is the planning, implementing and controlling of the physical flow of returns (cf. Thierry *et al.*, 1995; Rogers and Tibben-Lembke, 1999). As such, reverse logistics as an activity normally focuses on efficiency; as part of a returns management process, the overall SC effectiveness must overrule the efficiency focus. Increased competition requires companies to focus on delivering and providing value and this includes reverse logistics (Mihi Ramírez, 2012). Therefore, from an SC, company and consumer perspective, we need to maximise the value creation or effectiveness, even if it means that we have to sacrifice or decrease the efficiency in a given situation in the reverse logistics flow. However, the focus on effectiveness rather than efficiency is not possible in a returns flow with poor visibility (see section 3.1) that is disconnected (system-wise) from the forward flow. The focus on efficiency might also be hindered, as the poor visibility cannot guarantee any value recovery either. In the e-commerce consumer returns reverse logistics flow, products are either delivered back to a drop of point (DOP) or delivered via a postal mail system. In the transportation network, the
returned shipment is retrieved from the DOP or the mail system; thereafter, it is collected, sorted and finally delivered to the receiver, i.e. the e-tailer. The pick up point (PUP), where the goods are delivered, could be the same location as the DOP.

The return system (red in colour) depicted in Figure 9 is reactive due to the fact that in a paper-based returns flow the receiver can only react as returns are delivered upwards in the system, including the mail order/e-commerce organisation. Even though information and goods have entered the returns system, the information is disconnected from the information system as it is travelling with the goods returned.

3.1.3 Gatekeeping

Gatekeeping is the screening of return requests and the returned item (Rogers et al., 2002, p. 10). Gatekeeping ensures that only returns that are allowed are accepted and then guided to the correct point in the SC. The gate (X) could be exemplified as a valve (in Figure 10 marked as X) opening for “wanted” returns and closing for “unwanted” returns, i.e. those for which value recovery cannot be accomplished or unwarranted returns that are outside the 14 days’ returns window (EU regulation). Return requests can be prevented (avoidance) by providing better information on or training for product operation, i.e. user friendliness and better sizing guidelines to mention a couple, as well as a returns information system based on real-time access to information regarding the causes of returns.
In Figure 10, returns enter the returns system downstream (from the right) and the gatekeeping (see Figure 11) activity is meant to guide the individual returns to the best individual disposition, given the returns cost and possible value recovery (see Thierry et al., 1995).

The gatekeeping activity $X$

Result $X^2$:
Return accepted and sent further upstream (arrow left) for investigation, refurbishment or entering another supply chain.

Result $X^1$:
Return accepted and reinserted into the forward flow (arrow up and right) after inspection and refurbishment.

Result $X^3$ or $X^4$:
Return not accepted further upstream, dispositioned into waste (arrow down) system or returned to sender (arrow right).

Figure 11 The gatekeeping activity and four possible gatekeeping results

Properly executed, gatekeeping improves the disposition of returns as returns are evaluated regarding the reason and their shape/conditions, and it determines how to route them. It reduces costs and increases customer satisfaction and this trade off is maximised only if the activity is performed at the entry point into the returns flow. The result is increased effectiveness and efficiency; however, depending on where in the returns flow it is performed, the level of efficiency and effectiveness is affected. Normally, it is applied at the entry point, but can be applied to more than one place in the returns flow (Rogers et al., 2002); see the three $X$s in Figure 10. The screening of return requests, such as the return material authorisation (RMA) together with guidelines and returns policies, determines the routing. In the US, this is often performed by a third party (Rogers et al., 2002); however, this is rarely (if at all) the case in the e-commerce consumer returns flow in Sweden (Hjort, 2010) or northern Europe. The conceptual framework including the gatekeeping activity is clearly developed for B2B (see Rogers et al., 2002, p. 14) handling consolidated shipments and not for each individual consumer return in e-commerce. In Sweden and other countries in Europe, the e-commerce returns flow is assisted by a prepaid and pre-printed return slip that follows the outgoing delivery towards the consumer and the resulting incoming returns flow (Hjort, 2010). This means that the gatekeeping activity as such cannot (at present) be performed until the returned goods reach the returns desk, often located in the warehouse from which they were once delivered. So, this results in all returns being accepted into the returns system and routed the same way, irrespective of their condition and what caused the return (Hjort, 2010). The disposition is performed after the gatekeeping; however, the ways of dealing with an individual return are somewhat limited, as the decision is not taken at the entry point.

The arrows pointing downwards guide the returns to recycling and the bent arrow pointing upwards right channels the returns into the normal product flow after being inspected and handled, which could include finishing, repair or other activities. Moving
towards the left in the returns flow normally implies more work carried out on the returns (Thierry et al., 1995). The gatekeeping activity is crucial in distance sales; the longer it takes to make the disposition decision of a returned product, the lower the expected market value of the returns when reinserted into the normal product flow (Mollenkopf et al., 2007a), meaning that late returners (outside the stipulated return window) affect the possible value creation. The implementation of gatekeeping in e-commerce requires the use of decentralised returns handling and/or a web-based returns information system. Solely decentralised (outsourced) returns handling would, however, disconnect the owner (e-tailer) of the problem from the execution of individual returns processing. There is room for improvement in returns information systems (Rogers and Tibben-Lembke, 2001, p. 146), especially from an integrative perspective (Näslund and Hulthen, 2012). Bernon and Cullen (2007) express that the development of ICT offers significant opportunities for economic and environmental benefits in the reverse logistics process.

3.1.4 Avoidance

Avoidance aims to find ways to minimise returns requests (Rogers et al., 2002; Lambert, 2004) or returns by developing and selling products in such a manner. It is this activity that differentiates returns management from the earlier reverse logistics, because by successfully applying avoidance, the returns are not sent backwards and could by definition not be reverse logistics (Rogers et al., 2002). The ways of executing avoidance may differ; improved quality, better (more accurate) information or user instructions and better service are some common applications. Also, if the results from the previous experiences of a customer would classify a new order or order row as a “likely future return”, then the return can be avoided if the order (row) is not delivered at all. Hjort (2010) finds that the consumer returns level in distance sales can be related to the delivery lead time, customer age and type of order entry (phone, mail or online order). It implies that consumers’ return behaviours are not uniform and further that there might be different demands on the business as such. Alternatively, the customer could be guided to a more suitable product with respect to size, fit and colour. This results in increased effectiveness in the SC and increased efficiency in the returns flow as a return is avoided. Thus, the resources could be used elsewhere; from a consumer perspective, the activities and resources normally used to make returns are likely to be reduced and the value should increase.

Improved quality can be considered as a reduced number of defective products and better instructions or information. This can be in combination with better service, for example home installation and education by the retailer. This is a service that was offered to ONOFF’s customers: both to visitors to the shop and to Internet buyers. Extra Film is trying to avoid certain returns; new customers who place an extraordinarily large order are contacted before the order is executed to ensure that there has been no error by the customer. Black & Decker integrates returns and product development to learn from previous returns in order to avoid future returns (Rogers et al., 2002). For online or catalogue retailers, product consistency is a critical issue as traditionally many returns result from sizing and fit issues. Victoria’s Secrets returns management team works with suppliers to apply sizing guidelines across all products in a uniform manner. This reduces costs and improves customer satisfaction (Rogers et al., 2002).
Avoiding returns is not always the issue; a hesitant consumer who struggles to find the right product might be lost if the return opportunity was not available. From both a business and a sustainability perspective, a consumer who orders two sizes or two different products to increase the hit rate, so to speak, might be more profitable and sustainable than the same consumer ordering one size/product at a time, returning the first one, exchanging the product and keeping the last one. In the first scenario, ordering two sizes/products, the resulting number of deliveries and returns is two, with a return rate of 50% on the item level. In the second scenario, the resulting number of deliveries and returns is three (one outgoing and one return and a second outgoing) and the return rate is 50%. Thus, avoidance should aim to prevent the unnecessary returns. Unnecessary returns therefore relate to other functional areas, such as marketing, logistics, production and purchasing, to mention a few. In a dyadic relationship like this, between the e-tailer and the consumer, if the return flow was not disconnected with poor visibility, the system could utilise information regarding buying behaviour and likely returns (more than one size/product) and increase the overall effectiveness. Thus, an earlier update of available-to-promise and better information regarding size, fit, colour and fabrics to present to buyers are necessary. Consumers in the fashion e-commerce business are likely to be the largest supplier (up to 50% in returns) of goods back into the distribution system. However, the information is not accessible in real time due to a paper-based returns system in which the information travels with the returned goods (Hjort, 2010).

Consumer returns are, as described, dependent on both product characteristics and consumers’ buying behaviour; thus, the avoidance activity needs interaction both with suppliers and with consumers. This necessitates internal integration whereby a cross-functional returns management team analyses returns information and provides feedback to the SC design team.

3.2 The e-commerce SC and consumers

The literature often describes supply chain design from a manufacturer’s perspective, trying to link the supply side with the demand side, often with a product focus (see Croxton et al., 2001; Christopher et al., 2006; Stavrulaki and Davis, 2010). In shifting market conditions, as in the global economy, the choice of supply chain strategies is critical when competing to serve customers (Gattorna, 2010). It is accepted in theory that the “one-size-fits-all” approach to supply chain design is no longer valid (Christopher et al., 2006; Gattorna, 2010; Ericsson, 2011; Godsell et al., 2011). In designing supply chains, Godsell et al. (2006) express a need to transfer the focus from the product to the end-customer and specifically to the end-customer’s buying behaviour. Traditionally, there are two different schools of thought in supply chain design (Godsell et al., 2011). The first school is the lean-agile supply chain design, which is product-driven. The second school of thought is that customer buying behaviour drives strategic alignment. Gattorna (2010, p. 3) describes SC alignment as aligning SC strategies to customer segments, for an review on alignment literature see Stavrulaki and Davis (2010).

Fisher explains in his early (1997) work that before organisations devise their SC they need to consider the nature of the demand for the products; functional products have more stable and predictable demand but the stability invites competition and often reduces the profit margin. Whilst innovative products, such as fashion and apparel, give customers additional reasons to buy these products and can enable greater profit
margins, they also create unpredictable demand. Christopher et al. (2011) build upon Fisher’s (1997) earlier work and explain the need for combining product characteristics and market considerations when designing supply chain capabilities and selecting supply chain pipelines. In the selection of pipeline types, there are eight theoretical types to choose from depending on whether the products are standard or special, the demand is stable or volatile and lastly whether the replenishment lead time is short or long (Christopher et al., 2006). According to Christopher et al. (2006), standard products tend to be more stable in demand with longer life cycles, whilst special products tend to be the opposite, i.e. with erratic demand and shorter life cycles. Therefore, there is a connection between demand predictability and product characteristics, which reduces the amount of theoretical pipeline types to four (Christopher et al., 2006, p. 282). Depending on the product demand and supply characteristics, Christopher addresses a lean or an agile approach, or a combination of the two, i.e. a leagile approach (see Christopher et al., 2006, p. 283). In e-commerce, the focus would naturally shift to the e-commerce organisation, which changes the focus from manufacturing towards the sourcing of and delivery of finished goods. However, as e-commerce organisations grow, they are likely to try to design and produce their own products and brands in search of greater margins, shifting the focus back towards manufacturing or at least a combination of sourcing and manufacturing. This exemplifies the need for at least two supply chains, and probably even more. In e-commerce, the critical focal point is to match the demand from consumers with an appropriate set-up of sourcing, final distribution and returns-handling activities. If demand variations for different products exist, it is probably useful to apply diverse sourcing strategies in order to match demand uncertainties with responsive supply strategies.

Two main approaches may be used to meet customers’ requirements: a standardised or “one-size-fits-all” approach, which includes opportunities for economies of scale, and logistics services customised to each individual customer. The latter increases customer satisfaction but is also more expensive. Differentiating logistics services for different customers requires a balance of customer satisfaction and related costs but is an important service in a competitive market (Rutten and van der Veeken, 1998). Customising logistics programmes to different customer segments improves both effectiveness and efficiency (Mentzer et al., 2001). The increased competition in the e-commerce business has accentuated the increased focus on speedy delivery and extended service offerings. Still, organisations, even in the highly competitive e-commerce market, utilise a “one-size-fits-all” strategy to create and deliver value to their consumers, thereby implicitly assuming that consumers’ demands and buying behaviour are homogeneous, and therefore that there is no profitable reason to differentiate delivery in terms of service.

Supply chains are omnipresent and complex (Gattorna, 2010), and e-commerce organisations exist in many supply chains or supply networks. As noted earlier, it is accepted that the “one-size-fits-all” approach to supply chain design is no longer valid, and the suggested number of parallel supply chains varies and is naturally context-dependent. It depends upon diverse variables such as demand uncertainties, product characteristics and replenishment lead times to mention a few. The complexity of the contemporary SC is either missed or attacked in the wrong way: missed due to managers being blind to their presence or because the complexity makes the SC invisible (Gattorna, 2010, p. 4). In the manufacturing and the retail business, the
complexity is often addressed with an operational sledgehammer to reduce the internal operational complexity (Gattorna, 2010). The results are standardising and reengineering processes designed to reduce complexity in the way organisations serve their customers. From a customer perspective, these enterprises do not become any easier to deal with (Gattorna, 2010). This is likely to be true in B2C online sales; Hjort (2010) found that in a case study performed with an organisation utilising a “one-size-fits-all” approach, consumers responded with a heterogeneous returns pattern, showing that younger customers returned, on average, a greater percentage (see Hjort and Larsson, 2009). Gattorna (2010) argues that in a typical supply chain three to four dominating customer buying behaviours exist that need to be understood in detail. Further, these dominating behaviours cover approximately 80% of the customers, and the same dominating patterns fit other markets as well. This understanding will come from first accepting that the time has come to rethink how we design and operate SCs and link organisations with their suppliers and customers (Gattorna, 2010). Gattorna (2010) expresses that we need to embrace a far more liberal view of SC configurations. Gattorna (2010) argues that the concept of dynamic alignment (DA) is living and not static and therefore aligns enterprises with the changing conditions that prevail today. The DA framework links the marketplace, strategy, internal culture and leadership styles (see Figure 12).

![Figure 12](http://johngattorna.com/gattorna-alignment.html) The elements of the dynamic alignment framework (Gattorna, 2010, p. 19)

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3 Figure 12 downloaded from [http://johngattorna.com/gattorna-alignment.html](http://johngattorna.com/gattorna-alignment.html) with permission to use from the author.
Gattorna (2010, p. 17) states that the DA framework presents an opportunity to design and operate supply chains that “stay abreast of customers and consumers as they too evolve over time”. Level one in the DA framework consist of the marketplace (see Figure 12). The key driver in the marketplace is the customers’ dominant buying behaviour for a typical product or service category in a specific marketplace. The essential starting point for the DA framework is a comprehensive understanding of customers’ fundamental needs and matching dominant buying behaviours.

Level two is the strategy element that links the internal cultural capabilities with the external marketplace, and level three is a set of aligned subcultures on top of enterprise-wide shared values or corporate cultures. These are crucial for the successful implementation of an operating strategy. Level four is the leadership style; successful organisations generally have a leadership style that is closely in touch with, and empathetic to, their customers and the prevailing market conditions (Gattorna, 2010, p. 26). Further, these leaders tend to formulate relevant strategies and shape cultural capabilities to underpin and drive the implementation of these strategies in their target marketplace.

Ericsson (2011) describes demand chain management (DCM) as a concept that is designed to fit the new global and competitive environment by explicitly focusing on the customer and aligning interorganisational processes accordingly. The purpose is to create a unique competence aimed at identifying and satisfying customer needs and wishes. One of the main ideas of DCM is to integrate key customers and suppliers into the process in order to improve and to reduce the lead time in product development and commercialisation. When product life times are reduced, products have to be developed and launched in a much shorter time in order to maintain and improve competitive power. This means that the necessity for cross-functional and interorganisational integration and cooperation increases.

Ericsson (2011) defines the fifth process, the DCM process, which aligns key parts of the other four processes in order to create an interdependent, partnership-based chain, i.e. the demand chain. The integration of these five processes is shown in Figure 13.

The operational sledgehammer Gattorna (2010) mentions is likely to be present in the e-commerce business as well. Even if some e-tailers are offering more than one delivery alternative, very few (if any) offer a more personalised delivery and/or returns solution or process. In a recent study, 68% of Swedish consumers who do not purchase
clothes online report that they always want to see/try on the clothes first before they shop online. Another 33% express that it is complicated to return the clothes if they do not fit (e-barometern, 2012). However, around half of the online consumers report having used the returns opportunity and 77% of them are quite pleased with the returns process (e-barometern, 2012).

Globalisation is one driver of the integration whereby increased competition drives shorter product life cycles and a broader variety of products. We have entered an era of supply chain competition (Christopher, 2005; Näslund and Hulthen, 2012) in which customers are more demanding and sophisticated than ever before. Autry (2005) describes the modern marketplace as hypercompetitive and firms as competing vigorously on the basis of customer service, allowing almost anything to be returned if it will benefit the customer relationship. Hypercompetition is described either as an intense form of rivalry and rapidly changing market or industry conditions or as a conceptual model for the strategic behaviour of firms and interorganisational relationships from a management point of view (Kotzab et al., 2009).

To become responsive and competitive in a hypercompetitive environment, such as the e-commerce business (author’s note), organisations can use differentiation strategies for their existing products and logistics services or markets (Kotzab et al., 2009). Alternatively, introducing new products/logistics services into existing or new markets will require deeper and more meaningful relationships within the firms’ SC according to Kotzab et al. (2009). According to Porter (1996), hypercompetition is a self-inflicted wound. When dealing with increased competition, one needs to understand the forces that drive the competition and how to use them strategically in favour of the own company (Porter, 2008). According to Porter (2008), the five forces that shape industry competition are the bargaining power of suppliers, threat of new entrants, threat of substitute products or services, bargaining power of buyers and rivalry among existing competitors. The low entry barriers in e-commerce business (Porter, 2001) lead to intense competition and, as presented in the introduction, the number of (new entrant) companies has increased faster than the increase in sales in the same period.

Christopher (2005, p. 45) argues that customers are more willing to accept substitutes nowadays and that it is harder to maintain a competitive edge through the product itself. Customer service can provide a distinction between a company and its competitors and returns management and the liberalisation of returns policies is one way of responding to competition. New entrants to an industry, such as the e-commerce business, bring new capacity and aim to gain market share and this puts pressure on prices and costs (Porter, 2008). Further, Porter argues that if there is a threat of entry, this holds down profitability, not whether the entry occurs. Existing rivalry can take different forms, price discounts, etcetera, and this rivalry puts further strain on profitability (Porter, 2008). The strength of rivalry in a business reflects both the intensity and the basis of competition; in e-commerce, service and specifically delivery and returns policies are central to attracting and to keeping customers. Porter argues that competition on dimensions other than price, such as on product features and support services, are less likely to erode profitability as they improve customer value and can support higher prices. Therefore, rivalry, according to Porter, can be a positive force and increase profitability in an industry if competitors aim to serve the different needs of different customer segments. This can also expand the business as such, as the needs of more customer groups are met. Porter (2008) argues that the
overall value can expand when firms collaborate with suppliers, whereby better coordination limits the unnecessary costs incurred in the supply chain.

Cooper et al. (1997) argue that “there is definitely a need for the integration of business processes in the supply chain that goes beyond logistics”. One argument is that there is a need to include external organisations and other functions in product development in order to reduce the time to market for new product introductions. Further, customer and consumer involvement is necessary and it should be apparent that logistics is never going to own the product development process or the customer. The same reasoning applies to returns and returns management. To become efficient and effective in the supply chain (see above, Christopher, 2005), we need to discuss returns management in a supply chain context, in which returns management is discussed as one of eight supply chain core business processes (see, Croxton et al., 2001; Rogers et al., 2002) see Figure 7 on page 25.

3.3 Strategic aspects of RM

In essence, strategy is choosing to perform activities differently and competitive strategy means choosing to perform a different set of activities to deliver a unique mix of value (Porter, 1996). Thus, a competitive strategy in e-commerce should focus on value creation rather than imitating competitors through benchmarking and by adopting a best practice philosophy. Value creation can be achieved by reducing the buyers’ cost or by raising the buyers’ performance (Amit and Zott, 2001). This applies to both products and services and value here is the difference between the perceived benefits (customers’ willingness to pay) and the economic costs (Peteraf and Barney, 2003). Creating value is the critical endeavour for all organisations (Peteraf and Barney, 2003). Porter (1996) argues that the competitive value of individual activities cannot be separated from the whole, thus the RM process and its four activities add costs and therefore affect the value created. Operational effectiveness (OE) includes (but is not limited to) efficiency and it refers to better utilisation of inputs, whereas strategic positioning refers to performing activities (ways) that are similar to or different from those of rivals (Porter, 1996).

Näslund and Hulthen (2012) define SCM integration and argue that academics state that organisations should embrace integration as it leads to increased efficiency and effectiveness. There is, however, little empirical evidence to support these claims and there is limited empirical research studying the integration beyond a dyadic level (Näslund and Hulthen, 2012, p. 497). Information technology is one important aspect and it works as both a driver of and a barrier to integration. There are different views on what to integrate (Näslund and Hulthen, 2012, p. 493), and Näslund and Hulthen summarise the most common recommendations, such as information sharing, integration of technologies/systems, processes and performance measures. New technologies increase the quality and speed of information sharing, and work as an enabler of inter-firm cooperation as well as supply chain design and external integration. There are many, rather general, recommendations on how to integrate the SC (Näslund and Hulthen, 2012) and they found no research that provides concrete empirical evidence of achieving the proposed benefits. So, it is not surprising to find very few articles regarding the integration of returns management (B2B) or the integration of consumer returns systems (B2C). Daugherty et al. (2002) discuss, in relation to B2B, the information support in reverse logistics and conclude that firms need to develop reverse logistics systems that rival traditional outbound channels in
terms of efficiency, cost effectiveness and competitiveness. Näslund and Hulthen (2012) present a framework of SCM integration from a focal firm perspective. The internal integration aspects are technical integration, information sharing, reward system process-oriented performance measures and standards. These are relevant to other areas of integration as well; they describe backward and forward integration in two formats, dyadic and triadic. The forward dyadic integration deals with SCM strategies, cooperative relationships and the external integration of logistics, marketing and operations-oriented processes. The triadic integration integrates the first-tier supplier, the focal company and the first-tier customer and has an SC-wide perspective, aligned incentives systems, supplier relationship management (SRM) and customer relationship management (CRM). Further, (Näslund and Hulthen, 2012) describe an extended integration of the entire SC, in which SCM culture, mapping and regular evaluation of SCs are crucial. The network integration deals with:

- Outsourcing
- Specialisation (logistical and technological differentiation)
- Analyse scope and intensity of information sharing and process integration among firms

The integrative mechanisms presented are integrated IS and inter-organisational processes, aligned strategic goals and consistent performance measures, to mention a few. The process orientation perspective was highlighted as a prerequisite for SC integration and organisations still battle to become process-oriented. Reducing the barriers to integration together with increasing the facilitators of integration can improve performance through increased service effectiveness and cost-efficiency (Richey et al., 2010). The respondents in the study (Näslund and Hulthen, 2012) comment that the systems (e.g. SAP and Oracle) in use are too functional and modular in nature and not process- or SC-oriented.

The new breed of ICT systems focuses more on supporting the processes than on the technology. The new systems are based on an architecture that allows the focal company to be flexible and agile. The shift from a traditional focus on functions to processes in SCM integration is supported by service-oriented architecture (SOA), as it is designed to mimic the flow of business processes and to integrate new applications (Bergh and Viaene, 2012). It aims to structure IT in a more flexible manner and it is an architectural style that attempts to bridge the gap between IT and business (Reldin and Sundling, 2007).

Coordinating processes and activities within SCM in e-commerce (especially RM, CRM and SRM) maximises the value recovery of returns, while still delivering value to the customer. This shifts the focus from today’s paper-intensive returns information flow to the use of advanced information and communication technology, such as SOA and event-driven architecture (EDA). SOA is an architecture that is platform agnostic and allows a process set-up that integrates, for instance, the order system, warehouse system, SRM and CRM systems (legacy or proprietary systems). EDA handles events and message streams in the processes. This is the logical placement for the business logic needed in the RM process to automate avoidance and gatekeeping activities. The possibility to combine streams and create new services that will add value to the process is of importance in returns management. The resource-based view (RBV) theory postulates that value creation can be achieved by the firm’s unique bundle of
resources and capabilities and by adding a complementary aspect such as SC integration (Amit and Zott, 2001). Peteraf and Barney (2003) define competitive advantage by stating that “an enterprise has a Competitive Advantage if it is able to create more economic value than the marginal (breakeven) competitor in its product market”. They describe the economic value as the difference between the perceived benefits gained by the purchasers of a good or service and the economic cost to the enterprise (see Figure 14).

![Figure 14 The prices allocated and the value (Peteraf and Barney, 2003, p. 314)](image)

Peteraf and Barney (2003) conclude the discussion regarding their definition of competitive advantage and economic value. Taken together, the two definitions are expressed in terms of the ability to create relatively more economic value. To create more value than its rivals, an enterprise must produce greater net benefits, through superior differentiation and/or lower costs. Thus, in a disconnected returns flow, activities are performed without any guarantee that any value is recovered per se, or where the perceived benefits (B) are, as seen from the consumer’s perspective, smaller than the economic cost (C), the net value created might be negative.

The ICT integration of the returns system assists the implementation of the RM activities both to reduce costs and to improve performance, thus increasing both efficiency and effectiveness. Adding other or newly developed applications, such as web registration of returns (Hjort, 2010), can be formulated as a set of services and business processes can call on these when needed (Bergh and Viaene, 2012). Paperless electronic counterparts are increasingly replacing manually hand-completed forms and this has given rise to business process management (BPM) (Ko, 2009). Bergh and Viaene (2012) argue that BPM and SOA offer an approach to unify business and IT. Zairi (1997) describes BPM as “a structured way to analyse and continually improve fundamental activities …”. However, Zairi (1997) also states that BPM has to be governed by a set of seven rules. One rule states that BPM has to be inspired by best practice to ensure that superior competitiveness is achieved. To be competitive, Porter (1996), on the other hand, argues that best practice is not sufficient because of its rapid diffusion.

From an SCM perspective,Gattorna (2010) argues for a more liberal and dynamic view of operating SCs. Ericsson (2011) defines four SC processes that are interconnected with a fifth process, the DCM process, and argues that too many SC processes hinder the SC integration. Godsell et al. (2006) argues that the focus in the design of SCs ought to be on end-customer buying behaviour. Jüttner et al. (2006)
define a new emerging business model, DCM, which builds on a close alignment between marketing and supply chain competencies. In this thesis, focusing on B2C e-commerce, the closeness to the consumer and the dyadic relation between the e-tailer and the consumer, the author acknowledges the focus on understanding the requirements and demands the e-commerce business needs to fulfil and what creates consumer returns. From a strategic management perspective, Porter’s (2008) five forces shed light on the competitive forces acting on an industry level. The RBV’s value creation perspective combines resources, capabilities and complementarities, whereby the emergence of virtual markets opens new sources of innovation (Amit and Zott, 2001). The business model innovation proposed by Amit and Zott (2001) somewhat summarises the SCM/DCM proposals byGattorna, Ericsson, Godsell and Jüttner et al. and the strategic management proposals in value creation. Amit and Zott (2001) propose that a business model is an important locus of innovation and a crucial source of value creation for the firm and its stakeholders. This may require a shift in strategic thinking towards more integrative, dynamic and entrepreneurial strategies (Amit and Zott, 2001, p. 516). This shift in strategic thinking is addressed in SC theories as well and this thesis complements the suggestions by adding RM as a strategic issue, especially in e-commerce. A business model describes the rationale behind how an organisation creates, delivers and captures customer value (Osterwalder and Pigneur, 2010). The business model, as defined by Osterwalder and Pigneur, contains nine building blocks, the seventh of which, key activities, describes what an organisation must do in order for the business model to work. For Dell (a PC manufacturer), SCM is one key activity (Osterwalder and Pigneur, 2010) and Dell is famous for the design of its business model. For designing a business model, Osterwalder and Pigneur (2010) describe six different techniques; one technique, based on consumer insight, is similar to proposals from Florin et al., Gattorna and Ericsson (Florin et al., 2007; Gattorna, 2010; Ericsson, 2011). When gaining consumer insights, the main challenge is to create a deep and useful picture of the consumers that can be used in designing the business model (Osterwalder and Pigneur, 2010).

### 3.4 How to gain consumer insights and understanding

To understand the target e-commerce consumers fully, it is necessary to understand their pre- and post-purchase behaviour. Post-purchase behaviour could be influenced by a variety of factors: some a result of the actual transaction, others product-related and others related to the consumer’s personal characteristics (Kang and Johnson, 2009). Gaining insights into why the purchase is conducted and how and when the product will be used is difficult but it can be asserted that mail order/e-commerce have closer relationships with their customers than traditional retail chains. Today’s consumer marketing requires different techniques and a deeper understanding of consumers’ implicit needs (Ericsson, 2011). However, identifying and meeting implicit and hidden needs raises the perceived value of the transaction.

Consumer expectations, requirements and demands and consequently their returns behaviour are likely to vary, between individuals, groups and over time. As seen in Figure 15, customers entering the mail order/e-commerce business are likely to respond differently when evaluating products, prices and services while screening catalogues/websites before ordering, or when evaluating the different steps or outcomes after ordering, i.e. information requirements, lead time (Hjort, 2010).
Therefore, today, consumer marketing requires a deeper understanding of the “whys”, “hows” and “whens” of buying behaviour and decision making regarding both buying and returning decisions.

![Figure 15 Consumer behaviour characteristics (Hjort, 2010)](image)

Consumer behaviour is much more erratic and unpredictable today than ever before and this limits traditional consumer research techniques. Traditional methods may uncover the “when” and “how” a consumer buys, but the “whys” of behaviour have been lacking in traditional consumer understanding (Florin et al., 2007).

The reasons for non-buying and non-usage are also important (Osterwalder and Pigneur, 2010). Communication with the consumer should lead to a comprehensive understanding of the consumer’s situation and consideration set (Florin et al., 2007) and the context in which decisions are made. Ulwick and Bettencourt (2008, p. 65) argue that “companies must shift their attention from the product and focus their requirement-gathering efforts on the execution of the job that the product or service is intended to perform”. Supporting the e-commerce business with a standardised return process focusing on value recovery will likely not support “getting the job done” for all consumers. In the contemporary market, the focus ought to be on understanding the motivations behind decisions. It requires an understanding of individual consumers rather than an overly simplistic image of the “average consumer”; there are no average consumers. Gattorna (2010, pp. 62–63) presents five different ways to perform the customer behavioural segmentation. These methods would be likely to fit the e-commerce business, although they are quite time-consuming. Often the literature presents business techniques developed for customers. In the rapidly evolving business-to-consumer (B2C) e-commerce, the fifth method, with which Gattorna (2010) creates consumer insights using point of sales (POS) data and uses sophisticated data mining techniques, could be used in e-commerce. The use of POS data or transactional data presents a possibility to follow consumers’ buying and returning behaviour but it offers no understanding regarding the “why” question. Ericsson (2011) reports that “consumer insight is best created by close relations with the consumer where not only quantitative, hard data but also qualitative, soft data are used.
as launching pads”. Once companies understand the task that customers are trying to accomplish or how they judge the successful execution of a specific job, Ulwick and Bettencourt (2008) state that different methods can be used to uncover consumer needs. It is the understanding of which inputs are needed, i.e. requirement statements and how they are structured and formatted, that matters and that are the key to innovation success.

In online sales, especially in fashion and apparel, the consumer returns flow travels between the consumer and the e-commerce organisation (see Figure 8 (customer, see Figure 7)) through a distribution system and this (dyad) is the focus area of both the research and the framework (see Figure 6). The next subsection goes on to describe the factors driving consumer returns in B2C.

3.5 Driving forces of consumer returns

Porter’s (2008) article on “the five forces that shape industry competition” explains what drives competition and profitability in an industry. It is vital to understand the driving forces that shape the e-commerce industry and as mentioned in section 3.2 there are several forces that affect the e-commerce industry. In this subsection of the frame of reference, the competition as such is seen as one force that influences the amount of consumer returns that are sent upstream. The other forces that are addressed and presented in a systems model are regulations and globalisation.

Even though legislation is not a strong driving force for a strategic perspective of returns (Rogers and Tibben-Lembke, 1999), the legislation within the EU regarding consumer protection online is a strong driver of returns policies. However, the interpretation of the directives and the implementation of the legislation within the EU differ. In Germany and Finland, the interpretation allows customers to return what
they ordered free of cost, i.e. distance sellers are not allowed to charge any return freight cost. Until recently, there were other differences in the interpretation as well; some EU countries allowed a 7-day return period, while others stipulated that the customer had 14 days after delivery during which they could return what they found unsuitable in some way. The barriers to a digital single market in the EU are well known (see EMOTA, 2009). EMOTA is the European trade organisation representing all aspects of distance selling, both online and offline. With its 21 member associations, EMOTA represents nearly 2,500 companies all across Europe (EMOTA, 2010). The main barriers to cross-border distance selling are of a regulatory and logistical nature. European differences, such as languages, currencies and consumer preference, also play a role. An EU action plan (EMOTA, 2009) aimed to create an online single market while strengthening and harmonising the consumers’ rights across Europe. The current EU rules on consumer rights are a result of four EU directives that set out certain minimum requirements. The member states have added rules over the years, making the EU consumer contract law a patchwork of 27 sets of differing rules (EU, 2011e). In February 2011, the Members of the European Parliament (MEP) approved changes to the draft law but decided to postpone their final position with a view to reaching an agreement with the Council. The new rules will stipulate a 14-day EU-wide withdrawal period for distance and off-premises sales (when the consumer cannot see the good before buying it), during which consumers may change their minds. If they regret the purchase, for whatever reason, they can send it back. When the price of the good is more than €40, the trader must pay the return postage. All expenses must be refunded to the consumer within 14 days after withdrawal (EU, 2011a).

In June 2011, MEPs and the Council provisionally agreed on an EU-wide right for consumers (EU, 2011b). This is a major step forward for consumer rights. MEPs sought to insert a rule that would have required traders to pay the return costs of any goods priced above €40, but this proved unacceptable to the Council.

Recently, the European Parliament accepted (EU, 2011d) a strengthening of consumers’ rights that will stipulate a 14-day EU-wide withdrawal period for distance and off-premises sales; the new directive will have to be implemented by the member states within two years (EU, 2011c).

Globalisation and the increasing competition between organisations or rather SCs to attract the end-user or consumer have resulted in shorter product life cycles; products are almost obsolete by the time they reach the marketplace. Thus, internal integration is no longer sufficient itself; to become the market leader, the supply chain must be integrated, RM included. As discussed in section 3.3, value creation can be achieved in numerous ways. RM and supply chain management can contribute through increased efficiency and effectiveness. Integrating the supply chain by information sharing and process alignment facilitates the synchronisation of supply chain parties. Synchronising could mean a shorter lead time, inventory reduction and lower cost, and thus increased value.

\[\text{In Germany, organisations are allowed to charge for the return freight if the returned item is valued below €40.}\]
The intensified globalisation involves more external organisations for the delivery of goods; these collaborative business processes (cBPs) are important because of the following (Ko, 2009):

1. The rise in the frequency of goods ordered
2. The need for fast information transfer
3. The need for quick decision making
4. The need to adapt to changing demand
5. A larger pool of international competitors
6. A shorter cycle time

Christopher (2005) states that there are multiple facets of customer service, ranging from on-time delivery to after-sales support. To achieve service excellence, a carefully thought-out service strategy is needed together with an appropriate delivery system and committed personnel. Customer service is a broad concept and varies between companies but can be divided into three elements:

- Pre-transaction elements
- Transaction elements
- Post-transaction elements

Pre-transaction elements are the written company statements or policies that are considered by potential customers. Transaction elements relate to service delivery reliability. Post-transaction elements relate to supporting activities of the purchased items and procedures for consumer return issues. In e-commerce, the pre-transaction elements include information (returns policy) regarding the returns process, which is a post-transaction element. Understanding what makes non-adopters hesitate to order online and test the returns process could assist the business to grow as quite a large portion of the adopters seem pleased with the process, as mentioned above. It appears that online businesses are counting clicks and improving the selling and delivery process but the returns process is far from fast or convenient. It seems that businesses have adopted agile thinking in the delivery process and lean thinking in the returns process. However, without separating the goods from the information and without the application of gatekeeping it is far from lean. It is quite clear that some groups of customers have different requirements and demands (Porter, 1996; Christopher, 2005; Gattorna, 2010). Porter (1996) describes what happened when Continental Lite tried to combine low cost and full service. The author believes that this is what has happened in online sales today. Organisations understand that online sales, especially fashion and apparel, need the ability to return to be able to sell; however, the focus on sales and growth and not profitability (Porter, 2001) has left the returns process behind. Online shopping is likely to result in more returned goods than store shopping; offering liberal returns policies with the possibility to return goods for any reason can be costly in terms of time and effort (Alreck et al., 2009).
3.6 Theoretical validity of the research questions

As mentioned in section 1.3, the purpose of the thesis is to:

Increase the understanding regarding how and why to apply and improve returns management in e-commerce.

The purpose led to three research questions presented in section 1.4, of which the first question addressed:

RQ 1: What causes consumer returns and what are the potential benefits from improving returns management in an organisation without a clear returns management strategy?

The lack of a returns management strategy in an e-commerce organisation would lead to missed opportunities to avoid and reduce the amount of consumer returns and therefore increased effects on the organisation and its customers. SC theories and theories on consumer behaviour are used in the theoretical frame of reference to describe consumer returns and how organisations benefit from SC integration and from further development of the conceptual framework of RM to achieve a better fit with the B2C context.

The second research question asked:

RQ 2: How can contemporary information technology enhance returns system performance and contribute to efficient and effective returns management?

The returns system performance in B2C rests heavily on SC integration, ICT, gatekeeping and avoidance. SC theories are used to describe the effects on the SC, organisations and the customer from a returns system that is disconnected (not integrated) and connected when applying new ICT system architecture. When connected, the application of SC theories, such as internal and external integration, globalisation and competition, assists the development of efficient and effective returns management.

The third research question addressed:

RQ 3: Based on the achieved understanding and results, what are the potential benefits of aligning returns management in the business/supply chain strategy?

SC theories and the RM framework often describe the effects on the SC from a focal firm (B2B) perspective. In e-commerce (B2C), the focal point will shift downwards toward the e-commerce organisation or even better the consumer. Understanding the effects on the SC and its stakeholders without an RM strategy, the potential benefits are described using SC theories shifting the foci toward the e-commerce organisation. The potential from strategically aligning RM regarding the three main forces driving returns is described theoretically in this frame of reference and presented in the system model together with the system model in Figure 17.
The theoretical validation of the research questions posed, addressing problems concerning consumer returns in e-commerce and improvements of RM that can be seen as part of an ever-changing reality, used different perspectives and theories for the development of RM research, i.e. part of SCM and logistics research as proposed by Nilsson and Gammelgaard (2012, p. 777).
4 Research design

This chapter describes the research design and the methodological framework used in the thesis followed by a discussion on the empirical data sources used and how the results were verified and validated.

The way in which this research was designed was affected by the three research questions addressed:

RQ 1: What causes consumer returns and what are the potential benefits from improving returns management in an organisation without a clear returns management strategy?

RQ 2: How can contemporary information technology enhance returns system performance and contribute to efficient and effective returns management?

RQ 3: Based on the achieved understanding and results, what are the potential benefits of aligning returns management in the business/supply chain strategy?

The three research questions addressed are clearly of an explorative and descriptive nature; however, altogether the combined answers and the results of the research conducted are used to explain the likely benefits and enhancement, i.e. stating answers to the question of “why” to proceed with returns management. Quite a few studies report rather anecdotal and aggregated data regarding average returns levels in different industries and reasons for returning different products or groups of products. These are not very useful as a basis for understanding why to pursue or improve returns management in an organisation or SC.

The effects on an organisation, in relation to RM and consumer returns, from globalisation, increased competition, changing legislation and the increase in consumer demands need to be researched over time when attempting to describe the effects and benefits from improving and developing RM. Therefore, a longitudinal case study would seem to be a natural research design for investigating contemporary behaviour and effects over time.

The research conducted followed the model of Kovács and Spens (2006), presented in Figure 18 below. The first group of “abductive” researchers saw abduction as a combination of systematised creativity in research to develop new knowledge (Kovács and Spens, 2005).
The initial step in the abductive approach is similar to that of the inductive approach, but differs in that the inductive approach ends with new knowledge without testing the results, whereas the author’s ambition here was to develop and test the hypotheses/propositions (H/P in Figure 18) ending in new knowledge.

The research performed prior to the licentiate thesis fits the more inductive part of the abductive approach, whereas the research performed post-licentiate might be described as the testing of propositions, thus creating new knowledge. However, the licentiate thesis is better seen as a broadening of the “prior theoretical knowledge” that guided the research into further real-life observations, i.e. empirical investigations performed using a case study and a real-life experiment. The longitudinal single-case study was complemented with an experiment to test and verify both the results from the study itself and the proposed EU regulation on the harmonisation of the consumer directive discussed in section 1.1 and section 3.5.

4.1 Research approach

History shows that observations are based on beliefs (Arbnor and Bjerke, 1997) – if we believe that the earth is round or flat, this belief will be likely to affect our statements concerning observations of the earth. Every researcher observes or studies phenomena with certain presumptions. Consciously or subconsciously, this affects our depiction of the phenomenon or problem; ultimately, our presumptions or background hypotheses (Arbnor and Bjerke, 1997) affect our choice of research design, as well as the methods and techniques used. It took quite a while for my research journey to progress to its current situation as regards my personal presumptions, and this is not due to a lack of understanding that people see things differently, including myself. It is interesting to think about what creates these personal lenses. When two people’s study of the same thing results in two different descriptions, objectivity becomes somewhat difficult to believe in. Paradigm is most certainly one of these lenses that affect what people (you and I) see, or how we explain or interpret what we see or discover. Positivists argue that there is an objective reality out there; the alternative or anti-positivistic side argues that there is no such thing as an objective reality. It is all created in people’s minds. The ontological assumptions based on the philosophy of science separate scientists into two sides: objectivist or subjectivist. This thesis belongs somewhere in between; the goal has never been an objective explanation of reality, or a subjective interpretation of it. The author has, to some extent, been creative when combining a
longitudinal single-case design and a real-life experiment. The author believes that data can be objective, but at the same time acknowledges that the analysis and the use of the same data can require an interpretation of its meaning and its usefulness. This was the case in the licentiate thesis, in which the author found that the returns level decreased if the delivery exceeded 9–12 delivery days. However, discussing the (“objective”) results with key informants presented me with a plausible explanation for this phenomenon. Thus, the research reported in the thesis has been thoroughly presented and discussed with representatives from the case organisation, representatives from other organisations and representatives from academia.

Ultimately, this research is likely to be affected by the author’s presumptions; however, to some extent, the knowledge of these presumptions has resulted in the constant revision of the research method during the research process. It has also made me more understanding of the necessity of describing the research conducted, so that people, scientists or not, who read, review, listen and finally judge, understand what the ultimate presumptions were (are). Scientists belonging to the social science group tend to fall somewhere in between the positivistic and the anti-positivistic paradigms (Hellström, 2007). The aim of the positivists is to explain, whereas that of the anti-positivists is to search for understanding. Either way, the author believe that both sides are struggling – the ultimate explanation and the perfect understanding of phenomena such as consumer returns are likely to be hard to find, depending especially on the phenomenon of interest. The greater the scope, the harder it is to explain, and perhaps even to understand. Studying social phenomena and social interaction, the quest for increased understanding is likely to be the more fruitful path. The author presume that a better understanding will help to explain how to work with and solve problems.

To carry out research in areas that could be characterised as “novel” – in which there is no or little previous knowledge to refer to – calls for an exploratory approach. The research carried out started as exploratory, to gain valuable insights into the area of consumer returns in distance sales, and it was reported in the licentiate thesis (see Hjort, 2010). After the licentiate thesis, the research questions were developed and the focus of the research turned more towards exploring, describing and understanding the effects from the external “forces” on an organisation in the highly competitive e-commerce business both described in the literature and addressed in the licentiate thesis. The author’s theoretical knowledge and understanding of both the phenomena and how to conduct research was developed during the licentiate thesis and affected the starting point of the research reported in this doctoral thesis.

Altogether the problem described in this thesis and the research questions addressed to explore and describe the phenomenon of returns management and e-commerce and its relation to the outer “forces” presented in Figure 16 depict a holistic approach, i.e. a systems approach. According to Arbnor and Bjerke (1997), there are three methodological approaches to use in business research: the analytical, systems and actors approaches. The analytical approach is closely related to positivistic research traditions in which an objective reality is accessible and causal relations are sought after, in order to explain and generalise the results and to predict future incidents (Gammelgaard, 2004). The researcher stays outside the research object in order not to affect the depicted reality.

A holistic approach often determines a systems approach, in which the world is understood in terms of its mutually dependent components, whereas the more
The positivistic approach favours a reductionist approach, in which the reality could be deconstructed into its parts (Gammelgaard, 2004). Following the systems approach, deconstructing the reality into its parts is ultimately meaningless; the researcher should work very closely to, and influence, the research object, and the main objective is to improve the system. This research followed a systems approach to logistics research, as Ekwall (2009) indicates to be an established tradition. The author, however, acknowledges the actors approach as being equally interesting, but given the research questions, purpose and scope, the systems approach was found to be the most suitable. The actors approach disregards the fact that there is an objective reality, and the reality is seen as a social construction. The idea is to understand and construct the reality from within, where the researcher is part of the reality.

Theory and research, or the link between them, denote the research approach undertaken as inductive or deductive. The inductive approach aims at developing theory out of empirical observations/findings. Deduction, however, aims at testing theories, and therefore theory is present prior to empirical observation. According to Bryman (2008, pp. 9), deductive theory represents the most common view of the nature of the relationship between theory and social research. The deductive researcher should develop or deduce hypotheses from what is known from previous research or theories. The hypothesis must then be tested or scrutinised in relation to empirical evidence that either supports or rejects the hypothesis.

The inductive method starts with observation and ends with new theory (Bryman, 2008, pp. 11), i.e. concluding general laws from individual cases and constructing theories using factual knowledge (Arbnor and Bjerke, 1997, pp. 92). The inductive and deductive approaches encountered massive criticism from opposing sides during the scientific development (Popper, 1959). The two sides, by using different research procedures, often represent two different research strategies, the quantitative and the qualitative. The quantitative side predominantly follows the deductive procedures, and emphasises quantification in both the collection and the analysis of data, following the natural scientific model in general and the positivistic approach in particular (Bryman, 2008, pp. 22). The qualitative side follows the inductive procedures, and has rejected the natural scientific norms, emphasising the way that individuals interpret their socially constructed, ever-shifting world. The author does not favour any particular strategy, instead emphasising that the problem and the research questions guided the research design and the data collection and analysis. The author acknowledge Jick’ (1979) suggestion, that the use of complementary methods, i.e. triangulation, is generally thought to lead to more valid results.

Logistics research is interdisciplinary, stems from many different scientific traditions and has been influenced by both economics and behaviour approaches (Kovács and Spens, 2005, p. 132), borrowing ideas from the disciplines of marketing, management and engineering. Logistics has been criticised for not having a history of theory development, and, being a relatively recent discipline, it is somewhat surprising that it follows the positivistic path in testing theories. Further, logistics research has historically followed the path of deduction and induction. The deductive reasoning with predominantly quantitative positivistic methods is most often represented in major logistics journals (Ellram, 1996), especially in the US (Näslund, 2002). The deductive research approach is more suitable for testing existing theories (Stentoft Arlbjorn and Halldorsson, 2002), not for creating new science, and therefore its usage and dominance in the relatively new field of logistics research is somewhat surprising.
Kovács and Spens (2005) argue that the development of new theories in logistics research calls for a discussion on abduction. Abductive reasoning combines the inductive and the deductive research procedures and emphasises the search for suitable theories for an empirical observation (Kovács and Spens, 2005, pp. 138). Dubois and Gadde (2002) present a similar approach called “systematic combining”. Systematic combining focuses more on the refinement of existing theories than on the development of new theories. A major difference between, on the one hand, traditional inductive and deductive research and, on the other hand, abductive and systematic combining is their focus on the framework. The latter’s framework is successively modified during the course of the research, which allows the borrowing of theories from other disciplines (Stock, 1997), also reducing the focus on reviewing all the necessary literature beforehand. This makes sense in a relatively new field of research such as logistics and SCM, especially the novel phenomenon of consumer returns in e-commerce.

### 4.1.1 Systems approach

The systems approach is the common approach in logistics research (Ekwall, 2009), but the theoretical system can be explained or defined in different ways. Arbnor and Bjerke (1997) distinguish between three possible areas when adopting the systems approach to a study:

- Systems analysis
- Systems construction
- Systems theory

Systems analysis is meant to create a model of the real system without changing it, and to describe the internal and external forces influencing it. In doing so, it has both a descriptive and an explanatory purpose (Arbnor and Bjerke, 1997). Systems construction includes the (potential) construction of a new system model; the new system can be the real system depicted using the systems analysis. The systems analysis and systems construction are parts of the development of new systems theory.

Within the systems approach, the model of a system is a reproduction of reality (Arbnor and Bjerke, 1997). A system can be either closed or open, the open system connecting with its surrounding environment. Studying the mail order/e-commerce system, and its returns system, it seems rational to follow the acknowledged path of using the systems approach. The main reasoning behind this decision is:

- Social systems are complex
- It is an open system
- Relations between systems components

By using the systems approach in logistics research, we assume that reality is arranged in such a way that the whole differs from the sum of its parts – synergies or relations between parts in the system are important and therefore should not be reduced to simplified models searching for causal relations only thus acknowledging the soft systems thinking (Checkland, 1995), in which the presence of human beings is seen as part of the system examined. Checkland defines the difference between the hard and the soft systems approaches; the approach that assumes the world to be systemic is hard; the approach that assumes that the process of enquiry can be systemic is soft.
4.2 Research process

All research starts with some knowledge about the problem; however, that knowledge might be more or less theoretical and/or empirical. The research presented in this thesis started with a thorough theoretical understanding resulting from the two first studies performed (see Figure 20) and the theory matching process performed and presented in Figure 3. However, the new observations and empirical investigations performed extended the theory matching process and the FoR presented in section 3.
This resulted in an expansion of the research framework to incorporate other SC theories, strategic management theories and theories on consumer behaviour. In order to apply avoidance later, we had to learn more about the “root causes” of returns. Following the abductive approach, from the exploratory results from the case study the author understood that returns are caused by a multitude of reasons. Which later were tested against the empirical data in the real-life experiment and through testing new hypotheses using the exported transactional data.

### 4.3 Research chronology

The research reported in this thesis started in 2010 and the research is strongly guided by the results from the licentiate thesis that started in 2007 and that were reported in December 2010. In the licentiate thesis, two studies were performed and they were reported in three individual conference papers presented at the yearly NOFOMA conferences in 2009 and 2010; for further guidance regarding these see section 2 and/or Hjort (2010).

![Figure 20 Research chronology](image)

The third study was strongly influenced by both the empirical findings from Studies 1 and 2 and the theory matching process described in Figure 18 and extended in Figure 19. Paper A reports the longitudinal case study (Study 3) and Paper B is a result of the same study; however, the framework was developed further and the study uses complementary data and theory. The fourth study is a direct result of insights from the third study and the proposed EU legislation, and thus was published in two different papers, Papers C and D, with slightly different purposes. In the concluding part of the third study, the theory matching process and insights from both Study 3 and Study 4 resulted in Paper E, again with an extended framework and complementary data.
4.4 Case design and selection

Case studies are suitable for holistic situations in real-life settings (Ellram, 1996, p. 99; Dubois and Gadde, 2002; Yin, 2009) and to formulate theories. A case study is not a linear process; it requires an integrated approach to handle the interrelatedness of the various elements in the research work, and therefore the abductive procedures support the case study design. Any preliminary analytical framework consists of the researcher's ultimate presumptions, and the framework is developed as the empirical observations emerge. The performed case study was followed by a real-life experiment in which propositions regarding the effects from neglecting RM within the case organisation were theorised, hypothesised and scrutinised in relation to the empirical results, thus performing an application testing ending with new knowledge.

A single-case study is appropriate when the case, in itself, is extreme or unique (Eisenhardt, 1989; Ellram, 1996). The RM literature expresses the need to prioritise returns or RM and that organisations have started to perform this; it also expresses what the effects are in organisations or supply chains when organisations do prioritise RM (Norek, 2002; Rogers et al., 2002; Stock et al., 2006; Mollenkopf et al., 2007a; Mollenkopf et al., 2007b; Frankel et al., 2010; Mollenkopf, 2010). However, the literature lacks clear suggestions regarding the why question, especially why organisations became aware of RM's role/importance and what triggered the awareness. The definition of RM (Rogers et al., 2002) is conceptual and therefore somewhat difficult to apply directly in an e-commerce context starting from consumers and continuing upstream. The conceptual definition addresses RM in an SCM context linking organisations through key business processes starting from a manufacturer downstream (towards customers (B2B)) and upstream (towards suppliers). In order to investigate and analyse the understanding or awareness of what returns and RM mean to e-commerce organisations, an in-depth case study research design was chosen to start the research. As the literature lacks detailed information regarding why organisations pursue and start to implement RM and what triggers a change, a longitudinal case study design was chosen to extend the existent knowledge and theories and to complement the RM framework and therefore the single-case design is valid (Eisenhardt and Graebner, 2007; Yin, 2009).

The case selection was influenced by the research performed and the knowledge created and reported in the licentiate thesis. Problems resulting from performing research in a large organisation that was functionally oriented with clear boundaries (silos) prevented the author from creating an overarching understanding and discussions of the effects caused by consumer returns. Further, the case organisation was not experiencing the returns problems and returns levels reported in the literature (see Table 1). The results reported in the licentiate thesis indicate that returns levels were higher in e-commerce than in both mail order and phone order. Also, younger customers returned a greater share of what they ordered and the results indicate that returns levels were not independent of delivery time.

Before the research started, the author attended a meeting with the OM to discuss the organisation's view of returns and RM in relation to my research ambitions and purpose. Further, discussions were held regarding the organisation’s interest in a joint research project and its willingness to support a joint research project with transactional data and by participating in interviews. The selection of the case organisation, nelly.com, was therefore a theoretical sampling based on its fit with the
purpose of the research and the research questions addressed. The first discussions revealed that the problems experienced in the research performed and reported in the licentiate thesis could be avoided. The OM had both a deep and a broad understanding of the organisation and its problems regarding RM on both a strategic and an operational level.

4.4.1 Unit of analysis

The case organisation, nelly.com, was the unit analysed via holistic case design. Even though we studied consumer behaviour, the analysis was from the organisation’s perspective, measuring the effects, consequences and results in the case organisation.

4.4.2 Data sources

The data used in the two studies can be categorised as qualitative and quantitative. The quantitative data used were exported data from the case organisation’s ERP system.

Interviews can range from completely structured to completely unstructured (Lee, 1999). The case was selected in line with the results and problems that were encountered in the two studies performed and reported in the licentiate thesis (see section 4.4). Thus, the author’s insights influenced the research performed and the design of the case study and the data collection. The initial design of the third study was based on two phases, of which the first phase intended to be exploratory and theory generating with interviews as the primary data collection method. This was learning from the licentiate thesis; as a result of the lack of theory generating in the initial part of the study, the research ended with merely explorative and descriptive results. The learning included a better understanding of the value of a more reflexive study design. The second phase intended to be confirmatory regarding the results and emerging theory from phase one. The main data to collect were secondary data (transactional) from the case organisation’s ERP system.

The main interviews performed during both studies were informal conversational interviews, i.e. semi-structured, with the company’s operations manager, about the results, probing additional meaning (Lee, 1999). The interviews were digitally recorded and held in Swedish, the interviews were transcribed verbatim and after the analysis, the results were translated into English. An emerging theory was presented in phase one based on the story told and quotations from key informants (Eisenhardt and Graebner, 2007). The emerging theory here is seen as a plausible explanation for the observed regularities or patterns (Bryman, 2008). The emerging theory was developed and analysed with the use of the extended framework presented in section 0. The second phase aimed at describing and quantitatively measuring the returns flow and comparing the quantitative results with the results from phase one, thus continuing the emerging theory based on more empirical evidence. The second phase resulted in a company presentation in which the results from phase two were highlighted and contrasted with the theories developed in phase one. During the presentation, conversations started around concrete actions to take (trigger) based on the view of the OM regarding the results from phases one and two. After the second phase, we decided together to extend the research project over time and planned a third phase. This shows that the three phases were intertwined. The analysis performed on the qualitative data is best described as following ad hoc methods (Lee, 1999), using tactics such as noting patterns and themes, seeing plausibility, counting, comparing and
contrasting and theory building. The use of multiple techniques and data is highly advised in organisational research (Jick, 1979; Lee, 1999; Flick, 2009).

These conversational interviews continued throughout the studies, and the author visited the company on numerous occasions during the research. Some visits were short and sometimes even unannounced and others were planned well in advance and lasted for several hours. During the study, conversational interviews were also held with key informants from different functional areas from the case organisation, i.e. assortment, customer service and logistics. Informants can be utilised during quantitative research (Jick, 1979). The interviews held were also conducted to steer both studies and to discuss the findings during the studies. The data sources used in the two studies are presented in Table 6.

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<tbody>
<tr>
<td>Interviews</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Documentation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transactional data</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

The transactional data contained all the order and returns data covering two years: 2008 and 2009. The data sets accounted for all the orders (deliveries and returns) for the organisation’s Danish, Finish, Norwegian and Swedish customers, i.e. no sampling (see Table 7).

<table>
<thead>
<tr>
<th>2008–2009</th>
<th></th>
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<tbody>
<tr>
<td>Number of customers</td>
<td>256,236</td>
</tr>
<tr>
<td>Number of orders</td>
<td>502,429</td>
</tr>
<tr>
<td>Delivered units</td>
<td>1,272,982</td>
</tr>
<tr>
<td>Returned units</td>
<td>225,566</td>
</tr>
</tbody>
</table>

This fourth study was designed as a randomised controlled experiment with a random sample strategy. Among the 192,482 Swedish customers who had placed an order at nelly.com during the last 12 months and who would receive the quarterly nelly.com e-newsletter in November 2010, 4,000 customers were randomly selected and allocated to 4 groups (A, B, C and D), with 1,000 customers in each group. The required sample size for a one-way ANOVA was found to be 1,096 orders for a small (26) effect size of $f = 0.1$, an alpha value of 0.05, a beta value of 0.20 (power = 0.80) and 4 groups of equal size; these data indicate that 274 orders were placed per group. Based on past experience, the ratio between the number of orders and the number of sent newsletters was assumed to range from 25% to 30%. Thus, 1,000 newsletters were sent to each group.
The respondents were informed in the newsletter that they had been randomly selected to participate in a study concerning the company’s delivery and returns conditions and that the study was being performed in cooperation with researchers at the regional university. The letter explicitly noted that the study participants only needed to use the website as usual for shopping during the experiment. Because this study was a field experiment in which the subjects were not asked to deviate from their normal behaviour, consent was implied (Zikmund and Babin, 2007). The case organisation anonymised all the data before providing them to us. Because all customers are required to identify themselves with log-in information at the nelly.com website during the check-out process, we were able to ensure that each participant was exposed to the correct delivery and returns policies. In Table 8, the four experimental groups (A to D) and their respective returns and delivery conditions together with customer and order statistics are presented.

Table 8 The four experimental groups (A–D) and statistics regarding customers and orders

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free returns</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free delivery</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of unique customers</td>
<td>278</td>
<td>240</td>
<td>263</td>
<td>249</td>
</tr>
<tr>
<td>Total number of orders</td>
<td>520</td>
<td>447</td>
<td>489</td>
<td>453</td>
</tr>
</tbody>
</table>

Holland (1986) identifies several criteria for making causal inferences, which taken together essentially rule out any other study design but the experimental one. The key criterion in this matter is the researcher’s ability to rule out any alternative explanation for an observed relationship between a possible cause and an effect. This is generally outside the control of a researcher who passively observes a process or investigates customers’ past experience, perceptions and opinions, in contrast to a randomised controlled experiment.

During the studies, the author performed direct observations on-site, visiting different departments such as logistics, marketing and purchasing. To gain a better understanding of the e-commerce business and the case organisation, we studied both the warehouse and the returns handling. Further, to understand the mail order/e-commerce better, the author purchased and returned goods (participant observation) from several organisations. This continued throughout the research in order to learn more about the business as such, follow the development and compare performances and processes.

The exported data from the case organisation contained returns codes, given by the returners when returning. The data are questionable since it is possible that the codes do not represent the actual reasons for returning. It is possible that some returners even try to defraud the case organisation – blaming it in order to avoid return freight cost. However, the data represent all the returning customers for a long time period and, therefore, the dependability should be fairly high. The third study resulted in three papers, using the same exported data viewed from more than one angle. Even using different frameworks, and reaching the same conclusion regarding consumer behaviour causing returns, it further strengthens the data and their credibility. The
results derived from the data in the conducted research are context-dependent, and are not to be generalised directly to other settings. Parts of the findings and the conclusions, however, should be able to fit into similar settings within the e-commerce context, and this will be discussed in later chapters.

4.5 Research quality

Four tests are commonly used to establish the quality of empirical social research, according to Yin (2009). Case studies are one form of empirical social research, and therefore the tests are applicable to test the research quality of the case studies. According to Yin, it is important to utilise the different tests, using different tactics in different phases, when performing case study research.

Table 9 Four tests for evaluating the quality of case study research (Yin, 2009)

<table>
<thead>
<tr>
<th>TESTS</th>
<th>Case study tactic</th>
<th>Phase of research in which tactic occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct validity</td>
<td>🌟 use multiple sources of evidence ⚫ establish chain of evidence ⚫ have key informants review draft case study report</td>
<td>data collection data collection composition</td>
</tr>
<tr>
<td>Internal validity</td>
<td>🌟 do pattern matching ⚫ do explanation building ⚫ address rival explanations ⚫ use logic models</td>
<td>data analysis data analysis data analysis data analysis</td>
</tr>
<tr>
<td>External validity</td>
<td>🌟 use theory in single-case studies ⚫ use replication logic in multiple case-studies</td>
<td>research design research design</td>
</tr>
<tr>
<td>Reliability</td>
<td>🌟 use case study protocol ⚫ develop case study database</td>
<td>data collection data collection</td>
</tr>
</tbody>
</table>

The first test is construct validity, which is used to test whether the data used are free from bias. To achieve construct validity, we used exported transactional data and consumer response data (returns codes) collected when returning. The transactional data as such represent the “behaviour” analysed, i.e. returning behaviour, time and levels. Both to validate the findings and to understand the exported data correctly, key informants were used. The findings and results were reported orally, in writing and through presentations at the case organisation.

The second test, internal validity, is not relevant to the performed research as it is used to find causal relationships in explanatory studies, not in exploratory or descriptive ones (Yin, 2009). The authors consider the experiment performed and the inferred causality as exploratory and descriptive and rival explanations are discussed.

The third test, external reliability, judges whether the results from the performed research can be generalised beyond the immediate case study. Case studies are not performed using a sampling technique and statistical generalisation; Yin, however, argues that analytical generalisation can be used, with which the researcher tries to generalise a particular set of results to a broader theory.
The fourth test is reliability, which tests whether the research results can be repeated by another researcher/investigator and whether the findings and conclusions match. All the data, material and results are described in a case database and therefore it is possible to analyse and replicate them. However, even though the data would appear the same using the same database, the findings and conclusion might vary, as social science does not rely on a static world in which predictable natural laws prevail. How one performs and judges research results depends on one’s presumptions (Arbnor and Bjerke, 1997) and the possibility to repeat social science investigations using multiple data sources including key informants does not make much sense. The world is constantly changing and so are we, and as such the research partly analyses the effects of these changes regarding consumer returns and RM on an organisation. Therefore, repeating the same research would be very interesting but not to verify the results – more to measure the speed of change.

The OM and author participated in a logistics conference and a RL conference, where the first two phases of the longitudinal research were presented and discussed. The feedback to the case organisation during and after the research and discussions held throughout the research project should be seen as both a validating and a reliability check. Another way of validation is the actual use and implementation of the research results within the case organisation.
5 Summary of appended papers

This chapter presents the relation between the three research questions addressed in the thesis and the papers produced. The authors of the papers are presented together with each author’s contribution to the papers written, followed by an explanation of the relations between Papers A to E. Thereafter, each paper is summarised, expressing its purpose, overview and main findings.

<table>
<thead>
<tr>
<th>Research question</th>
<th>Paper</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>X</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>x</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>X</td>
<td></td>
<td>x</td>
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<td></td>
<td>D</td>
<td>X</td>
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<tr>
<td></td>
<td>E</td>
<td>X</td>
<td>x</td>
<td>X</td>
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</table>

The authors’ contribution is presented in Table 11. The author of this thesis was responsible for the ideas behind each study and was the first (marked with a capital X) or main author for four of the five papers appended. The co-authors’ contributions are mainly within their respective area of expertise, i.e. outside RM. The co-author and Associate Professor Björn Lantz contributed with performing the quantitative analysis in Papers C, D and E as this is within his area of expertise as a statistician, he was also the main author for paper C.

<table>
<thead>
<tr>
<th>Paper</th>
<th>First author</th>
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5.1 Relationships between the appended papers

This thesis enlightens the issue of RM in e-commerce, specifically exploring the effects of not managing returns and the potential benefits when applying RM. The links or relationships between the five appended papers are presented in Figure 21.

Paper A is therefore the explorer and describer of the effects on the case organisation when partly neglecting RM. It highlights certain aspects caused by the increased competition and suggestions from the EU to harmonise the consumer directive and to force businesses to accept returns without any returns postage.

Paper B follows up on the effect of the uncontrolled returns flow raised in Paper A, in which gatekeeping and avoidance were found to be non-existent. The purpose is directly related to the findings in Paper A; however, it addresses certain gaps in the literature regarding returns information systems and propositions for future research raised by Rogers et al. (2002).

The results from the fourth study are presented in Papers C and D and their purpose is to link a behaviour from the case organisation’s side, whereby it adjusts its service policies to align with both their competitors and the proposed changes to the regulations regarding the consumer protection and the creation of cross-border trade in the EU.

The fifth and final paper addresses the issues arising in Paper A regarding the proper SC design in the e-commerce business. The purpose is also relevant to the outcome and the results of the fourth study reported in Papers C and D.

![Figure 21 Linking the appended Papers A to E and the research model used in the thesis](image-url)

The placement of the coloured oval for the appended papers indicates the foci within the model. Paper A focuses on the e-commerce organisation and the effects created from the direct (solid line) regulatory force and the two indirect (dashed line) forces from competition and globalisation. Paper B focuses on the e-commerce, the consumer
and the distributor in between them and the related returns flow and characteristics in the dashed box in the return arrow. Papers C and D use a broader focus and relate consumers’ buying and returning behaviour to characteristics in both dashed boxes, i.e. downstream and upstream. Lastly, Paper E focuses on RM and SC design regarding how, if and why to align RM with the SC strategy and whether customers behave in a uniform manner when delivering a “one-size-fits-all strategy” regarding the delivery and returns service.

5.2 Paper A – Aligning returns management with supply chain strategy: a fashion e-commerce case

Introduction

Returns management (RM) has been defined as one of eight supply chain management (SCM) processes (cf. Croxton et al., 2001; Rogers et al., 2002). RM focuses on the returns process in the supply chain and effective RM can be quite complex due to its boundary spanning nature. Mollenkopf et al. (2007a) argue that effective management is important because returns can erode profitability. What does management in this respect mean and how do we perform effective management of returns within a supply chain (SC) context? Most of the RM literature addresses RM within the business-to-business (B2B) context (cf. Rogers et al., 2002) and the suggestions of the RM processes and sub-processes or even other process interfaces within SCM seem to address quite infrequent and relatively high-value returns flows between intermediaries, balancing the acceptance of returns against the possible loss of customer loyalty. The management of B2B returns is quite far from the unpredictable, frequent, low-value consumer returns flow, especially in the fast-growing e-commerce business. How should these returns be managed cross-functionally or even across the supply chain both to create end-customer value and to hinder the erosion of profitability?

Purpose and overview

The main purpose of this paper is to increase understanding and contribute to theory development regarding RM in general, and its alignment in the supply chain strategy specifically. How do we create a better understanding of returns management and how do we raise the priority to a strategic position in the organisations and the SC? The decision to/not to incorporate RM might be based on vague or evidential ideas about returns and their contribution to revenue and profitability. Therefore, this paper investigates how a fast-growing e-commerce organisation operating in northern Europe prioritised RM through analysing its awareness/understanding of consumer returns and RM and analysing what, when and why returns were arriving. The awareness/understanding was discussed in relation to its strategic positioning of RM. Further, to understand what triggers a more strategic positioning of the RM process, we studied the case organisation during its journey from being quite unaware of the impact of its returns to a position where it started to align RM strategically and plan for the implementation of a new RM process with a more proactive perspective. This research addresses the gap in the literature regarding the use of empirical data to create an understanding of how to manage fashion e-commerce returns flows. The next section of the paper presents the theoretical framework that supports the analysis performed and the development of the proposed framework for creating an understanding.
Research design

The research design consists of three intertwined phases. The first explorative phase aimed at identifying the priority, through analysing the case organisation’s awareness and understanding of consumer returns in general and RM in particular. This was achieved through on-site visits, conversational interviews and phone and e-mail conversations, mostly with the operations manager (OM) and the customer service manager. Three interviews (one in each phase) were digitally recorded and held in Swedish; the interviews were transcribed verbatim, and after the analysis the results were translated into English, and the story developed from phase 1 guided phase 2. Qualitative research has its place in guiding more evidence-based research, suggesting hypotheses and augmenting other, often quantitative, studies (Pfeffer and Sutton, 2006, p. 67). The results from the interviews in phase 1 are presented as narratives together with five clear statements that were analysed ad hoc (Lee, 1998). The five statements were contrasted with and analysed against the transactional data in phase 2. An emerging theory is presented in each phase, based on the story told and statements from key informants (Eisenhardt and Graebner, 2007). Transactional sales and returns data covering a two-year period were exported from the case organisation’s ERP system. The data contained all customers’ transactional data (orders and returns) from all four markets, i.e. no sampling. The second phase aimed at describing and measuring the returns flow and comparing the quantitative results with the results from phase one, thus continuing the emerging theory based on more empirical evidence. The second phase ended in a company presentation, in which the results from phase 2 were highlighted and described with the framework of SCM and RM. During the presentation, conversations started around concrete actions to take (trigger) based on the view of the OM regarding the results from phases one and two, and this shows that the three phases were intertwined (see Figure 22).

![Figure 22 The study and the three phases](image-url)
The operationalisation of phase 2 from phase 1 was performed through connecting measurable statements regarding the case organisation’s understanding, taken from the interviews carried out with the OM. Statements (subjective) could be transferred to measurable (objective) results from the quantitative data used in phase 2. These are described as awareness in Figure 22, marked with a red-coloured square. The awareness is analysed in two steps, between phase 1 and phase 2 and between phase 2 and phase 3.

In the third phase, the discussion and statements regarding the strategic position in phase 1 was evaluated with discussions and statements regarding the level of strategic positioning. This is presented in Figure 22 with the blue-coloured dotted square marking the strategic position. This evaluation is also discussed regarding the comparison of the awareness presented in phase 1, relative to the awareness in phase 3.

**Main findings and conclusions**

Anecdotal evidence presented in previous research, such as the average returns rates for different industries, discussions regarding the relative importance of RM, et cetera, are difficult to relate to and use as evidence for starting to implement or work with RM strategically. The results from the three intertwined phases in the longitudinal study are summarised and presented in Table 12.

| Table 12 The priority, awareness and understanding of returns in the three phases |
|---|---|---|
| **Priority** | Phase 1 | Phase 2 | Phase 3 |
| | The low priority level of RM is related to the rapid growth and it is a trade-off from focusing on selling and growing. | Not analysed in phase 2 | The priority level has increased and there is a written returns strategy in place. The formation of a returns management group is initiated with both ongoing and future returns projects. |
| **Awareness** | The low priority level has resulted in a lack of systems and processes to follow up on and analyse consumer returns and RM. Therefore, the awareness is low. | The lack of awareness of the distribution of returns reasons, seen over products, product groups and markets, was described. The results described also constituted evidence of the organisation's lack of awareness of the strategic importance of RM. | The overall awareness has increased and the organisation has started to work with returns projects and is trying out and experimenting with payment options, returns policies, et cetera, to learn what drives returns. |
| **Understanding of: what, when and why** | The lack of systems and processes to analyse consumer returns has led to a vague notion of why (return reasons) | The low understanding of the distribution of the returns reasons, i.e. why products were returned, led to | The case organisation has developed routines to gather returns information in order to have more evidence of what |
returns are arriving. However, what and when is not known until the returns arrive as the information travels with the returning goods.

missed opportunities to work proactively with and try to avoid (unnecessary) future returns. Further, the lack of a gatekeeping process (what, when and why) allowed unwanted returns to enter the system.

causes returns and how returns rates vary by product and market. The developed and launched web registration enables better control of what, when and why returns are incoming.

Emerging theory: The overall low focus and priority level was a deliberate trade-off based on a vague notion of RM’s relative unimportance to the organisation and the e-commerce business as such.

The strategic trade-off, focusing on sales and somewhat ignoring the potential of RM, was deliberate. However, empirical data from phase two reported the relatively low awareness and understanding of consumer returns and its non-uniform patterns. This initiated new awareness within the organisation.

Obtaining more and better evidence of returns using transactional data creates a better understanding of, and the organisation becomes aware of, the strategic importance of RM to the organisation and its customers.

The relatively low level of awareness of consumer returns and RM, as presented from phase 1, was a direct result of the focus on selling and growing and strategically down prioritising RM. There is likely to be a relation between the level of awareness, the understanding and the priority. The research design in the study performed, in which the level of awareness was increased through the analysis performed in phase 2, increased the understanding of the importance of consumer returns and RM to the case organisation, which in turn changed the priority of RM. The strategic work with RM, performed between phase 2 and phase 3, is definitely a sign of increased awareness and understanding. In a rapidly evolving business such as fashion e-commerce, it is understandable that what has previously been described as a nuisance and the negative side of doing business is down prioritised, especially when an organisation is growing at such a rate as the case organisation, nelly.com. However, it became obvious to the case organisation that its customers’ buying behaviour is not uniform and that the returns process in itself probably means different things to the respective customer groups.

The research reported fits the ideas behind the dynamic alignment framework; it is quite clear that the two initial phases have increased the awareness of the importance of RM and the understanding of how customers behave regarding buying and returning. That also triggered a more proactive approach towards consumer returns and RM. We have presented results of varying kinds of buying behaviour that need more research in order to understand why customers behave differently, and how and if they need a more differentiated supply of services, due to varying customer values and demands as presented by Gattorna (2010). The reported research has initiated an
alignment process at nelly.com, with the use of transactional data encouraging and starting more evidence-based management of consumer returns. The process will need to continue to align, as customer behaviour is likely to continue to change due to increased competition, et cetera. The case organisation and the e-commerce business will likely try their best to be competitive, and change their policies and processes.

The reported research starts to fill the literature gap regarding why RM and consumer returns are strategically important to the fashion e-commerce business. We have presented empirical evidence in phase 2 that increased the awareness of this importance and triggered a more proactive and strategic approach towards RM. This new understanding has also started work to align strategies dynamically with customers’ varying behaviour, which ultimately indicates heterogeneous demands and values. This awareness and understanding was quite far from the aggregated returns rates both reported by the literature and in use at the case company at the start of the research.

5.3 Paper B – Improved returns information system to facilitate gatekeeping and returns avoidance

Introduction

Returns are inherent in the business model of e-commerce due to the customer’s inability to test and evaluate products, services or new suppliers prior to ordering. The main purpose of any returns system is to recapture value from whatever is sent backwards, be it products or packaging material, from any position in the supply/demand chain.

Most organisations still see returns as a nuisance (Stock et al., 2002), especially commercial returns (Blackburn et al., 2004). According to Autry (2005), firms often accept anything that a customer wants to return regardless of the reason for return or condition, if they perceive that it will benefit their relationship with the customer. Accepting any return into the system without knowing the reason or the condition of the individual item does not guarantee value recovery, as a high proportion of the returns system costs relate to transportation and handling.

Purpose and overview

Consumer returns within the e-commerce business are traditionally managed without any knowledge about the state of or the reasons behind incoming returns, due to the inability to separate the information flow from the goods flow. This paper aims to identify and describe the supply chain needs for a returns information system and to develop a framework that facilitates gatekeeping and returns avoidance.

This paper starts with a brief review of the literature on returns avoidance and gatekeeping within an RM framework, complemented by a brief summary of information communication technology (ICT) focusing on service-oriented architecture (SOA) and event-driven architecture (EDA). Thereafter, it continues with a presentation of the research methodology used. This is followed by findings from the single-case study in which the returns system is investigated and contrasted against the framework of RM, focusing on returns avoidance and gatekeeping. It concludes with a discussion in which the case findings are analysed and ends with conclusions and future research.
Methodology

A single-case study was performed using nelly.com as the case organisation. Case studies are suitable for in-depth studies of real-life phenomena (Yin, 2009) with clear boundaries, such as organisations (Ellram, 1996). A single-case study is appropriate when the case in itself is extreme or unique (Eisenhardt, 1989; Ellram, 1996). The case company was selected mainly due to its fit with the aim and the overall research ambition, together with its market position and innovative and flexible leadership, which altogether created a dynamic research environment. Further, no prior studies have been conducted in which the requirements of a contemporary returns information system are presented supporting returns avoidance and gatekeeping together with a quantitative analysis, making the case unique and justifying a single case.

Main findings and conclusions

The paper shows that the proposed returns information system (RIS) framework could increase both the efficiency and the effectiveness of the returns process through the ability to separate information and goods flows and ultimately steer the returns flow to maximise value recovery and to avoid unwanted and unnecessary returns. Separating the information flow and the goods flow facilitates a downstream gatekeeping activity governed by rules to safeguard the returns system from unwanted returns. Unwanted returns are those for which value cannot be recaptured, i.e. low-value items, defective products or late returns outside the stipulated returns allowance. The proposed RIS framework also facilitates the implementation of avoidance whereby the use of real-time information could be used to avoid returns. In the present paper-based returns the information system contains vital information about warehouse issues, such as “wrong item” is delivered, i.e. goods in the wrong place are delayed with the redistribution time. Altogether, approximately 7% of all returns were only adding cost, i.e. no value recovery, as they moved upstream towards the warehouse.

5.4 Paper C – Real e-customer behavioural responses to free delivery and free returns

Introduction

The behaviour of e-commerce consumers has been receiving increasing attention from researchers (López-Bonilla and López-Bonilla, 2008; Goel and Prokopec, 2009; Bae and Lee, 2011; Ulbrich et al., 2011; Chen and Hu, 2012). This paper focuses on one particular behavioural aspect, namely how e-customers respond to lenient delivery and returns policies. The degree of leniency in e-commerce has increased during the last decade, primarily owing to increased competition (Autry, 2005) and new legislation (EU, 2011a). A lenient returns policy may include a longer period of time during which a product may be returned after purchase, a promise that a return will not be questioned, cash rather than store credit, or the option to return a sale item (Wood, 2001). For “e-tailers”, the degree of leniency can be viewed as a problem of optimisation (Davis et al., 1998). A seller must balance the benefits of a more lenient policy against the costs (Padmanabhan and Png, 1995). The dilemma is that buyers clearly prefer sellers who offer more lenient policies (all things being equal), whereas lenient policies are costly to operate and vulnerable to consumer abuse. There is no simple and generalisable solution to this problem (Wood, 2001). Furthermore, such a solution would require valid information regarding how e-customers actually respond to different types of leniency.
Management can adjust fewer variables on the delivery side than on the return side. In e-commerce, one leniency variable that exists for both deliveries and returns is whether customers pay for shipping or the company subsidies it entirely. Basic price theory suggests that if a service is free, it will generally have a higher demand than if it were not free. If this theory holds, then free deliveries should correspond to higher sales, and free returns should correspond to both higher sales and increased returns.

**Purpose and overview**

The present study aimed to explore the influence of free delivery and free returns on the purchasing and returns behaviour of real e-customers in the marketplace instead of on the behaviour of students in laboratory settings. To accomplish this goal, we conducted the study as a fully randomised and controlled experiment in cooperation with nelly.com, a Nordic e-commerce site that specialises in fashion and beauty.

**Methodology**

This study was designed as a randomised controlled experiment with a random sample strategy. Among the 192,482 Swedish customers who had placed an order at nelly.com during the last 12 months and received the quarterly nelly.com e-newsletter in November 2010, we allocated via computer 4,000 customers, selected at random by a nelly.com manager (using a computerised process), to 4 groups (A, B, C and D) of 1,000 people each. The randomisation process was conducted in 2 stages to ensure that no systematic sampling bias occurred.

All the newsletters were identical (see Appendix in paper C) except for the delivery and returns conditions: Group A was offered free delivery and free returns, group B was offered free returns only, group C was offered free delivery only and group D was the experimental control group (Table 13).

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<td>A</td>
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**Main findings and conclusions**

Understanding consumer behaviour has become extremely important for retailers (Hardesty and Bearden, 2009). The continuous growth of and increased competition in B2C e-commerce has increased the relevance of lenient delivery and returns policies to customer acquisition and retention tools. Some researchers (e.g., Wood, 2001; Wang, 2009) have used students as subjects to explore the effects of lenient policies on consumer behaviour in laboratory settings; however, such studies have limited external validity. Other researchers (e.g., Lewis, 2006; Petersen and Kumar, 2010) have used real market data, although their studies may have validity issues related to the use of secondary data, a lack of control over the data collection process and/or cross-sectional analysis of data in which a time factor may be present. This study avoids these problems and contributes to the literature by using a fully randomised and controlled experiment with a sample of customers from the actual marketplace. We conducted a simultaneous analysis with high generalisability of the effects of free delivery and free returns policies.
To conclude this study, we verified the results of several previous studies that were based on laboratory experiments or analyses of secondary data in this field. However, several prior findings were not confirmed by our data, and we present new and previously unknown associations between consumer behaviour and leniency in delivery and/or returns policies. We found two different types of relationships. First, we observed an association between a free delivery policy and various types of return behaviours. The “mirrored” relationship (i.e., the association between free returns policies and purchasing behaviour) has previously been explored; however, the effects of delivery conditions on return behaviours appear to be a new finding. We believe that the mechanisms behind this association must be explored further in future research.

Second, we observed a pattern of interaction between a free delivery policy and a free returns policy. The expected effects on consumer behaviour of one lenient policy appear to depend on whether the other policy is also lenient. This relationship has implications for the theoretical modelling of behaviour and the practical implementation of policies. Future theoretical research should consider delivery and returns conditions as well as possible interactions between these factors. It is also possible that the behavioural effects discovered here differ across different types of customers. Therefore, future research should include controls for RFM type variables and demographic variables such as age and gender. For now, the fact that the majority of customers at nelly.com are young females may be seen as a limitation of this study.

The main managerial implication of this study seems to be that free delivery and returns policies should not be offered at all, given that they are not mandatory from a legislation and/or competition point of view. From an economic perspective, such policies are not recommended since the downside (i.e. decreased coverage of costs) is not compensated for by a significant upside. Using the point estimates from our data set, we show that the expected value of a potential customer is lower when returns are free. Let us make the following assumptions:

- Free returns increase the probability of returns from 16% to 20%.
- The average value of returned items is not significantly affected by free returns.
- The returns fee for customers is 39 SEK.
- Free returns increase the probability of orders from 24% to 26%.
- The number of orders per unique customer is not significantly affected by free returns.
- Free returns decrease the average value of orders from 744 SEK to 712 SEK.
- The average contribution margin ratio is about 2/3.

Thus, the expected value of a potential customer when free returns are not offered can be calculated as \((1 - 0.16) \times 0.24 \times 744 \times \frac{2}{3} = 100\) SEK. On the other hand, the expected value of a potential customer when free returns are offered can be calculated as \((1 - 0.20) \times 0.26 \times 712 \times \frac{2}{3} - 39 = 60\) SEK. Further, companies often offer free delivery and/or free returns and are likely to continue this practice regardless of the results in this study because of legislation and the strategic risk of losing market share to competitors who do offer free delivery and/or free returns.

One limitation of this study is that it can be regarded as a case study since all of the participating subjects are customers of the same company. However, we believe that the external validity of our results should be considered high compared with those of
the previous studies in this area. This study is the first of its kind to explore the purchasing and returning behaviour of actual e-commerce customers in the marketplace with a mix of different delivery and returns policies within a fully randomised and controlled experimental setting. Lewis (2006) used secondary data from an Internet retailer that specialises in non-perishable grocery and drugstore items. Petersen and Kumar (2010) worked with a catalogue retailer that sells footwear, apparel and other accessories. Wood (2001) created laboratory experiments in which subjects could choose between goods that included radar detectors, candy bars and generic t-shirts. Highlighting markers and cups were used as goods in experiments by Wang (2009). We suggest that future research should examine consumer behaviour in other industries to verify our results.

The fact that all the subjects were informed about the study can also be seen as a limitation. Nelly.com agreed that informing subjects about the study was ethically necessary to avoid the risk of future bad publicity. However, since the subjects in this study were real e-customers who received their usual quarterly newsletter and were not asked to undertake anything out of the ordinary, we believe that the external validity of these results should be high compared with similar studies that were conducted with students in different types of laboratory settings.

Yet another limitation of this study is that the target population consists of only established customers of the company. Previous research (e.g., Hernández et al., 2010) indicates that customer behaviour does not remain stable because the experience that customers acquire from past e-purchases influences their subsequent behaviour. Therefore, a methodological challenge in future research is to identify methods of performing randomised and controlled field experiments with new customers as subjects. We also believe that the financial consequences of free delivery and returns policies as well as the customer behaviour associated with other types of leniency need attention in future research. For example, the optimal return rate is rarely zero, as the opportunity cost in terms of lost sales to reach zero returns is typically excessively high. With more accurate information regarding customer behaviour, the optimal managerial trade-off between these factors can be analysed more thoroughly.

5.5 Paper D – (R)e-tail borrowing of party dresses: An experimental study

Introduction

Should retail borrowing in the fashion business be seen as consumer fraud? Or is it simply the logical consequence of offering lenient delivery and returns policies while marketing relatively expensive “special occasion” fashion garments?

Returns policies as such provide the customer with the opportunity to postpone their purchasing decision until they have gained some experience with the goods (King and Dennis, 2003). In e-commerce, that experience is created after the physical delivery. Consequently, in e-commerce, customer returns are something inherent due to customers’ inability to experience a particular product and/or service prior to ordering.

While it is clear that both new legislation and increased competition change the way firms have to work with delivery and returns policies, it is not clear how changes in these policies affect consumer behaviour, especially the magnitude of retail borrowing. The e-commerce environment itself also changes the shopping process in several ways.
Firstly, EU customers are entitled by law to return what they purchased without giving any reasons. Therefore, in this study, the unethical retail disposition (URD) definition does not fit due to the authentic quality defect or third condition, and the deshopping definition uses a similar condition and does not apply either. It is necessary to understand the impact of these policy changes on consumer behaviour (Kauffman and Walden, 2001). By promoting liberal freight and returns policies enforced by both legislation (EUR-lex, 1997) and increased competition and by being expensive and encouraging returns, the retailer is often perceived as playing a role in retail borrowing (Piron and Young, 2000) as consumers’ knowledge of returns policies appears to be linked to fraudulent returning (Harris, 2010).

Purpose and overview

The main purpose of the study was to increase our understanding of consumer behaviour with respect to (r)e-tail borrowing, performed under different (more or less generous) delivery and returns policies. This study was designed as a randomised controlled experiment with a random sample strategy. Among the 192,482 Swedish customers who had placed an order at nelly.com during the last 12 months and were subscribed to the quarterly nelly.com email newsletter in November 2010, 4,000 were randomly selected and randomised into four groups with 1,000 in each group.

Methodology

This study was designed as a randomised controlled experiment with a random sample strategy. Among the 192,482 Swedish customers who had placed an order at nelly.com during the last 12 months and were to receive the quarterly nelly.com newsletter in November 2010 by e-mail, 4,000 were randomly selected and allocated to four groups (A, B, C and D) with 1,000 in each group. The required sample size for a one-way ANOVA was found to be 1,096 orders for a small (see (Cohen, 1992)) effect size of f = 0.1, an alpha value of 0.05, a beta value of 0.20 (power = 0.80) and 4 groups, which corresponds to 274 orders in each group. From experience, the relation between the number of orders and the number of sent newsletters was assumed to be at least 1/3. Thus, 822 newsletters would have to be sent in each group, given the conditions above. At the time of the data collection, this number was rounded up to an even 1,000 for safety and simplicity.

Main findings and conclusions

The experiment revealed certain purchase and return patterns that support the conclusion that (r)e-tail borrowing behaviour exists in fashion e-commerce. We also found evidence that lenient delivery and returns policies reinforce (r)e-tail borrowing behaviour, albeit not always in expected ways.

In summary, the significant statistical results in this study are:

- Party dresses have a higher rate of return than other items.
- Party dresses have a longer time to return than other items.
- Free returns shorten the time to order more for party dresses than for other items.
- The impact of free returns on the time to order for party dresses depends on the delivery conditions.
- The impact of free delivery on the time to return for party dresses depends on the return conditions.
• Free returns generally shorten the time to order. In particular, free returns generally shorten the time to order for customers who pay for the delivery, but free returns do not seem to shorten the time to order for customers who do not pay for the delivery.

It should be noted, however, that even though these results are statistically significant, small or medium effect sizes prevail in most cases. For example, the observed significant difference in the return rate between party dresses and other items is characterised by an effect size index $h = 0.33$ (Cohen, 1992). When large sample sizes are used, small differences can be found to be statistically significant. Hence, the large number of subjects can be seen as a strength as well as a limitation of this study.

Differences in delivery and return policies seem to impact on consumer purchase and return behaviour differently depending on the type of item. Therefore, we suggest a more differentiated view of how to apply such policies from a managerial perspective. Offering the same delivery and returns conditions to all types of customers and products cannot generally be optimal with respect to profitability. One might for example consider shorter returns windows in order to discourage borrowing for items like party dresses that otherwise tend to be borrowed. Exploring the effect such measures would have would also requires further research, however.

Finally, we would like to emphasise that even though the consumer behaviour patterns revealed in this experiment fit the definition of retail borrowing, a deeper understanding of the borrowing behaviour and its relation to lenient policies requires a qualitative research approach.

5.6 Paper E – Customer segmentation based on buying and returning behaviour: supporting differentiated service delivery in fashion e-commerce

Introduction

In shifting market conditions, the choice of supply chain strategies is critical when competing to serve customers (Gattorna, 2010). It is accepted in theory that the “one-size-fits-all” approach to supply chain design is no longer valid (Christopher et al., 2006; Gattorna, 2010; Ericsson, 2011; Godsell et al., 2011). Still, organisations, even in the highly competitive e-commerce market, utilise a “one-size-fits-all” strategy to create and deliver value to their consumers, thereby implicitly assuming that consumers’ demands and buying behaviour are homogeneous, and therefore there is no profitable reason to differentiate delivery in terms of service.

However, e-commerce consumers’ buying behaviour is not homogenous, especially in the fast-moving consumer goods (FMCG) business. FMCG organisations compete not only on products and price, but also on a large variety of services. For example, accessibility and speedy delivery are critical determinants of success. Returns management (RM) is clearly part of the parcel, and, if handled properly, it can decrease costs, while simultaneously increasing revenue and serving as a means of competition. The total offer is called the “value package” and consists of the physical product plus the services surrounding it. Some of these services are the order qualifiers, and some are the order winners (Ericsson, 2011).
Purpose and overview

Designing supply chains and organisational strategies in the fast-moving consumer goods business, especially within fashion e-commerce, requires a profound understanding of customer behaviour and requirements. The purpose of this paper is twofold: firstly, to test empirically and support whether a “one-size-fits-all” strategy really fits all in the fashion e-commerce business; secondly, to evaluate whether consumer returns are a central part of the creation of profitability, and if so, the role of returns management in the overall supply chain strategy.

Research design, method and measurement

The development of supply chain strategies needs to be both context-specific and close to the competitive environment; therefore, it is relevant with a single-case design for testing the well-known “one-size-does-not-fit-all” theory.

For the quantitative analysis, nelly.com exported transactional data from its ERP system. The data contained all (502,429) orders for a period of two years (2008–2009) covering the four markets in Denmark, Finland, Norway and Sweden. As the analysis was performed on a customer level, the authors performed detailed calculations to reveal each customer’s order sales figures, return figures, contribution margin, etc. Thereafter, each customer was analysed in terms of total sales, average sales per order, total contribution margin, average contribution margin, total number of orders and total number of returns. The organisation’s operations manager was interviewed on-site during the research and supplied the researchers with vital information regarding freight costs, return freight costs and costs related to the handling of orders and returns.

Main findings and conclusions

In theory, segmentation based on the customer’s buying behaviour should be performed using point of sales data or a more qualitatively based understanding (Gattorna, 2010). In the fast-moving business of e-commerce, customer returns are a valuable service parameter. If returns management is not carried out effectively, returns often decrease profitability. The e-commerce business collects and stores vast amounts of data; yet, this wealth of information is seldom used in developing service differentiation. Organisations often offer the same level of service to all their customers irrespective of each customer’s net contribution. In this study, behaviour patterns were analysed, and it was determined that grouping customers based on both sales and returns patterns facilitates a differentiated service delivery approach. It enables the company to offer different delivery and returns conditions to specific customers in order to increase their net contribution. Interestingly, we found that the most profitable customer is the repeat customer who frequently returns goods.

To summarise the research findings and relate the results to the overarching hypotheses and research purpose, the authors conclude that there is conclusive support for both hypotheses. The behavioural model described in this pattern shows that customers behave in a heterogeneous way and this indicates that the “one-size-fits-all” theory is obsolete, as the literature indicates (Christopher et al., 2006; Gattorna, 2010; Ericsson, 2011; Godsell et al., 2011). The results also support the previous findings that RM is an important part of the supply chain (Norek, 2002; Rogers et al., 2002; Stock et al., 2006; Mollenkopf et al., 2007a; Mollenkopf et al., 2007b; Frankel et al., 2010; Mollenkopf, 2010), as consumer returns are an important part of e-commerce customer
behaviour and therefore important both to the case organisation and to its partners, including the customers. Further, Mollenkopf (2007b) highlights the risks involved in e-commerce and the importance of RM in the service recovery process.

This research empirically supports the importance of RM in the service recovery in fashion e-commerce, as quite a large group of customers is systematically returning. However, companies using a “one-size-fits-all approach” are focusing solely on RM efficiency and therefore missing the opportunity to create a competitive edge. They are missing the potential value it could add to the organisation and its customers (Mollenkopf et al., 2007a) as well as its supply chain partners. A differentiated returns service might attract new customers (non-adopters) and better support the customer groups with diverging patterns or returns identified in this paper as RM. Clearly, this is part of the value creation, at least for certain customers.

5.7 Overview of the appended papers

This section presents an overview of the five appended papers in Table 14.

<table>
<thead>
<tr>
<th>Paper</th>
<th>Purpose</th>
<th>Design</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Increase the understanding and contribute to theory development regarding RM and its incorporation into the supply chain strategy.</td>
<td>A longitudinal single-case study was performed following a three-stage research design.</td>
<td>The decision not to view RM as a strategy was deliberate though not based on a thorough investigation and analysis. The increased awareness and understanding triggered the case organisation to work more proactively with RM. It started to discuss how to align the returns strategy with the overall business strategy.</td>
</tr>
<tr>
<td>B</td>
<td>Identify and describe supply chain needs for a returns information system and framework that facilitate gatekeeping and returns avoidance.</td>
<td>The research uses a single-case design, combining qualitative and quantitative data.</td>
<td>The proposed system and framework could increase both the efficiency and the effectiveness of the returns process through the ability to separate information and goods.</td>
</tr>
<tr>
<td>C</td>
<td>This study explores the influence of free delivery and free returns on the purchasing and returning behaviour of real e-customers in the marketplace.</td>
<td>A fully randomised and controlled experiment in cooperation with nelly.com, a Nordic e-commerce site that specialises in fashion and beauty.</td>
<td>The results suggest that a lenient delivery policy is associated with increased order frequency, decreased average value of purchased items, increased probability of return, and increased average value of returned items. In addition, a lenient return policy was found to be associated with increased order frequency, a decrease in the average value of orders, a decrease in the average value of purchased items, and increased probability of return. However, the effect sizes are generally small, and we conclude that factors such as legislation and competition often force e-tailers to offer free delivery and free returns even though such offers probably would not have been profitable otherwise.</td>
</tr>
</tbody>
</table>
Increase our understanding of consumer behaviour with respect to (r)e-tail borrowing, performed under different (more or less generous) delivery and returns policies.

A randomised controlled experiment with a random sample strategy. 4,000 customers were randomly selected and allocated to 4 groups with 1,000 in each group.

The experiment revealed certain purchase and return patterns that support the conclusion that (r)e-tail borrowing behaviour exists in fashion e-commerce. We also found evidence that lenient delivery and returns policies reinforce (r)e-tail borrowing behaviour, albeit not always in the expected ways.

To test whether a “one-size-fits-all” strategy fits in the fashion e-commerce business. Also, to evaluate whether consumer returns are a central part of the creation of profitability, and if so, to discuss their role in the overall supply chain strategy.

A single-case design using transactional data to test the “one-size-fits-all theory” and to evaluate the importance of RM.

The described buying and returning pattern shows that customers behave in a heterogeneous way and this indicates that the “one-size-fits-all” theory is obsolete, as the literature indicates. This research empirically supports the importance of RM in both the value recovery and the value creation in fashion e-commerce, as quite a large group of customers are systematically returning items.

5.8 Results of the appended papers

This section summarises the results of the appended papers as regards the research questions addressed in the thesis.

RQ 1: What causes consumer returns and what are the potential benefits from improving returns management in an organisation without a clear returns management strategy?

RQ 2: How can contemporary information technology enhance returns system performance and contribute to efficient and effective returns management?

RQ 3: Based on the achieved understanding and results, what are the potential benefits of aligning returns management in the business/supply chain strategy?

Table 15 Respective papers’ contribution to answering the research questions addressed

<table>
<thead>
<tr>
<th>Paper</th>
<th>RQ.1</th>
<th>RQ.2</th>
<th>RQ.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Product characteristics, i.e. quality, size and fit, not collected, are frequent return reasons. The reasons vary with product groups and markets. Increased understanding of the effects caused presents opportunities to change processes and systems to reduce returns.</td>
<td>Reduce the unwanted and unnecessary returns, i.e. late returners, etc.</td>
<td>Returns levels and behaviour vary with customers and markets, investigate further</td>
</tr>
<tr>
<td></td>
<td>Inability to separate returns information and goods flow causes returns, i.e. avoidable and possible to gatekeep against Reduced costs and improved profitability Increased customer service Reduced environmental impact from unnecessary transportation and handling</td>
<td>Facilitates the separation of returns information from goods returning. Facilitates the gatekeeping activity to safeguard against unwanted returns. Combines avoidance and gatekeeping to avoid unnecessary returns. Facilitates the analysis of returns. Automated returns information sharing. Control of the returns flow. Support decentralised returns handling</td>
<td>Monitor the consumers' buying and returning behaviour in real time, i.e. not focusing solely on sales and buying behaviour</td>
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<tr>
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<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Both free delivery and free returns policies were found to be associated with increases in the probability of returns. Both free delivery and free returns policies were found to increase the proportion of returned items and we observed an interaction effect between the two. Offer differentiated returns policy. Cross-functional returns awareness and understanding is needed to offer and deliver suitable policies, thus RM is strategic.</td>
<td>Different buying and returning behaviour regarding policy changes implies varying consumer demand and values Segment consumers and differentiate service delivery Increase profitability through reducing under- and overservicing</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Lenient delivery and returns policies reinforce the e-tail borrowing behaviour, thus increasing returns. Analyse consumers’ returning behaviour regarding product groups, measure profitability and reduce abuse. Differentiated returns policy</td>
<td>Block unwanted returns, i.e. late returners (borrowers), etc.</td>
<td>Analyse consumer buying and returning behaviour to deliver a profitable service offering, not everything to everyone Create a suitable (profitable) value package</td>
</tr>
<tr>
<td></td>
<td>Returns vary with buying behaviour and profitability varies too. The understanding that consumers behave differently when studying behaviour patterns relating to the &quot;one-size-fits-all&quot; service strategy indicates the necessity to integrate RM and become more SC alignment oriented.</td>
<td>Facilitate real-time data analysis to group and follow consumer buying and returning behaviour DSS.</td>
<td>Segment consumers and differentiate service delivery to minimise over- and underservicing. Aligning RM and SC strategy with consumers' buying behaviour facilitates geographical expansion as similar behaviour patterns were found in all markets.</td>
</tr>
</tbody>
</table>
6 Analysis – results

This chapter extends the short summary of the results in the preceding section 5.8, presenting how each research question is answered and explaining how the results were developed from the appended papers.

The RM framework (Rogers et al., 2002) is the primary framework for the thesis as such; however, the avoidance activity extends the primary framework using the DA (Gattorna, 2010) framework as a secondary framework discussing alignment and SC design.

6.1 RQ 1: What causes consumer returns and what are the potential benefits from improving returns management in an organisation without a clear returns management strategy?

The question could be divided into two sections. The first part, “what causes consumer returns”, is naturally context-dependent and is described using empirical evidence from both transactional data and interview results. The second section, “what are the potential benefits from improving returns management in an organisation …”, is answered using the frameworks developed in section 0.

From studying return reason codes that are given by the returning consumers, it is apparent that there are certain return reasons, such as size, fit and quality, that represent the main share of the consumer returns flow at the case organisation. These do not constitute new knowledge as they are described in the literature, including the author’s licentiate thesis (see section 2). Their distribution between products, product groups and consumers and their magnitude, were, however, new knowledge to the case organisation. The lack of understanding was a trade-off, i.e. “deliberate” in a sense, due to the case organisation being very sales-oriented and thinking, perhaps rightly so (initially), that steady growth was its main goal. However, the unawareness of the effects on the organisation of the returns resulted in a lengthy return time well above the 14 days during which consumers are entitled to return items. The case organisation was focusing on “taking orders” and accepted nearly all returns; it was spelled out to the customer service personnel never to question a return for whatever reason. This selling and “taking order” focus seemed to push the procurement department to an ever-increasing product range as it was convinced to grow through selling more (broader range) to current customers and to expand geographically. The lack of internal integration in the case organisation, without a system and a process for analysing the reasons for return and sharing information, also caused returns that could be avoided or controlled (Stock et al., 2006). The returns information should be utilised in a backward reward system utilising process-oriented returns performance measures (see section 3.3 on p. 37) to avoid both near real-time and future returns.

The product-related return causes, mentioned above, seemed to be reinforced when growing with a three-digit rate since the start; it was further amplified when the organisation was exposed to increased competition whereby competitors applied ever more lenient or liberal returns and delivery policies and the case organisation felt forced to follow. The experiment performed and presented in the appended Papers C and D showed that customer buying and returning behaviour changed when offered lenient policies and this complicates not only the return problem. On the one hand, if not following its competitors, the case organisation was afraid to lose sales, and on the
other hand, following them, i.e. offering policy changes, increased the proportion of returned items (see Figure 23 a summary of the associations between policy changes and returns), decreasing the average value of orders and purchased items.

![Figure 23 The associations between delivery and returns policies for customer orders and returns](image)

Competing in fashion/apparel e-commerce without acknowledging consumer returns as a central part of the business was perhaps a little naive; however, it was a deliberate trade-off whereby the case organisation was always lagging behind organisationally and procedurally and focused, as stated, on selling and growing. However, this trade-off was not based on a thorough analysis of the empirical evidence and theory, as presented in Paper A. This is where the applied research comes into place; we as researchers with a solid theoretical ground can be helpful in analysing and suggesting changes to the organisations under study but can equally importantly adjust theories, models and frameworks. From a researchers’ point of view, we need empirical data to test and develop our frameworks, models and theories. The case organisation would not have found any recipe to solve all its returns problems in the literature, as its problems were unique (context-dependent) and contemporary. However, the SCM framework would have suggested better management of its SC and especially highlighted the need for synchronising and developing processes such as the RM process. Extending the framework of SCM using theories on strategic management and specifically shifting the focus from efficiency to effectiveness and value creation (see sections 3.2 and 3.3) will assist organisations to manage the increased (hyper) competition better.
When focusing on value creation (as seen from a consumer perspective) rather than solely value recovery, organisations will likely acknowledge RM as part of their business strategy. The returns process and its activities (see section 3.1) are clearly part of the SC and should not be seen as individual activities as they both add costs and value (see section 3.3). Organisations will benefit through creating a “body of knowledge” concerning the causes of returns and the implications of not managing them. This knowledge will likely emphasise further development of analysis tools and synchronisation of activities and processes within and between organisations, to minimise the effects from the return flow as described in Paper A and in section 3.1.

The RM process (conceptual), as it is presented in the literature (Rogers et al., 2002), presents ways to start developing e-commerce organisations’ RM process. However, the fit between the framework and the real world, i.e. the context of e-commerce, was all but convincing. It is clear that the focus in the literature is an RM process developed for B2B and not for B2C. The B2B returns flow is not as frequent as the B2C consumer returns flow and therefore the suggested use of manual processes to gatekeep the returns flow receiving a return request (see Figure 24) before accepting any return that does not fit the studied context. The fashion/apparel e-commerce returns flow is typically a low-value and highly frequent flow that therefore needs an automated gatekeeping system supported by a contemporary ICT solution (see section 3.3 or 5.3 or appended Paper B).

RM consists of strategic and operational levels. The strategic part of RM develops the road map for the execution at the operational level. The road map gives a structure for the implementation of RM within the organisation and across supply chain partners (Rogers et al., 2002). Furthermore, the structure incorporates six strategic sub-processes that coordinate all six operational sub-processes (see Rogers et al., 2002, pp. 6) via the process interfaces with the other seven supply chain processes (see Figure 24). This is performed to ensure that all returns are managed in accordance with the RM goals and strategies, and to ensure that the strategy is aligned with the other processes, such as customer relationship management and supplier relationship management.
The proposed conceptual framework and its strategic and operational sub-processes are clearly not developed for the B2C e-commerce consumer returns flow, as mentioned above. They are too static and rigid and therefore do not fit the highly competitive fashion/apparel e-commerce business in which consumer returns are caused by a plethora of issues (as discussed above) but the product in itself need not be defective or unsellable. For instance, in relation to time-pressed consumers who are offered lenient delivery and returns policies and order two or three sizes to find the right fit, these returns are quite different from defective products and therefore require different routing and analysis. The potential of RM remains; however, it requires further development of both the strategic and the operational processes as returns are caused by products characteristics that need to be addressed through both design and procurement. Consumers’ buying behaviour is affected by delivery and returns policies and therefore needs to be analysed together with the marketing and sales department. We also described the effect of not measuring and controlling when, what and why consumers make returns (see section 5.2 or appended Paper A) and late returning customers could cause leftovers as the season might be over; thus, the non-existent gatekeeping today and the manual gatekeeping proposed in the framework need to be developed further. The gatekeeping activity is further elaborated in section 6.2.

6.2 RQ 2: How can contemporary information technology enhance returns system performance and contribute to efficient and effective returns management?

The present returns system was both inefficient and ineffective. The manual and paper-based returns system could support neither the gatekeeping nor the avoidance activities, even though the system had vital information that could reduce the returns flow. Returns information about warehouse picking issues were delayed through the
paper-based returns information system. The present system allowed all returns to enter the returns flow regardless of the reason for the return and the possibility to recover any value in the returned item as the gatekeeping activity was performed at the warehouse location or decision point 1 in the present system (see Figure 25).

![Figure 25 The present returns system](image)

The gatekeeping activity should be performed at the entry point in the returns flow (Rogers et al., 2002) to safeguard the returns system from unwanted and unnecessary returns. However, the conceptual framework does not discuss e-commerce consumer returns; the entry point refers to brick and mortar store personnel or warehouse personnel or other intermediaries who physically open and inspect the returned items. The reasoning above regarding delayed returns information that is travelling with the returned goods creates unnecessary returns, meaning returns that are “produced” after the first indication of a problem. This “time lag” is caused by the time between information being “entered”, paper-wise, and the time it takes for the return information to become accessible for the return-handling personnel and others. Wrongly delivered items at the case organisation caused 3.3% of all returns and the greater share of these could be avoided if information was separated from the returned goods. Defective products (2.8% of returns) and low-value (4% of returns) returns were allowed to enter the returns flow regardless of the non-existing value recovery, instead adding handling and transportation costs for different stakeholders in the system, including the consumer; for additional information, see appended Paper B and section 3.3 (specifically Figure 14).

The new breed of ICT systems focuses more on supporting the processes than on the technology (see section 3.3). Systems based on a service-oriented architecture allow the case organisation to be flexible and agile. The shift from a traditional focus on functions to processes in SCM is supported by SOA, as it is designed to mimic the flow of business processes. It aims to structure information technology (IT) in a more flexible manner and it is an architectural style that attempts to bridge the gap between IT and business (Reldin and Sundling, 2007).
The main components, from an ICT perspective, necessary to implement a business rules based and automated returns management solution with a focus on returns avoidance and gatekeeping are:

SOA – an architecture that is platform agnostic and allows a process set-up that integrates the order system, warehouse system, CRM system and logistics system (legacy or proprietary systems). This is crucial when handling avoidance and gatekeeping at the entry point (point of return) and validating on the customer and item level. Large volumes also demand a high level of automation at the entry point.

EDA – this handles events and message streams in the processes. This is the logical placement for the business logic needed to automate avoidance and gatekeeping. The possibility to combine streams and create new services that will add value to the process is of importance in RM. EDA- and SOA-based services are already used by the software industry today but in B2B solutions.

The RIS framework presented in appended Paper B uses the EDA and SOA architectures to apply the RM activities of gatekeeping and avoidance in the e-commerce consumer returns flow. The RIS will help to prevent the effects found in the performed experiment whereby lenient delivery and returns policies reinforced abusive behaviour, stimulating both e-tail borrowing and late returners (for further information see appended Papers C and D). Accepting returns only after web registration facilitates the possibility of blocking abusive customers trying to make returns. This an example of a situation in which the implementation of gatekeeping assists.

Figure 26 Future state returns systems

The implementation of the proposed RIS framework, presented in Figure 26, increases the visibility and therefore enables better control over the returns flow. It facilitates the implementation of the gatekeeping and avoidance activities as presented in Figure
The present RM sub-process as described in the framework (Rogers et al., 2002) does not fit the e-commerce researched. The use of a return request (see Figure 27) is not appropriate for the low-value frequent returns flow and therefore the screening of return requests as a gatekeeping activity cannot be performed in the present e-commerce returns system. However, the use of web returns registration as shown in the future RM sub-process facilitates the screening of the returns information and facilitates the gatekeeping activity. The use of web registration (gatekeeping) together with the second activity, analysing returns information and performance, can be used to avoid the “production” of future returns (controllable, c.f. Stock et al., 2006), i.e. wrong delivery or defective products, thus the SC becomes more effective and the returns system more efficient.

Analysing the returns information and performance, thus developing an interface with other processes such as demand management and order fulfilment, creates an opportunity to shift the focus from value recovery to include value creation. This is a way to address what Rogers et al. (2002) propose as future research areas and part of the purpose of this thesis (see section 1.3 on p. 10). Applying gatekeeping as proposed in Figure 26 is an effective way of creating value (customer service) and reducing costs. The returns flow can be redirected and combined with the forward flow at a suitable point in the SC. This enables decentralised returns handling that is still controlled and planned by the e-commerce organisation but executed downstream.

![Diagram of Defined Conceptual Returns Management Operational Sub-Process and Future Returns Management Operational Sub-Process](image)

Figure 27 Defined conceptual (Rogers et al., 2002) and future RM sub-processes (adapted from conceptual)
The use of the presented future state RIS (see Figure 26) facilitates the implementation of the gatekeeping activity before the physical entry point in the returns system. This in turn enables the early positioning of the avoidance activity, which otherwise is performed as the last stage. Lastly, it changes the focus on an efficient system built solely around value recovery to add possible value creation. Integrating the physical (downstream) network (see section 3.3) and improving RM and outsourcing parts of the RM process will benefit consumers and the e-commerce business in different ways. One definite method, from the consumers’ perspective, is to coordinate the returning of goods with the delivery of exchange products, i.e. switching a defective product with a repaired or a new product, or simply delivering the “same” product in another size. Further, adding more or different value is a way of becoming more competitive (see sections 3.2 and 3.3), and thus a way of expanding the business.

6.3 RQ 3: Based on the achieved understanding and results, what are the potential benefits of aligning returns management in the business/supply chain strategy?

The RM process has traditionally been seen as a value recovery process, which has resulted in an efficiency focus in the returns flow. In this thesis, we have presented the effects on an organisation when underprioritising or neglecting RM in general and consumer returns specifically. Changing this focus and adding a more value creating perspective will enable organisations to find a more favourable and strategic position in the hypercompetitive e-commerce business (see section 3.3). Regarding consumer returns in fashion e-commerce in which returns levels reach 20–50% or even higher, it is difficult to understand that RM is still underprioritised, especially when the cost of returns is often met by customers, returning or not, as the cost of handling returns often exceeds the price paid by customers returning, especially when customers are offered free returns. Mollenkopf et al. (2007a) investigated RM and found it to be an important link between marketing and logistics and therefore affects sales and organisations’ competitiveness. In this thesis, the author has presented empirical evidence describing varying customer buying and returning behaviour (see section 5.2 and section 5.6), which makes it quite clear that the “one-size-fits-all” strategy is outdated if the main goal is to be customer-oriented and still profitable. The way to treat customers in the e-commerce business, especially fashion and apparel, should be differentiated and support the customers, or better customer groups, demands and requirements. Delivering a service based on “one size fits all” resulted in a heterogeneous pattern when measuring the contribution margin, as described in appended Paper D.

Strategically neglecting (which was the case initially, see appended Paper A) RM and consumer returns resulted in a lack of system support to analyse the effects of the returns, i.e. the effects of accepting late returners and accepting all returns (low-value and defective) into the returns system, which of course comes naturally given the priority level. Missing the importance of analysing the causes of returns left the “problems” unresolved and they were likely to “happen” again as there were no processes in place to counteract or avoid them. Therefore, treating products, product groups, suppliers and personnel uniformly, thus supporting the “one-size-fits-all” strategy, was likely to be an effect of being very sales-oriented, i.e. focusing on revenue and growth, and hence focusing less on profitability. However, being overly sales-oriented and missing the point that returns, as described above, affect sales through
increased price, i.e. a greater margin to cover returns costs, surely backfires on the sales orientation. For the case organisation to be able to proceed this non-focus on returns and still grow from around $US 2 million in 2007 to an approximate $US 140 million in 2012 somewhat acknowledges that consumer returns are still a nuisance, as indicated by previous researchers (Blackburn et al., 2004; Guide and Van Wassenhove, 2006) or a necessary evil (Genchev et al., 2011).

However, to some customers and retailers, it is a painful process, a cost centre and an area of potential customer dissatisfaction (Stock et al., 2006); therefore, focusing on an efficient (though missing the target becoming inefficient) returns system, and being ineffective, is likely to lose some opportunities and miss to attract new customers and lose some existing ones. The sales and returns patterns presented in appended Paper E and described in section 5.6 show groups of customers with different behaviour, indicating varying demands or requirements on the case organisation. Further, the e-commerce business in Sweden reaches a modest 5% of the retail business and it is quite likely that there are non-customers who are not supported by the current strategies and services and non-value created.

Organisations have realised that effective returns management can provide a number of benefits (Norek, 2002; Rogers et al., 2002; Stock et al., 2006; Mollenkopf et al., 2007a; Mollenkopf et al., 2007b; Frankel et al., 2010; Mollenkopf, 2010), such as improved customer service, effective inventory management and product dispositioning, as described earlier (see section 3.1). The increased competition and globalisation have resulted in effects such as an increased focus on services as the product alone only stands for part of the value delivered. Globalisation as such has resulted in an increased movement of inbound and outbound transportation, affecting the environment, organisations and end-users. One way of controlling what can be controlled is the fact that organisations deliver what their customers and end-users require, no more and no less. Utilising a “one-size-fits-all approach” (see section 3.1) in the e-commerce business, as presented in this thesis, is likely to be inefficient (overproducing) and ineffective (underproducing). Gattorna’s (2010) DA and Ericsson’s (2011) DCM frameworks seem promising in bridging the gap between what customers expect and the specified or offered service, as they focus on the customer and their behaviour and requirements, i.e. consumer insight. Understanding the dominant buying behaviours in the market segment that organisations are servicing is fundamental. Otherwise, the over- and underservicing will be likely to occur, with a bearing on profitability and possibly lost sales. From an RM perspective, it is not a question of accepting returns or not, or trying to hinder customers from returning. It is to create an effective SC, understanding more about what causes consumer returns and controlling the present flow, i.e. avoiding the unnecessary/controllable and gatekeeping against the unwanted returns flow.

To create an effective e-commerce SC from a global perspective, organisations need an RIS that separates the information flow from the goods flow, as presented in appended Paper B and section 6.2. This allows organisations to follow real customer behaviour using stored data and real-time data (see appended Paper E and section 5.6) and to develop processes that are more in tune with the varying returns patterns caused by a mix of product characteristics and customer buying and returning behaviour. The RM process could be more visible for the SC and therefore better controlled if information about consumer returns was accessible in “near real time” when returns are caused. This thesis emphasises an integrated process perspective of RM as opposed to focusing
on separate activities (see sections 3.2 and 3.3). From an SCM perspective, RM as applied in this thesis advocates adding the focus on effectiveness (value creation) and not solely efficiency (value recovery). In doing so, organisations should focus on understanding the RM process as it assists consumers in the “job they are getting done” (see section 3.4) when ordering from the organisation.
7 Conclusions

This chapter presents the conclusions of this thesis followed by the practical and theoretical contributions.

7.1 Returns management in e-commerce

The overall purpose of this thesis was to increase the understanding of how and why to apply and improve returns management in e-commerce. The aim was to improve the RM framework and to assist the development of returns management research, with the intention of developing a conceptual/theoretical model of an e-commerce returns system that incorporates the application of avoidance (to improve effectiveness) and gatekeeping (to improve efficiency) in an e-commerce context in order to improve systems performance (effectiveness).

The main conclusions from this thesis fit with Nilsson and Gammelgaard’s (2012, p. 765) description of the SCM discipline of today: SCM encompasses collaboration and integration of interorganisational processes, creation of customer value and innovation. RM is part of SCM and there is no doubt that returns will continue to be part of the business (Stock and Mulki, 2009), especially in the fashion/apparel e-commerce business in which products are produced or sourced globally, and in which size and fit issues play a significant role in causing consumer returns. However, as presented in this thesis, how we design, operate and analyse our organisations and the SC could make a difference when analysing and discussing the causes of consumer returns and how to apply returns management. RM is a cross-functional process and to work proactively to avoid the avoidable, organisations need internal collaboration and interorganisational integration. These have to be undertaken both to handle and to execute the RM process as well as the more proactive work using historical results from transactions to work better or even differently in the future.

In the reported and described single-case study, performed with the case organisation nelly.com, it was showed that the consumer returns rates are not only influenced by the product itself. Consumer returns constitute a complex problem that consists of the causes and reasons for return (size, fit, quality) in the product together with consumer buying and returning behaviour ultimately summing up to a total effect on the organisation. Leaving this problem unresolved, as the case organisation did for quite a long time, probably increased the returns rates and lengthened the return time as no questions were asked and nearly no returns were questioned. There is probably a learning curve whereby some customers might take the opportunity to use the “customer-friendly” approach of the case organisation. This behaviour seemed to increase when applying liberal returns policies, as the experiment showed, and this was in line with the literature (Wood, 2001; Wang, 2009; Petersen and Kumar, 2010). These effects from adjusting policies to adapt to the competitive side are an important aspect of why returns management should be improved as it clearly affects the customers’ buying and returning behaviour (see Figure 23). Even though the proposed legislation to harmonise the consumer directive forcing organisations to accept free returns (see section 3.5) in the European Union was voted down during the writing of this thesis, the competition and globalisation seem to continue to affect the way in which organisations compete.
These three outer forces (Figure 28) and the gap in the literature regarding the applicability of RM to B2C (see section 1.2) together with propositions from previous research (see section 1.3) led to the purpose of this thesis, as presented above. This model has been developed during the course of this thesis.

The performance of two studies and the presentation of the study resulted in five appended papers answering the three research questions addressed, fulfilling this purpose. The combination of a longitudinal single-case study and a real-life experiment with real customers contributed to creating both a theoretical contribution and an important practical contribution. The reasons for applying RM depend on the understanding of the effects on the organisation and its stakeholders from the returns flow. In the first study performed, we presented empirical evidence that showed that the returns level is not as uniform as the organisation initially believed. Aggregated returns levels, often reported in the literature (Rogers and Tibben-Lembke, 1999; Norek, 2002; Stock and Mulki, 2009), do not present reasons for applying RM.

Analysing reasons for returns and returns rates for products, product groups and customers, we found quite varying returns patterns that are hidden when using aggregated returns data. These surely affect the organisation and its financial results. From the interviews conducted, we found that there was no process in place for the analysis of products, suppliers or the internal sourcing department regarding returns levels or reasons for returns. This indicates strongly that introducing and improving RM in an organisation without a returns strategy offer the potential to reduce the returns levels in several ways, such as through internal and external integration (see section 3.3). Firstly, cross-functional analysis of returns and feedback to purchasers, designers, suppliers and manufacturers will present them with the possibility for improvements. Secondly, choosing the correct supplier is critical, especially for certain products or product groups with high returns rates. Thirdly, how organisations decide what to sell in the coming season inevitably has a bearing on the future returns levels.
Choosing certain products, product groups and suppliers will, based on history, result in higher or lower risks of consumer returns. Likewise, entering new markets, the competitive force and the legislative force will also affect the returns levels. This further indicates the importance of RM and the proper returns system, including the RIS that facilitates the control over the returns flow yet introduces the possibility to decentralise parts of the returns handling in the network (see section 3.3 and Figure 29).

In order to achieve higher degrees of efficiency, it is vital to improve the RIS and how organisations use and share returns information, internally, cross-functionally and with their SC partners, but it is equally important to use information in near real time and make it accessible for customers online. The use of web registration of returns information creates tremendous opportunities for efficiency improvements in the returns flow but perhaps more importantly opportunities for increased effectiveness in the e-commerce SC.

Not using the vast amount of transactional data that are stored regarding returns is quite surprising, as described in the thesis; there are clear groupings in customers’ buying and returning behaviour, indicating heterogeneous demands and requirements. We also presented evidence suggesting that the “one-size-fits-all” approach did not fit the customers when analysing and measuring the contribution margin. It was quite clear that certain customers were not ordering frequently from the case organisation and others were both frequent buyers and frequent returners and quite surprisingly the most profitable group (see section 5.6 or appended Paper E). The reported research has initiated an alignment process at nelly.com, with the use of transactional data encouraging and starting more evidence-based management of consumer returns.

Previous research indicates (with a few exceptions) that returns handling and returns systems are quite similar, focusing on value recovery and therefore on efficiency. The
buying and returning pattern found and described in this thesis indicates that this is not enough for all customers/end-users. The current returns processes, systems and activities seem to attract some but not all customers. This is where the DA framework fits, and it might not only reduce the returns levels as such; it is plausible that it could enhance the business and make organisations more competitive and the e-commerce business increase its share of the retail trade. This could be achieved through becoming more effective and efficient in supplying a differentiated service based on segmented customers’ dominating buying behaviour. As the author concluded in the licentiate thesis, there are no average customers.

In the eyes of the author using the results from the thesis based both on previous research and on the research performed since the start of the research journey, consumer returns are part of the value creation in e-commerce and therefore returns management is a strategic part of the business as such.

In the introduction, the author wrote that sustainability and sustainable development are closely linked to the reverse flow of goods as well as the forward flow of goods. Extending the focus towards value creation will likely lead to the use of differentiated service delivery, as we have seen that customers behave differently in the present system (see appended Papers A and E) as well as when offered different delivery and returns policies (see appended Papers C and D). Separating the information flow from the goods flow in the returns flow increases the visibility and therefore facilitates a better focus on conserving the resources used in the returns system as well as in the SC, becoming more sustainable. This will, however need future research in order to gain and create consumer insights and to create an understanding of the demand and requirements customers and non-customers have for the e-commerce business, as presented in section 3.4.

### 7.2 Practical contributions

The reported research starts to fill the literature gap regarding why RM and consumer returns are strategically important to the fashion e-commerce business. We have presented empirical evidence in Study 1 (see appended Paper A) that increased the awareness of this importance and triggered a more proactive and strategic approach to RM. This new understanding has also started work to align strategies dynamically with customers’ varying behaviour, which ultimately indicates heterogeneous demands and values. This awareness and understanding were quite far from the aggregated returns rates both reported by the literature and in use at the case company at the start of the research.

This thesis opens up the scope for managers, as the main task for many logistics managers, SC managers and returns managers is to reduce the effects from returns by becoming more efficient. This was probably acceptable a while ago and perhaps correctly so in the flow of waste and defective products early in the reverse logistics era. However, the returns problem nowadays, especially in e-commerce and specifically in fashion/apparel, is far from the traditional waste flow problems. The waste returns flow is a “natural” returns flow and the flow options are limited. Today, we see a returns flow that originates from all the possible connections in the SC and therefore we need a more flexible approach when it comes to building the flow options and executing the returns at the operational level. Handling consumer returns in a traditional or efficient returns system without knowing the reason for returns and
therefore the resultant value recovery is nothing more than gambling with resources. The proposed RIS framework addresses this issue and the downstream application of the gatekeeping activity, near or at the end-user location, needs managerial attention at the strategic process level to build a proper returns system that is partly, and quite likely, decentralised. This fits the growth tendency whereby new market entries are common. The effect of introducing the RIS framework into e-commerce, in which new market entries are common, is that applying downstream gatekeeping facilitates the outsourcing of the part of the returns flow that is inefficient today. Third-party service providers (3PSPs) or third-party logistics providers (3PLs) can assist in the decentralised value recovery and value creation while still keeping the planning and control at the e-commerce organisation.

Returns are caused by products, suppliers, customers and internal processes and therefore a returns manager needs to address this with other functions and SC partners. This result is partly new and the proposed alignment of RM as a strategic process is new in the sense that RM is part of the value creation; this thesis empirically supports the old theory that “one size fits all” is outdated and does not fit all in the e-commerce business. This implies that managers need to create a profound understanding of consumers’ dominant buying behaviour and to create suitable delivery and returns processes to be able to grow within existing customer records and to attract new or non-customers who are out of reach at present. Focusing on creating value for customers instead of benchmarking and using best practice approaches will decrease the competitive burden on organisations, as the competitive edge is not copied. The value creation part of RM seems to be heterogeneous as certain customers frequently utilise the returns process and others do not (see sections 5.2 and 5.6). This indicates that for some the returns process is part of the fulfilment process and for others it is not. Thus, the fulfilment process needs better integration with and further developed of the returns process. The present process merely suits the recovery of value and does not focus on the creation of value.

The main managerial implication of the real-time experiment seems to be that free delivery and returns policies should not be offered at all, given that they are not mandatory from a legislation and/or competition point of view. From an economic perspective, such policies are not recommended since the downside (i.e., decreased coverage of costs) is not compensated for by a significant upside. It was apparent from the experiment that offering lenient delivery and returns policies increases the probability of returns and seems to reinforce (r)etail borrowing behaviour and therefore a more differentiated view of how to apply such policies from a managerial perspective is suggested. Offering the same delivery and returns conditions to all types of customers and products cannot be generally considered optimal with respect to profitability.

7.3 Theoretical contributions

The longitudinal single-case study performed in this research has contributed to the body of knowledge regarding why and how organisations start their journey from neglecting and not prioritising RM to becoming aware of effects from a low priority level and becoming more proactive and implementing an RM process. Following this, the research contributes to and develops the RM framework to achieve a better fit with the conditions in the e-commerce returns flow. It contributes new applications of the avoidance activity that are based on the RIS framework involving the real-time use
of data from customers, using their returns information to avoid unnecessary consumer returns. Further, the gatekeeping activity was not developed and defined for the B2C e-commerce business and this research has contributed to the development in the studied context and in combination with the avoidance activity (see Figure 29 and Figure 30).

![Figure 30 The developed future RM process](image)

As a result of performing a real-life experiment with real customers who were ordering and returning, this thesis contributes to the understanding of the effects caused by changes to delivery and returns policies. Further, it extends the body of knowledge regarding the performance of real-life experiments with real customers. The research has verified the results of several previous studies based on experiments in laboratory settings or analyses of secondary data in this field; however, this research also challenges some previous results using the experimental design. Several prior findings were not confirmed by our data, and we present new and previously unknown associations between consumer behaviour and leniency in delivery and/or returns policies. We found two different types of relationships. First, we observed an association between a free delivery policy and various types of returning behaviours. First, we observed an association between a free delivery policy and various types of returning behaviours. The “mirrored” relationship (i.e., the association between free returns policies and purchasing behaviour) has previously been explored; however, the effects of delivery conditions on returns behaviour appear to be a new finding. We believe that the mechanisms behind this association must be explored further in future research.
Second, we observed a pattern of interaction between a free delivery policy and a free returns policy. The expected effects on consumer behaviour of one lenient policy appear to depend on whether the other policy is also lenient. This relationship has implications for the theoretical modelling of behaviour and the practical implementation of policies. Future theoretical research should consider delivery and returns conditions as well as possible interactions between these factors. It is also possible that the behavioural effects discovered here differ across different types of customers. Therefore, future research should include controls for RFM type variables and demographic variables such as age and gender. Following both the case study and the experiment, we have been able to support the theory that the “one-size-fits-all” strategy is obsolete in the studied context.

7.4 Research limitations

The limitations of this thesis include my personal presumptions and the way the research was performed. The research design can be regarded as somewhat innovative, in combining a longitudinal single-case study and a real-life experiment. However, focusing on the purpose of the study and the research questions addressed, and the fact that the author acknowledges that research should be driven by the problem at hand. The author see the design more as a strength than as a limitation when combining methods within a study as well in the overall research design. Considering the purpose of generating/extend theory, studying a single case over time presented me with a clearer view of what might cause or influence consumer returns. Therefore, the experiment was performed as part of the reflexive research design. This should be seen as a strength as both designs have their weaknesses and strengths and combining them strengthens the end result.

The developed returns system and the suggested use of SOA and EDA were not tested in practice, though applied in theory to the data generated and the problem presented in the appended Paper B. This can be viewed as a limitation; however, using a web return registration system does not necessarily need the SOA and EDA and therefore the results from the study, applying avoidance and gatekeeping, are valid. The actual use of SOA and EDA are therefore to be placed in the future research part and discussed later in the thesis.

My personal presumptions are based on the view that we live in a world that is difficult to describe in an objective way and therefore your understanding of the results in this thesis are dependent on my subjective view of what I have seen and the way in which I describe and write about what I have performed.
8 Discussion

This section will discuss the result of the thesis in terms of the purpose and research questions, the research performed and the outcome.

On page v, the author wrote a quote from Lee Hochberg, who participated in the Singapore 2012 Supply Chain Conference on “thought leadership”. Instead of asking readers to go back, the quote is repeated, as it is quite generic and fits the findings and results presented in the thesis:

The supply chain is perfectly designed to execute its output – so do not complain about its current output – if you want another output you need another supply chain design.

How does this quote fit into the thesis results? The author is not sure if he understands the quote as Lee Hochberg meant it. Or, better, the author is quite convinced that we do not read it with the same pre-understanding or lenses and therefore it needs a little explanation from the author’s point of view.

When the research journey started way back in time, there was not much interest in the research area of consumer returns or returns management. It all started by studying the returns handling at three large mail order/e-commerce organisations situated in the vicinity of Borås. The organisations were Ellos, Halens and H&M mail order. These three “giants” in mail order have been present since the beginning of mail order, or at least almost since the beginning. If one compares them with the case organisation nelly.com, the three are prehistoric in good and bad ways. After the initial research with the “three”, the author understood that he would never come close to the centre of consumer returns in an organisation if he stayed with the previous organisations. The author wanted to find the nerve and become close to an organisation to understand as much as possible about returns in general and consumer returns specifically. The author understood that to achieve this it was needed either to reduce in corporate size or to find a “specialist” or key informant within an organisation who understands and knows what is going on and who has the whole picture. Reducing in size would somewhat redirect my interest and delimit my scope and quest, but the author was willing to make that trade-off.

In this thesis, the author has tried to present the problems to the readers as he has seen them both from the literature and from the practitioners’ perspective, albeit through his lenses. The results presented show three different viewpoints on the problems regarding consumer returns in e-commerce. First is the problem that relates to globalisation, which has a bearing on production, sourcing and markets. Then, we have the problem regarding the consumer, who all too often is seen as the king or queen, and who is sometimes allowed to float freely doing whatever he or she wants. Lastly, returns are related to the organisation and how we conduct our business regarding both the global context and how we handle the organisation and our relations with suppliers and customers. If we attack these aspects, as Gattorna (2010) mentions, with an operational sledgehammer to reduce the complexity (see section 3.2), such organisations obtain the output they “deserve” both from existing customers and from

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5 Director, GM, Global Integrated Planning & Optimisation Systems
non-adopters. If we accept that there are no average customers and that there is no room for the “one-size-fits-all” strategy in the e-commerce business, then perhaps we need to accept and embrace a far more liberal view of SC configurations. In section 7.1, the author referred to Nilsson and Gammelgaard (2012) and their description of the SCM discipline of today:

SCM encompasses collaboration and integration of interorganizational processes, creation of customer value and innovation.

In this thesis, we have described heterogeneous buying and returning behaviour as a response to the “one-size-fits-all” approach utilised by the case organisation. Porter (2008) argues that when dealing with increased competition one needs to understand the forces that drive the competition and how to use them strategically in favour of the own company (see section 3.2). Understanding the value the returns process actually delivers or creates can place organisations in a more favourable competitive position, thus reducing the effects of the existing rivalry in the business and perhaps even keeping new entrants out. Further, to become responsive and competitive in a hypercompetitive environment, such as the e-commerce business, an organisation can use differentiation strategies for existing products and logistics services or markets (Kotzab et al., 2009). Alternatively, introducing new products/logistics services into existing or new markets will require deeper and more meaningful relationships within the firms’ SC according to Kotzab et al. According to Porter (1996), hypercompetition is a self-inflicted wound.

The e-commerce business is growing rapidly; however, it represents a fraction of the retail trade, in Sweden around 5%. Therefore, the reasons for non-buying and non-usage are also important (Osterwalder and Pigneur, 2010), and supporting the e-commerce business with a standardised returns process focusing on value recovery will likely not support “getting the job done” for all consumers. In the contemporary market, the focus ought to be on understanding the motivations behind purchase decisions. This requires an understanding of individual consumers rather than an overly simplistic image of the “average consumer”. A business model describes the rationale of how an organisation creates, delivers and captures customer value (Osterwalder and Pigneur, 2010). For some customers, as presented in this thesis, the returns process is part of the overall value creation and therefore the fulfilment process needs to be developed to become more dynamic and flexible. Therefore the e-commerce business model of the future needs to be much more adaptive to heterogeneous requirements and demands.

Innovation and adaption of the e-commerce business model towards creating and delivering customer value in a global context will need collaboration and integration of interorganisational processes, as described by Nilsson and Gammelgaard (2012). The intensified globalisation involves more external organisations for the delivery of goods (Ko, 2009), and the returns process in e-commerce accentuates this and increases the transportation needed. The presented model (see Figure 29) facilitates the information sharing needed. However, development of the business processes and services is necessary, as discussed in section 3.3.
9 Future research

This section presents future research areas.

9.1 The returns management process

The separation of the information and the returned goods was discussed in the licentiate thesis (Hjort, 2010) and presented in the appended Paper B in this thesis. In appended Paper A, we reported that the case organisation developed a web returns system during 2012. The effect from the separation is therefore not included in the thesis as it is newly implemented. However, it requires future research both to utilise the real-time information and to verify its functionality. The RIS and the use of return reason codes is another area for future research as the old paper system used a number of static return codes. Further, when gatekeeping the returns flow, using the returns information one could argue that customers could start to misuse this opportunity and defraud the system. Therefore, we need to research and verify both the accuracy of the information and the ways to develop the returns process as seen from the customer perspective.

As presented in appended Paper B, a percentage of the returns flow is valued below the cost of the actual returns handling and transportation, thus there is no value recovery. This is another area for future research: how should the system handle these and what is the best way of disposing of them?

9.2 Experimental research

Regarding the experiment performed, we believe that the mechanisms behind the association between delivery conditions and returns behaviours and the effects of delivery conditions on returns behaviours appear to be a new finding and must be further explored in future research, as this finding has important managerial implications.

The experiment was performed using previous customers of the company. Previous research indicates that customer behaviour does not remain stable because the experience that customers acquire from past e-purchases influences their subsequent behaviour. Therefore, a methodological challenge in future research is to identify methods for performing randomised and controlled field experiments with new customers as subjects. We also believe that the financial consequences of free delivery and returns policies as well as the customer behaviour that is associated with other types of leniency merit attention in future research. For example, the optimal returns rate is rarely zero, as the opportunity cost in terms of lost sales to reach zero returns is typically excessively high. Given more accurate information regarding customer behaviour, the optimal managerial trade-off between these factors can be analysed more thoroughly.

9.3 Innovation and business model generation

The value creation perspective in general and the business model generation perspective in particular are another area for more qualitative research. The business model perspective could assist the development of the delivery and returns processes that are in tune with the job customers are trying to complete when ordering online. It is quite unlikely that customers’ demands are satisfied with the present delivery and
returns system. In the thesis, we reported heterogeneous buying and returning patterns whereby in the appended Paper B the most profitable customer group is the frequent buying and frequent returning customer group. The web registration of returns is forcing customers to use the website to be able to return items; this is perhaps not the best option for all customers. From a business perspective, however, it offers another possibility to connect with the customer once again, thus selling more, or a possibility for reconciliation and offering a solution to the “problem” causing the return.

At present, the returns flow is very rigid and inflexible and the price model does not offer any way of separating the returning activities performed in the returns process. Thus, the organisation pays a fee for the collection of returns at the DoP (see Figure 9), the sorting and transportation and finally the sorting for delivery back to the e-commerce business warehouse. Utilising the separation of information and goods using web registration returns could plan for decentralised handling of certain consumer returns. However, this would need research regarding both the delivery and the returns system including a developed packaging system.
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Paper A

ALIGNING RETURNS MANAGEMENT WITH SUPPLY CHAIN STRATEGY: A FASHION E-COMMERCE CASE

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Structured Abstract:

Purpose (mandatory):
The returns management (RM) framework and reasons for implementing RM are rarely researched or discussed in B2C e-commerce. The main purpose of this paper is to increase understanding and contribute to theory development regarding the importance of RM in fashion e-commerce.

Design/methodology/approach (mandatory):
A single case study was performed in a three-stage longitudinal research design.

Findings (mandatory):
In the case reported, we found a low awareness regarding the consumer return flow. Contrasting the awareness combining qualitative and quantitative empirical evidence created a better understanding of and increased the priority of RM. This triggered a start to align the RM strategy with the overall supply chain strategy combining value recovery and value creation.

Research limitations/implications (if applicable):
The theoretical contribution, though limited, focuses on extending the focus on RM from merely a service and value recovery aspect to a more strategic positioning in the studied B2C context.

Practical implications (if applicable):
Using more evidence as opposed to assumptions facilitates a thorough understanding and control of the consumer return flow.

Social implications (if applicable):

Originality/value (mandatory):
The use of a three-stage case study design, step by step increased the awareness and understanding of the strategic importance of RM.

Keywords: Returns management, Fashion e-commerce, Strategy, Alignment, Case study

Article Classification:
Case study
INTRODUCTION

Rogers et al. (2002) discussed future research on improvements to the supply chain (SC) from improved returns management (RM). Since the conceptual definition of RM process (Croxton et al., 2001; Rogers et al., 2002) and the focus on value recovery in the returns flow, other researchers has started to address RM from an effectiveness perspective. Mollenkopf et al. (2007a) argues that an effective RM is important, because returns can erode profitability. Stock (2009) claims “organisations have realised that a better understanding of product returns etcetera can provide them with a competitive edge.” However, Stock and Mulki (2009) also highlights that some organisations still do not understand the critical nature of product returns and their position in the marketing mix, or the relative importance of RL to the forward logistics. Rogers and Tibben-Lembke (1999) and Stock and Mulki (2009) investigated the importance of RL in an organisation, however literature clearly lack empirical support of the importance of RM to organisations and the SC. What does management in this respect mean, and how do we perform an effective management of returns within a SC. Rogers and Tibben-Lembke (1999) addressed questions regarding the importance of reverse logistics (RL) activities in relation to other activities, and they found that certain organisations had started to shift focus, raising its priority and thus improving their RL capabilities. Returns management can be a strategic issue (Rogers and Tibben-Lembke, 2001) and most organisations initiated RL as a strategic variable for competitive reasons, legal reasons was the least given reason (Rogers and Tibben-Lembke, 1999, p. 18). Competitive reasons and clean channel (other reasons) indicates a relation to marketing, and therefore a value creation rather than cost reduction perspective. From these reasons, it is quite clear that the return function stretches cross-functional barriers. Thus, the management of returns must balance between the generation of customer value and reducing costs in the SC. Most return literature addresses RM within business to business (B2B) (cf. Rogers et al., 2002; Bernon et al., 2011), and the suggestions of the RM processes and sub processes, or even other process interfaces within SCM, seem to address the quite infrequent and relatively high-value returns flow between intermediaries, balancing the acceptance of returns against possible loss of customer loyalty. In e-commerce in the European Union (EU), the acceptance of returns is not an option but, rather, is mandatory due to consumer protection regulations (EUR-Lex, 97). The customers are entitled by law to return what they purchased, given certain conditions.

Balancing the acceptance of returns indicates a communication between the consumer and the e-tailer, before returns enter the return flow using a return merchandise authorization (RMA) used in B2B (Rogers and Tibben-Lembke, 1999). Online shoppers are often time pressed, and it seems that they do not understand the necessity for obtaining a RMA (Alreck et al., 2009). The management of B2B returns is quite far from the unpredictable, frequent, low-value consumer return flow found in the fast growing e-commerce business. How should these returns be managed cross-functionally, or even across the supply chain, to both create end-customer value and to hinder profitability from eroding? Consumer returns in mail order and e-commerce are estimated to represent, at least, between 18 to 50% of sales (Rogers and Tibben-Lembke, 1999; Norek, 2002), and the use of a prepaid returns slip where returns information travels with the returned goods results in an incoming goods flow that is unannounced or even unapproved (cf. Norek, 2002). Consumers are, in a sense, the largest “supplier” of goods, however, the management of an unannounced or even unapproved return flow could be questioned. Increasing the understanding of consumer returns will assist the identification of areas for corrective actions (Stock and Mulki, 2009), and that possibly will assist in increasing the strategic view of RM. Bernet et al (2011) identified the customer
return request as critical in minimising logistics costs and improving the resale revenue of products in the SC. Further, effective gatekeeping of the return flow will also avoid additional costs due to minimizing unnecessary transportation and handling, storing scrap. Rogers et al. (2002) defined the RM process, where RL became one of four activities alongside avoidance, gatekeeping and returns. The increased interest in SCM has shifted the focus from RL to RM, and thus broadened the question regarding RL activities to the RM process. How do organisations manage returns, and further, how do they coordinate the returns process with other processes that are necessary to be competitive. The main purpose of this paper is to increase understanding and contribute to theory development regarding RM in general, and its alignment in the supply chain strategy in specific. How do we create a better understanding of returns management and how do we raise the priority to a strategic position in the organisations and the SC. The decision to/ not to incorporate RM might be based on vague or evidential ideas about returns and its contribution to revenue and profitability. Therefore, this paper investigates how a fast growing e-commerce organisation operating in the northern Europe prioritized RM through analysing their awareness/understanding of consumer returns and RM, analysing what, when, and why, returns were arriving. The awareness/understanding was discussed in relation to their strategic position of RM. Further, to understand what triggers a more strategic positioning of the RM process, we studied the case organisation during their journey from being quite unaware of the impact from their returns, to a position where they started to strategically align RM and plan for the implementation of a new RM process with a more proactive perspective. This research addresses the gap in literature regarding using empirical data to create an understanding and how to manage fashion e-commerce return flow. The next section of the paper presents the theoretical framework that supports the analysis performed and the development of the proposed framework for creating an understanding.

**FRAME OF REFERENCE**

The following section presents the theoretical framework that was used in the research performed. The literature review covers a brief development of and a definition of RM, SCM and presents the dynamic alignment framework and discusses evidence-based management as a tool to create understanding. This paper aims to contribute to the theory development of RM in a fashion e-commerce, discussed in a SCM context, as it is somewhat under represented in literature. SCM, in short, is the integration of key business processes (Croxton, 2001). Traditionally, literature and organisations have focused on the flow of goods towards the consumer. The amount of consumer returns has drastically increased in areas such as e-commerce, and therefore, that particular return flow is important and relatively new focus area in both research and in practise. Stock, Speh, and Shear (2002) reported that consumer returns are valued at more than $100 billion in the U.S. alone, exceeding the GDP of 66% of the countries in the world. The amounts of returns explain that a focus solely on the return process is too narrow, and the integrative part of SCM becomes both interesting and important. Traditionally, literature describes SCM from a manufacturer’s perspective (see Croxton et al., 2001; Christopher et al., 2006). And the return flow is traditionally coupled with the value recovery activity (Rogers et al., 2002). The literature describing returns has traditionally been very cost focused, which is understandable when focusing on value recovery. Returns management is traditionally described in the literature out of a business to business (B2B) perspective (cf. Rogers et al., 2002; Frankel et al., 2010), and often the return itself is described as a failure (Mollenkopf, 2010) in a dyadic relation in the supply chain (SC). The failure approach might be a remnant from the seventies when products were
recalled as result of quality issues (cf. Hoffer and Wynne, 1975; Wood, 1979). The strategic role of returns is very much focused around recovery in different shapes. The recovery focus is somewhat inherent in the view of returns, and in certain definitions of RL the main activities are value recovery or disposal (Rogers et al., 2002). However, Mollenkopf and Closs (2005) argue that the value dimension must include the understanding of multifunctional components of the organisation. This implies that other functions are interested in returns as such, which opens up new areas for both RM research and other reasons for implementing RM.

RM, as defined by Rogers et al. (2002), includes all activities related to avoidance, gatekeeping, RL, and, returns as well as the process cuts across firms in the supply chain and their corporate functions (Rogers et al., 2002, pp. 2) through key business process interfaces. The detailed explanation of the RM process is an excellent model/snapshot of a typical returns process explaining its four different activities. But as with all snapshots, it does not fit everywhere; it is quite evident that it is developed for a B2B context, and it offers no help on how to implement the RM process, as the implementation issue is addressed as future research (Rogers et al., 2002). One activity, RL, has been a quite frequently researched topic since the seventies, and all too often RL seems to be equal to returns or RM. In this paper, we support the view of Rogers et al. (2002) RM process, consisting of four activities including RL. We use the definition of RM as Rogers et al. (2002); however, we see the order/sequence of the activities as important to fit the B2C context of the research and further, we even define some of the activities in a different way. Returns are what are sent upstream in the supply chain, and there is a strategic positioning of how this returns flow should be handled. Here we follow the previous definition, where returns are comprised of a strategic part, and an operational part (cf. Rogers et al., 2002, p. 5-6). The strategic part defines the returns policy that in a sense guides the rest of the activities. In the EU, it is not a discussion on whether to allow consumer returns or not due to the distance selling directive (EUR-lex, 1997), where the interpretation of the EU-directive to national law guides the consumers rights. However, the returns policy often stretches beyond the national law (Mostard and Teunter, 2006); i.e. policies are more lenient/liberal, depending on sheer competition, and it is not uncommon that the allowed return time is extended together with reduced or removed returns postage for the consumers. Hereby, the returns policy reduces the consumer risk buying on a distance, and depending on the level of leniency, it could strengthen the competitive position and thus improve customer loyalty (Rogers et al., 2002, p. 6).

In the fashion e-commerce business, we have witnessed a trend towards more liberalised delivery and returns conditions as a way to cope with competition inside the industry, as well as a way to attract new consumers from the traditional retail chains. Consequently, returns policies are a part of marketing practice (Autry, 2005), and therefore RM is surely a part of the value creation process. Mollenkopf et al. (2011) investigate the marketing/logistics relationship relative to RM. They found that the effectiveness of RM was enhanced when firms coordinated their strategic and operational activities. Clearly RM needs to be efficient; in some cases, however, it seems that it also is a part of the value creation, not only the value recovery. Stock and Mulki (2009) emphasizes that product returns will continue to be a part of business operations, and literature indicates that competition is increasing and consumer demands are surely following the development. Therefore, there is a need to align RM within the supply chain strategy, where the whole supply chain needs to operate efficiently and effectively, and returns are no exception (Stock and Mulki, 2009).

Gattorna (2010) presents a dynamic alignment framework that provides a map and a tool to achieve a superior performance across the supply chain. The underlying logic is to dynamically align enterprises with customer buying behaviour. In e-commerce, the SC focus
would naturally shift further downstream to the e-commerce organisation, which moves the focus from manufacturing towards sourcing of and delivery of finished goods. However, as e-commerce organisations grow, they are likely to try to design and produce their own products and brands in search of greater margins, which shifts focus back towards manufacturing, or at least a combination of sourcing and manufacturing. This exemplifies the need for at least two supply chains, probably even more. In e-commerce, the critical focus is to match the demand from consumers with an appropriate set up of sourcing, replenishment, final distribution, and returns handling activities. If there exists demand variations for different products, it is probably useful to apply diverse sourcing strategies in order to match demand uncertainties with responsive supply strategies. Gattorna (2010) argues that in a typical supply chain, there exists three to four dominating customer buying behaviours that need to be understood in detail. Further, these dominating behaviours cover around eighty per cent of the customers, and the same dominating patterns fit other markets as well. The underlying logic behind the dynamic alignment framework is that an enterprise needs to be aligned with its customers/markets in the context of the prevailing operating environment (Gattorna, 2010). If this environment changes, as in the fashion e-commerce business, we need to adopt a more dynamic view of customers and markets. This has implications on how we craft our strategies, and how we apply them in organisations and in the SC. The dynamic alignment framework assists the dynamism as it starts in a comprehensive understanding of customers’ fundamental needs and matching dominant buying behaviours. It will also help to formulate appropriate response strategies, and to execute those strategies through shaping internal cultural capabilities via an appropriate leadership. The dynamic alignment framework treats the SC as a “living rather than static beast” thus aligning your SC strategies, including RM (authors note), to customer segments (Gattorna, 2010). The question is how to trigger the alignment, i.e. how do organisations become aware of, and create an understanding of RM and aligning strategies including RM to become both efficient and effective.

The alignment can be created or initiated from relying on data as evidence, i.e. evidence-based management. Pfeffer and Sutton (2006) express that: “Evidence-based management is conducted best not by know-it-all but by managers who profoundly appreciate how much they do not know.” Becoming a company of evidence-based managers, organisations can begin to nurture an evidence-based approach by doing a few simple things that reflect this mind-set. Ask your staff for evidence of efficacy every time a change is proposed, and they will sit up and take notice. And if you take time to parse the logic behind that evidence, people will become more disciplined in their own thinking (Pfeffer and Sutton, 2006). However, according to Pfeffer and Sutton (2006), practising evidence-based management changes the power dynamics, replacing formal authority, reputation, and intuition with data. This might seem like a down side for managers, as it might undermine their authority and power. In their study (Pfeffer and Sutton, 2006), they quote a former student who heard a CEO saying: “If the decision is going to be made by the facts, the everyone’s facts, as long as they are relevant, are equal. If the decision is going to be made on the basis of people’s opinions, then mine count a lot more.” The fashion e-commerce business is relatively new, and globalisation and the resultant increase in opportunities and competition fit the evidence-based management approach proposed by (Pfeffer and Sutton, 2006). One way of developing an evidence-base is through treating the organisation as an unfinished prototype and encouraging trial programs, pilot studies, and experimentation. Reward the learning from these activities, even if some fail, and if the managers keep learning while acting on the best knowledge you have, then you can expect your staff to do the same (Pfeffer and Sutton, 2006, p. 70).
RESEARCH DESIGN

RM literature expresses the need for returns management, and that organisations have started to prioritise it. The literature also expresses what the effects are for organisations or supply chains when organisations do prioritise RM (Norek, 2002; Rogers et al., 2002; Stock et al., 2006; Mollenkopf et al., 2007a; Mollenkopf et al., 2007b; Frankel et al., 2010; Mollenkopf, 2010). However, the literature lacks clear suggestions as to why, especially why organisations became aware of RM’s role/importance, and what triggered the alignment. The study began out of an interest in understanding why e-commerce organisations do not prioritise RM, and what the actual degree of awareness and understanding is. As literature lacks detailed information regarding this, there is relatively little guidance on how to frame the study, from a theoretical point of view. A single case is suitable where the framework might be redirected during the study (Dubois and Gadde, 2002).

In order to investigate and analyse the understanding or awareness of what returns and RM mean to an e-commerce organisation, an in-depth single case study research design was chosen. The purpose expresses analysing the awareness/understanding, increased understanding of returns, and strategic positioning of RM and its contribution to revenue and profitability. As the literature lacks detailed information regarding why organisations pursue and start to implement RM, and what triggers this, the longitudinal case study design was chosen to extend existing knowledge and to complement RM theories and framework, and therefore the single case design is valid (Eisenhart & Graebner, 2007). However, Dubois and Gadde (2002) argue the disadvantage of a single case might be that it becomes too context specific, and therefore limits the possibility to generalize results to other settings. However, as the purpose is to extend or develop rather than testing theory, and helping to develop the conceptual framework of RM to the e-commerce setting, the single case is appropriate (Yin, 2009).

Before the research started, the author met with the OM to discuss the organisation’s view of returns and RM in relation to early research ambitions and purpose. Further, discussions were held regarding their interest in a joint research project, and their willingness to support a joint research project with transactional data and participation in interviews. The selection of the case organisation nelly.com was therefore a theoretical sampling, based on their fit with the purpose of the research. The research design consists of three intertwined phases; the first explorative phase aimed at identifying the priority, through analysing the case organisation’s awareness and understanding of consumer returns in general, and RM in particular. This was achieved through on-site visits, conversational interviews, and phone and e-mail conversations, mostly with the operations manager (OM) and the customer service manager. Three interviews (one in each phase) were digitally recorded and held in Swedish, the interviews were transcribed verbatim, and after the analysis the results were translated into English, and the story developed from phase 1 guided phase 2. Qualitative research has its place in guiding more evidence-based research, in suggesting hypotheses, and augmenting other, often quantitative, studies (Pfeffer and Sutton, 2006, p. 67). The results from the interviews in phase 1 are presented as narratives together with 5 clear statements that were analysed ad hoc (Lee, 1998). The 5 statements were contrasted and analysed against transactional data in phase 2. A emerging theory is presented in each phase, based on the story told and statements from key informants (Eisenhardt and Graebner, 2007). Transactional sales and returns data covering a two-year period was exported from the case organisations ERP system. The data contained all customers’ transactional data (orders and returns) from all four markets i.e. no sampling. The second phase aimed at describing and measuring the return flow, and comparing the quantitative results with the results from phase one, thus continuing.
the emerging theory based on more empirical evidence. The second phase ended in a company presentation, where the results from phase 2 were highlighted and described with the framework of SCM and RM. During the presentation, conversations started around concrete actions to take (trigger) based on the view of the OM; regarding the results from phase one and two, and this shows that the three phases were intertwined (see Figure 1).

Figure 1 The study and the three phases

The operationalization of phase 2 from phase 1 was performed through connecting measurable statements regarding the case organisation’s understanding, taken from the performed interviews with the OM. Statements (subjective) that could be transferred to measurable (objective) results from the quantitative data used in phase 2. These are described as awareness in Figure 1, marked with a red-coloured square. The awareness is analysed in two steps between phase 1 and phase 2, and between phase 2 and phase 3.

In the third phase, the discussion and statements regarding the strategic position in phase 1 was evaluated with discussions and statements regarding the level of strategic positioning. This is presented in Figure 1 with the blue-coloured dotted square marking the strategic position. This evaluation is also discussed regarding the comparison of the awareness presented in phase 1, relative the awareness in phase 3.

The results from the performed longitudinal study is based on multiple sources of evidence i.e. triangulation (Jick, 1979), that were both presented at the case organisation and used and verified by key informants during a two year period (Yin, 2009). The OM and the author participated together at a logistics conference in and a reverse logistics conference where the first two phases of the research were presented and discussed both prior and during the conferences. The feedback to the case organisation during and after the research and discussions help throughout the research project should be seen as both a validating and reliability check. Another way of validation is the actual use of and implementation of research results within the case organisation.

RESULTS

The results section is divided in three subsections. The first section presents the results from the research performed in phase 1, the second section presents the results from the
quantitative study in phase 2, and finally the third section presents the results from the concluding interviews performed in phase 3 and the study ended in August in 2012. A summary of the three phases and the research design is presented in Table 1.

<table>
<thead>
<tr>
<th>Phase Objective</th>
<th>Three phase longitudinal case design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 - Identifying awareness/understanding</strong></td>
<td><strong>2 - Analysing the returns flow</strong></td>
</tr>
<tr>
<td><strong>Start</strong></td>
<td>January 2010</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td>Qualitative</td>
</tr>
<tr>
<td><strong>Method</strong></td>
<td>Interview</td>
</tr>
<tr>
<td><strong>Objective</strong></td>
<td>Explore</td>
</tr>
<tr>
<td><strong>Instrument</strong></td>
<td>Open ended conversational</td>
</tr>
<tr>
<td><strong>Procedure</strong></td>
<td>Evaluate priority of RM. Follow up on reasons. Get statements on measurable outputs from the return flow.</td>
</tr>
<tr>
<td><strong>Results</strong></td>
<td>Clear focus on sales and growth, returns no priority. Accept all incoming returns, no questions asked. No way of analysing effects from/or returns. Low awareness of what, when and why returns are incoming.</td>
</tr>
<tr>
<td><strong>Ended</strong></td>
<td>April 2010</td>
</tr>
</tbody>
</table>

**Phase one - Identifying awareness, understanding and priority**
The analysis of the first phase, revealed two themes that clearly express the case organisation’s low focus on RM, and its relative importance in the overall strategy. The first theme relates to the focus on increasing sales and growth to reach a market leading position in Scandinavia. nelly.com’s view on the e-commerce business, is supplying consumers a “decentralised fitting room” and supplying a wide product range, supported with a speedy delivery and accessibility. Accessibility is, according to the OM at nelly.com, the main driver behind consumer’s purchasing fashion online. To offer a speedy delivery, all products that are presented online are physically in stock. The case organisation’s expanding product range has led to a steady increase in the supplier base, and during the interviews there were around 400. There was no internal or external feedback loop to other functions such as design, purchasing, or to suppliers.

The second theme relates to the overall awareness of the consumer return flow as such. There was no formal returns strategy in place; however, the aim was to make it as easy as possible
for the customer to return while still being economically defensible. The returns policy at nelly.com is based on the distance selling directive (EUR-lex, 1997) and it is internally decreed not to question a customer return. Returns information is gathered via a pre-printed return form, where customers, on a voluntary basis, inform nelly.com what is returned and for what reason, using predefined return reason codes. In the organisation, there was an idea about the most frequent return reasons, but they are not analysed as to their proportion or distribution among customers (1), markets (2), product groups (3), or products (4). However, the distribution was believed to be quite uniform (statements 1-4). However the case organisation did not analyse returns or the returns flow, merely checked the aggregated return rate on an annual basis.

When returning, the customer uses a pre-printed return form together with a prepaid return label, and either returns using the postal system or drops the return at a service point. Thus, the information regarding the incoming returns is transported with the returning goods, and therefore the awareness of what, when, and why returns are returned is close to none. There is a possibility that some conversations have started via email (prior returning), but this does not normally affect the returning process as such. The returns policy, found at the website, informs the customer about the return conditions, including returns freight cost, and the allowed return time, i.e. 14 days after receiving the delivery. There is no tracking of the time between delivery/pick up and the day when customers returns, i.e. if they return within the allowed 14 days, and nelly.com will normally not question a return even after 14 days. The OM estimates that 70 % of all returns are returned within 3-5 days after delivery (statement 5). All communication with customers is received via email and nelly.com focuses on a prompt answer to all questions or complaints and the focus is on a short response time. If customers regret a purchase, after the delivery to a pickup place, contacts the customer support via email, and wishes to cancel the order, i.e. not pick it up, the response from the customer support will be to pick it up and then return it.

The case organisation’s awareness of, prioritizing, and focus on RM in general and consumer returns specifically were very low. Having the view of delivering “a decentralised fitting room” as their overall function in their business of fashion e-commerce, and not consider RM as strategic, was surprising to say the least.

**Phase two – Analysing the returns flow**

The aim of the quantitative study, was to quantitatively describe certain activities that represent answers from the interview section. At the start of the project, the case organisation occasionally gathered aggregated returns data, illustrating returns percentages per market. To illustrate this, we measured the number of shipments and returns and the returns percentage over the two years time the data covered. There were 498,050 outgoing shipments and 115,490 returns, giving an average return percentage of 23%.

The product groups’ proportion of sales and returns, together with their returns percentage, are presented in Figure 2.
The sales and returns levels as percentage of sales and returns varies, and in some groups the return level exceeds the sales percentage, indicating areas to study further applying returns avoidance (see Rogers et al., 2002, p. 9). Party dresses represents a typical product group to focus on, with both a significant proportion of sales and representing a large proportion of returns, with an average return level of 20%. Other product groups such as trousers & shorts, accessories, jumpers, and sweaters are frequently returned, and for that reason interesting to study.

Customers are asked, when returning, to submit the return reason using a pre printed return form. In Table 2, the distribution of the return reason codes are presented, separated over the different markets. The quality return reason in the table represents three different quality return codes in the data that are grouped together in the table. “Does not correspond to expected quality” is the single most given quality return reason by customers when returning.

In Figure 2, we presented the sales and returns distribution among the top fifteen product groups at nelly.com. In Table 3 the distribution of return reasons are presented per product group. As presented in Figure 2, quality was the most frequently given return reason. The top “score” per product group is coloured red, and quality is the major issue for nearly all product groups, except for jeans. Not collected is the top reason for the jeans group. The five most outstanding product groups from Figure 2 are marked with a red coloured square in Table 3, and three of the five product groups represent the highest value within the respective return reasons, marked with *. Three groups are not marked with an * due to very small differences between the product groups. Combining the top five groups with the highest value (marked...
with *) gives us one group with sizing issues to deal with and two groups with quality issues to confront. The outlier in not collected, jeans with 40%, needs attention, as well as party dresses, which were found to represent 20 % of all returns in Figure 2.

Table 3 Return reasons that customers use when returning the top fifteen most frequently returned product groups at nelly.com

<table>
<thead>
<tr>
<th>Product group</th>
<th>Size</th>
<th>Late delivery</th>
<th>Quality</th>
<th>Wrong delivery</th>
<th>Defect</th>
<th>Other</th>
<th>Not collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Party dresses</td>
<td>40%</td>
<td>0,3%</td>
<td>44%</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Shoes</td>
<td>40%</td>
<td>0,2%</td>
<td>35%</td>
<td>4%</td>
<td>5%</td>
<td>4%</td>
<td>12%</td>
</tr>
<tr>
<td>Bikinis</td>
<td>32%</td>
<td>0,2%</td>
<td>50%*</td>
<td>2%</td>
<td>2%</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>Jeans</td>
<td>14%</td>
<td>0,3%</td>
<td>45%</td>
<td>3%</td>
<td>3%</td>
<td>5%</td>
<td>29%</td>
</tr>
<tr>
<td>Top</td>
<td>20%</td>
<td>0,2%</td>
<td>29%</td>
<td>5%</td>
<td>2%</td>
<td>4%</td>
<td>40%*</td>
</tr>
<tr>
<td>Party dresses</td>
<td>12%</td>
<td>0,2%</td>
<td>47%</td>
<td>4%</td>
<td>7%*</td>
<td>5%</td>
<td>24%</td>
</tr>
<tr>
<td>Shoes</td>
<td>32%</td>
<td>0,3%</td>
<td>50%*</td>
<td>3%</td>
<td>1%</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Bikinis</td>
<td>31%</td>
<td>0,2%</td>
<td>44%</td>
<td>4%</td>
<td>2%</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Jeans</td>
<td>30%</td>
<td>0,2%</td>
<td>49%</td>
<td>3%</td>
<td>2%</td>
<td>4%</td>
<td>13%</td>
</tr>
<tr>
<td>Top</td>
<td>35%</td>
<td>0,3%</td>
<td>33%</td>
<td>4%</td>
<td>2%</td>
<td>4%</td>
<td>22%</td>
</tr>
<tr>
<td>T-shirts</td>
<td>50%</td>
<td>0,1%</td>
<td>33%</td>
<td>3%</td>
<td>2%</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>Other accessories</td>
<td>37%</td>
<td>0,2%</td>
<td>43%</td>
<td>3%</td>
<td>2%</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>Bra &amp; top</td>
<td>34%</td>
<td>0,3%</td>
<td>33%</td>
<td>4%</td>
<td>3%</td>
<td>5%</td>
<td>21%</td>
</tr>
<tr>
<td>Leggings &amp; Body’s</td>
<td>31%</td>
<td>0,3%</td>
<td>44%</td>
<td>2%</td>
<td>4%</td>
<td>4%</td>
<td>16%</td>
</tr>
</tbody>
</table>

The allowed time to return is 14 days after receiving. To illustrate the time between delivery and return, we measured the time in days between deliveries from nelly.com and when returns are opened and registered at nelly.com. We allowed a two-day delivery and a two-day redistribution, and therefore the allowed time was extended to 18 (2+14+2). The return time is presented in Figure 3.

Figure 3 Return time, days between delivery from nelly.com and returned shipment opened and registered at nelly.com

To illustrate customers’ purchase and returns behaviour, we created a 2x2 table with two dimensional buying and returning behaviour. The buying behaviour was divided in two
groups, depending on the repetitiveness (see Table 4). The returning behaviour was divided in two groups, depending on if the customer has returned or not. We present the four groups of customers around three different measurements: the percentage of customers, their percentage of total sales, and net contribution. We also separate the groups by the Swedish (SE), Norwegian (NO), Danish (DK), and Finish (FI) markets. The contribution was calculated as the price of goods sold where the purchase price, warehouse handling cost, delivery cost, and returns costs were subtracted, presenting the contribution per customer order and summarised per customer.

*Table 4 Customer purchasing and returning behaviour, and their contribution on sales and net contribution grouped over markets*

<table>
<thead>
<tr>
<th>Return behaviour</th>
<th>Customers</th>
<th>Sales</th>
<th>Contribution</th>
<th>Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non returner</td>
<td>48%</td>
<td>19%</td>
<td>24%</td>
<td>SE</td>
</tr>
<tr>
<td></td>
<td>53%</td>
<td>25%</td>
<td>29%</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>60%</td>
<td>34%</td>
<td>40%</td>
<td>DK</td>
</tr>
<tr>
<td></td>
<td>49%</td>
<td>22%</td>
<td>29%</td>
<td>FI</td>
</tr>
<tr>
<td>Returer</td>
<td>10%</td>
<td>6%</td>
<td>3%</td>
<td>SE</td>
</tr>
<tr>
<td></td>
<td>9%</td>
<td>7%</td>
<td>3%</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>11%</td>
<td>9%</td>
<td>4%</td>
<td>DK</td>
</tr>
<tr>
<td></td>
<td>15%</td>
<td>11%</td>
<td>5%</td>
<td>FI</td>
</tr>
</tbody>
</table>

**Phase three - Identifying changes**

Phase 3 commenced after phase 2 in 2010 and ended in August 2012. During that period, the researcher visited the case organisation several times, and communicated with personnel from logistics, operations, customer service, and senior management, among others. Since the start of the research project in 2010, it has taken the senior management at nelly.com quite some time to understand and accept that consumer returns and RM is of strategic matter for the organisation. The case organisation has started to work with RM internally and developed a formal written and outspoken returns strategy. Since the start of the research, the organisation has expanded into new markets in Europe such as Germany, Holland, and the UK. The return rate has increased dramatically, especially in Germany, with another interpretation of the consumer directive (EUR-lex, 1997) where customers are entitled to return free of charge. The OM is convinced that the return rate will continue to increase in the future depending, on an increased pressure from competitors who force them to be more liberal in terms of delivery and returns policies. They have witnessed a group of customers whom often order more than one size, probably to increase the hit rate in terms of size and fit. These customers are more profitable compared to customers not ordering extra sizes, even if they return to a greater extent. Nelly.com has started to analyse returns and to feedback important returns information internally to the purchasing department, who use it in their contact with suppliers.

The case organisation has started to adjust their delivery and returns policies as a way to stay competitive when competitors offer more liberal policies. One result from these experiments was that the average order sum decreased when they offered free delivery and free returns. To safeguard from this changed buying behaviour, they also tried to set a minimum order sum requirement for the customers who wanted to get the free delivery and free returns offer. The meaning behind the offer is to be competitive, to sell more, and to continue to grow. This could result in that some customers will spend more only to get free delivery and returns with the intention to return some items (Rogers *et al.*, 2002, p. 10). Nelly.com has reached a stage...
that they try to analyse projects that they perform out of a profitable perspective. It is not viable to look from either a selling perspective or a cost perspective: they need to have both perspectives. The main goal with the returns projects is not to reduce the return level as such; rather, nelly.com are trying to identify how to avoid the unnecessary and unwanted returns in the future. Unnecessary returns are defined as the returns that the case organisation could possibly avoid through information they already have in their system. Handling unwanted returns (low value and defective items) adds cost instead of recovering value, i.e. the main reason behind accepting returns. nelly.com would like to safeguard the return system from these kind of returns, if possible. The key way to do this is to start a project to implement a web registration for customers who are returning merchandise. This project has been in nelly.com’s IT project pipeline for some time, but capacity restraints and the relatively low priority of RM have hindered them from pursuing with the development. The key behind reducing unnecessary and unwanted returns is to separate the information flow from the product flow. This has been done manually already, as the case organisation have had quite a high percentage of incorrectly delivered items (see Table 2). To avoid this, and to get information from customers fast if they get the wrong or defective product delivered, they inform customers with a message on their websites to contact customer service.

In July 2012, they launched a pilot version of the web registration, the main reason behind a web registration of returns is that it presents an opportunity for nelly.com to take control over the return flow and get the return information into their system in real time. Together with the web registration, the return process has developed, and now the case organisation does not send a pre printed paper return form with the outgoing shipment. This means that it is possible form nelly.com to block unwanted returns to enter the return system as they need to register the return on the website before they are accepted into the system.

The return process at nelly.com has started to develop but now they RM group will work together with the other functions to decide what type of return information they will need from customers returning and what they can and will use it for. The old paper based return reason codes can now be developed further as the new system is much more dynamic compared to a printed return form.

DISCUSSION AND CONCLUSIONS

Investigating and analysing transactional sales and returns data can be used to increase the understanding of the strategic importance of RM in an organisation and benefits to the SC from improved RM. Especially in the B2C e-commerce SC that stores a vast amount of data. Anecdotal evidence presented in previous research, such as the average return rates for different industries (Norek, 2002; Rogers et al., 2002; Stock and Mulki, 2009), discussions regarding the relative importance of RM, are difficult to relate and use as evidence for starting to implement or work with RM strategically in an organisation. The relatively low awareness of consumer returns and RM, as presented from phase 1, was a direct result from the focus on selling and growing, and strategically down prioritising RM. There is likely a relation between the level of awareness, understanding, and priority. The research design in the study performed, where the level of awareness was increased through the performed analysis in phase 2, which increased the understanding of the importance of consumer returns and RM to the case organisation, which in turn changed the priority of RM. The strategic work with RM, performed between phase 2 and phase 3, are definitely signs of increased awareness and understanding. In a rapid evolving business such as the fashion e-commerce, it is understandable that what has previously been described as nuisance and the negative side of doing business was down prioritised, especially when growing at a rate such as the case
organisation, nelly.com. However, studying Table 4, it became obvious to the case organisation that their customers buying behaviour are not uniform and that the return possibility in itself probably means different things to the respective customer groups.

The research performed during phase 1 to phase 3 has proven that the distribution of consumer returns are not as uniform as one might believe when studying aggregated data, and reading about average return percentages in reported research. The use of transactional data as evidence presenting a more distributed return pattern has started a reaction internally at the case organisation, towards a more evidence based management. The data used is an objective representation of customer behaviour, as the research analysed buying and returning patterns (see Table 4, and Figure 2) and return time of products (see Figure 3) from real behaviour. The use of return codes (see Table 2, Table 3) is possibly an area for discussion regarding reliability, due to the use of return reason codes given by customers. There are possibly areas open to interpretation from both sides regarding the meaning of the return codes. Some customers could also try to fraud nelly.com through blaming them, and thereby receive some benefits such as reduced return freight costs. However, the use of all possible data, no sampling increases the reliability, as it is quite unlikely that all data are misinterpreted or misused. The relatively small differences in the magnitude of the data in Table 2 shows that customers in the four markets are reporting quite similar frequencies of the respective return codes, with the exception of not collected and quality. The not collected seems to be mostly a Swedish problem, and is likely related to the cash on delivery method used in Sweden mostly. The level of quality issues in Finland might be related to their legal right to return free of charge. However, this needs more qualitative future research.

The research reported fits the ideas behind the dynamic alignment framework; it is quite clear that the two initial phases have increased the awareness of the importance of RM and understanding of how customers behave, regarding buying and returning. That also triggered a more proactive approach towards consumer returns and RM. We have presented results of varying buying behaviour (see Table 4) that needs more research in order to understand why customers behave differently, and how and if they need a more differentiated supply of services, due to varying customer values and demands as presented byGattorna (2010). The reported research has initiated an alignment process at nelly.com, with the use of transactional data encouraging and starting a more evidence-based management of consumer returns. The process will need to continue to align, as customer behaviour is likely to continue to change due to increased competition, et cetera. The case organisation and the e-commerce business will likely try their best to be competitive, and change policies and processes.

The reported research starts to fill the literature gap as to why RM and consumer returns are strategically important to the fashion e-commerce business. We have presented empirical evidence in phase 2 that increased the awareness of this importance and triggered a more proactive and strategic approach towards RM. This new understanding has also started a work to dynamically align strategies with customers varying behaviour that ultimately indicates heterogeneous demands and values. This awareness and understanding was quite far from the aggregated return rates reported both by literature and in use at the case company at the start of the research.
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Improved Returns Information System to facilitate Gatekeeping and Returns Avoidance

ABSTRACT

Purpose of this paper
Consumer returns within the e-commerce business are traditionally managed without any knowledge about the state of or the reasons behind incoming returns, due to the inability to separate information flow from goods flow. This paper aims to identify and describe supply chain needs for a returns information system and to develop a framework that facilitates gatekeeping and returns avoidance.

Design/methodology/approach
The research uses a single case design, combining qualitative and quantitative data from a Swedish e-commerce organisation and its distribution network. The study relies mainly on the framework of returns management with an extension into information and communication technology. The starting point of the research was explorative containing semi-structured interviews and on site visits that guided the rest of the study and the retrieval of production and returns data and the study ended more descriptive.

Findings
The paper shows that the proposed returns information system framework could increase both the efficiency and effectiveness of the returns process through the ability to separate information and goods flows and ultimately steer the returns flow to maximize value recovery and avoid unnecessary returns.

Research limitations/implications (if applicable)
The research is based on a single case and we do not claim to generalise the findings, we merely propose certain potentials and suggests further research to test and evaluate them. The main contribution is within returns management and consumer returns in e-commerce. The study is limited to deal with the case organisation and the distribution and returns flow and does not deal with the receiving party i.e. the end-user as it focuses on technology.

Practical implications (if applicable)
The presented research results indicate that e-commerce organisations can both improve their execution of the returns flow and avoid unnecessary returns through combining returns information and information about outgoing shipments.

What is original/value of paper
This study complements previous research in the area of returns management and supply chain by exploring supply chain needs on returns information systems in the growing business of e-commerce.

Keywords: Returns Management, Gatekeeping, Returns avoidance, e-commerce, ICT, Closed-loop Supply Chain Management
1. INTRODUCTION

Returns are inherent in the business model of e-commerce due to the customer’s inability to test and evaluate products, services or new suppliers prior to ordering. The main purpose of any returns system is to recapture value from whatever is sent backwards, being it products or packaging material, from any position in the supply/demand chain.

According to Rogers and Tibben-Lembke (1999) most catalogue firms have developed returns programmes internally and they use their reverse logistics capabilities strategically due to high return rates and the increasing cost of handling returns. Most organisations still see returns as a nuisance (Stock et al., 2002), and especially commercial returns (Blackburn et al., 2004). According to Autry (2005), firms often accept anything that a customer wants to return regardless of the return reason or condition, if they perceive that it will benefit their relationship with the customer. Accepting any return into the system without knowing the reason or condition of the individual item does not guarantee value recovery, as a high proportion of the returns systems cost relates to transportation and handling. Therefore, gatekeeping is an important activity that safeguards the returns system from unwanted returns where value recovery cannot be guaranteed (Rogers et al., 2002). Gatekeeping refers to an activity where return requests and returns are screened and the activity is normally performed at the entry point into the returns system. A returns system that accepts all returns (i.e., without gatekeeping) adds additional cost to the handling of returns, without guaranteeing value recovery, and therefore, reduces the return system’s efficiency. Determining the best channel for processing returns is of critical importance for maximizing revenues from returned products (Rogers and Tibben-Lembke, 1999). Low value and defective products, that later will be thrown away, should not be routed the same way as products where value recovery can be guaranteed.

Returns avoidance aims to find ways to minimize return requests or returns by optimising the development, sales and delivery of products for this purpose (Rogers et al., 2002). The way of executing returns avoidance may vary; improved quality, better information or instructions, and better service are some common strategies. Improved quality is understood in terms of a reduced number of defective products, better instructions or information in the sense that the consumer/user understands both what he/she is purchasing as well as how to operate it.

A returns system without proper gatekeeping and returns avoidance procedures may fail to support a growing e-commerce business; the cost of handling returns may increase the price necessary to charge for products and services to a level that might significantly affect both sales and revenue and also increase the environmental burden on the transportation network. Returns management (RM) has attracted the interest of practitioners and academics since the beginning of the twenty-first century. Rogers et al. (2002) presented these future research opportunities:

- Determining the costs and benefits to the supply chains derived from improved returns management.
- Determining which methods of gatekeeping are most effective in managing the tradeoffs between costs and customer service.
- Identifying the information technology and types of systems that are needed to fully support returns management.
These opportunities have not yet been addressed and this research aims to do so. Therefore, our aim is to identify returns management requirements for a RM information system, and to present an information technology framework needed to support a real-time implementation of gatekeeping and returns avoidance in e-commerce as parts of supporting returns management addressed by Rogers et al. (2002). Furthermore, we also seek to analyse and present some quantitative evidence for its potential based on how the presented framework would affect the returns flow if implemented at the case organisation, nelly.com, in terms of benefits such as reduced costs and less transportation.

This paper starts with a brief review of the literature on returns avoidance and gatekeeping, within a RM framework complemented with a brief summary of information communication technology (ICT) focusing on service-oriented architecture (SOA) and event driven architecture (EDA). Thereafter, it continues with a presentation of the research methodology used. It is followed by findings from the single case study where the returns system is investigated and contrasted against the framework of RM, and focusing on returns avoidance and gatekeeping. It concludes with a discussion in which the case findings are analysed and ends with conclusions and future research.

2. RETURNS MANAGEMENT

Returns in some shape or form, have been studied topic since the seventies (Hoffer and Wynne, 1975), where early publications in this field dealt with product recalls in the automotive industry and later within the pharmaceutical and cosmetics industry (Wood, 1979). In the early days, the consumer focus was quite clear, but the initiator of interest in returns was due to legislative concerns. The product recall was an action by firms to demonstrate their efforts in removing harmful or defective products from distribution channels (Wood, 1979).

Since the seventies, research has focused on reverse logistics (Tibben-Lembke, 1998; Rogers and Tibben-Lembke, 1999), with the emphasis on efficient redistribution and returns handling of used products (de Koster et al., 2002; Stock et al., 2002), packaging material, and inventory control of returned products (de Brito and van der Laan, 2009). The focus has been on resource reduction, remanufacturing (Seitz and Peattie, 2004), product recovery (Thierry et al., 1995), reuse and recycling (Stock et al., 2002).

Since the definition of supply chain management processes (Croxton et al., 2001) and specifically returns management, authors have addressed different views and stressed the importance of RM. Rogers et al. (2002) addressed the implementation issues of RM and declared that the correct implementation of RM should not only focus on efficient handling of the reverse flow, but also provide opportunities to reduce unwanted returns and to control reusable assets.

RM consists of strategic and operational levels. The strategic part of RM develops the road map for the execution at the operational level. The road map gives a structure for the implementation of RM within the organisation and across supply chain partners (Rogers et al., 2002). Furthermore, the structure incorporates six strategic sub-processes that coordinate all six operational sub-processes (see (Rogers et al., 2002, pp. 6) via the process interfaces with the other seven supply chain processes (see Figure 2.1). This is performed to ensure that all returns are managed in accordance with the RM goals and strategies, and also to ensure
that the strategy is aligned with other processes, such as customer relationship management and supplier relationship management.

Figure 2.1 Returns Management Sub-Processes and Process Interface (Rogers et al., 2002, p. 6).

Strategically the overall competitive performance of a firm can be improved through developing and using RM capabilities to both reduce costs and increase revenue. Reducing costs primarily refers to increasing the effectiveness and efficiency in the returns flow, but increasingly the competitive aspects of RM have broadened its focus to the revenue side, or value creation, of the returns process. Mollenkopf and Closs (2005) argue that most organisations are cost focused and not revenue focused when it comes to handling returns. To fully understand the potential of returns, organisations need to understand the marketing and logistics components of the process. However, RM is increasingly being recognised for just that purpose, namely affecting competitive positioning (which affects sales), and it is nowadays seen as an important link between marketing and logistics (Mollenkopf et al., 2007a). If organisations still view returns as a cost driver and not as a competitive edge, they miss the potential value it could add to their business and to their customers (Mollenkopf et al., 2007a). Wood concluded as far back as 1979 that customer satisfaction and company image were factors to consider when recalling products (Wood, 1979).

From a consumer’s perspective, online purchases represent a certain level of risk (Mollenkopf et al., 2007b), which relates to concerns about product quality, size and fit issues. RM strategies using returns policies can remove the perceived consumer risk through mitigating the risk towards the seller (Rogers et al., 2002). In e-commerce the consumer also has to wait for the delivery of the product or the execution of the service, which further adds to the risk that they perceive. Mollenkopf et al. (2007b) argue that a well executed returns handling system could act as a service recovery opportunity, whereby the customer evaluates the ongoing service delivery during a particular purchase experience. According to Andreassen (2000), service recovery affects customer loyalty, which follows arguments by Harrison and van Hoek (2008) that service performance is important because it is customers’ perceptions of
delivered products and services that determines their loyalty. Therefore, the importance of RM should not be underestimated in distance sales. The findings of Mollenkopf et al. (2011) suggest that when RM is recognised as a matter of a firm’s competitiveness, the joint role of operations and marketing is imperative to success.

Returns are caused by a plurality of factors depending on the position in the supply chain and the nature of the product; therefore, the cost of handling returns is a daunting task to measure and control. The Global Supply Chain Forum and authors of ‘The Returns Management Process’ (Rogers et al., 2002, p. 3-4) defined five types of returns:

- Asset returns,
- Consumer returns,
- Environmental returns,
- Marketing returns,
- Product recalls.

This research focuses on consumer returns within e-commerce, which are a problem because their unpredictable nature makes them difficult to anticipate, and therefore affects the handling and execution of the returns.

In this paper we use the following definition of returns management:

“The part of supply chain management that includes returns, reverse logistics, gatekeeping and avoidance. (Rogers et al., 2002, pp. 5)”.

Returns avoidance aims to find ways of minimizing both return requests (Lambert, 2004) and returns by developing and selling products in such a manner (Rogers et al., 2002). It is this activity that differentiates RM from earlier reverse logistics, because by successfully applying avoidance, the returns are not sent backwards and by definition could not fall under the umbrella of reverse logistics (Rogers et al., 2002). The ways of executing avoidance may differ; improved quality, better information or instructions, and better service are some common applications. Improved quality can be measured by a reduction in the number of defective products or the provision of better user instructions or information. This can be combined with better service. For example, home installation and education by the retailer Black & Decker integrates returns and product development to learn from previous returns in order to avoid future returns (Rogers et al., 2002). For online or catalogue retailers, product consistency is a critical issue because many returns result from sizing and fit issues. Victoria’s Secret’s RM team works with their suppliers to apply sizing guidelines across all products in a uniform manner, which reduces costs and improves customer satisfaction (Rogers et al., 2002).

Gatekeeping is the screening of return requests and the physically returned item (Rogers and Tibben-Lembke, 1999). Return requests can be prevented (avoidance) by providing better information on or training for product operation (i.e., user friendliness). Gatekeeping assures that only allowed returns are accepted and then guided to the correct point. The gate could be exemplified as a valve opening for “wanted” returns and closing for “unwanted” returns; i.e., the ones where value creation cannot be accomplished. Properly executed, gatekeeping improves the disposition of returns, reduces cost, and increases customer satisfaction (Rogers and Tibben-Lembke, 1999; Mollenkopf et al., 2011). The result is increased effectiveness and efficiency. Normally it is applied at the entry point but can be applied to more than one place in the returns flow (Rogers et al., 2002). In Figure 2.2, returns are entering the returns system.
through a valve (grey circles) and guided (governed by rules) to the best disposition, given their costs and possible value creation. The valve arrows pointing downwards guide the returns to recycling, while the bent arrow pointing up and to the right channels the returns into the normal product flow after they have been inspected and handled (which could include finishing and repair). Moving to the left in the returns flow normally implies more work done to the returns (cf. (Thierry et al., 1995)).

The gatekeeping activity is crucial in distance sales; the longer it takes to make the disposition decision of a returned product, the lower the expected market value of the returns when reinserted into the normal product flow (Mollenkopf et al., 2007a), meaning that late returners (outside the stipulated return window) affect the possible value creation.

Time is of essence and it is quite evident in both forward and reverse flows. Rogers et al. (2002) propose better information to avoid returns; however, it is not clear if they address the organisations or the customers. To be able to avoid unnecessary returns and to gatekeep against unwanted returns, an effective and efficient coordination of activities within the focal company and the rest of the supply chain necessitate a seamless information flow. The increasing complexity of supply chains and the development of information technology has regained the interest in information as such and the value of it (de Brito and van der Laan, 2009). Coordinating processes and activities within supply chain management (SCM) in e-commerce (especially returns management, customer relationship management (CRM) and supplier relationship management (SRM)) to maximize the value recovery of returns, while still delivering value to the customer, shifts focus from today’s paper intensive returns information flow to the use of advanced information and communication technology, such as service-oriented architecture (SOA) and event driven architecture (EDA).

Mollenkopt (2007b) argues the potential from addressing returns from a recovery perspective through linking marketing and SCM, and according to Andreassen (2000) service recovery affects customer loyalty. However creating loyal customers in e-commerce through service recovery et cetera necessitates a dynamic view of the RM processes that are in synchronisation with customers varying requirements. Previous literature describing RM and its activities are not addressing the volume of returns that are becoming evident in e-
commerce. The retrieval of a returns request, as suggested in Figure 2.1, to guide the rest of the operational sub-processes seems outdated and suggests the development of a frame work of a more contemporary returns information systems as addressed in the coming section.

2.1. Information and Communication Technology

The new breed of ICT systems focuses more on supporting the processes instead of focusing on the technology. Systems based on a service oriented architecture allows the focal company to be flexible and agile. The shift from a traditional focus on functions to processes in SCM is supported by SOA, as it is designed to mimic the flow of business processes. It aims to structure information technology (IT) in a more flexible manner and it is an architectural style that attempts to bridge the gap between IT and business (Reldin and Sundling, 2007).

The main components, from an ICT perspective, necessary to implement a business rules based and automated returns management solution with a focus on returns avoidance and gatekeeping are:

SOA – an architecture which is platform agnostic and allows a process setup which integrates the order system, warehouse system, CRM system and the logistics system (legacy or proprietary systems). This is crucial when handling avoidance and gatekeeping at the entry point (point of return) and validating on customer and item level. Large volumes also demand a high level of automation at the entry point. SOA based services are already used by the software industry today but usually in Business To Business solutions.

EDA - handles events and message streams in the processes. This is the logical placement for the business logic needed to automate avoidance and gatekeeping. The possibility to combine streams and create new services that will add value to the process is of importance in returns management. EDA based services are already used by the software industry today but usually in Business To Business solutions.

Figure 2.3 Service-Oriented Architecture, integrating customers and the rest of the SC, adapted from Lager (2006)
3. METHODOLOGY

The study started exploratory and the overall question could be expressed as “what could be learnt from studying” (Yin, 2009) as previous research and literature was not illuminating. It later became more descriptive as data was collected, organised and analysed and the potential of the study results was described.

A single case study was performed using nelly.com as the case organisation. Case studies are suitable for in-depth studies of real-life phenomenon (Yin, 2009) with clear boundaries such as organisations (Ellram, 1996). A single case study is appropriate when the case in itself is extreme or unique (Eisenhardt, 1989; Ellram, 1996). The case company was selected mainly due to their fit with the aim and the overall research ambition, together with their market position and innovative and flexible leadership, which altogether created a dynamic research environment. Further, there are no prior studies conducted where requirements on a contemporary returns information system are presented that supports returns avoidance and gatekeeping together with a quantitative analysis, which make the case unique and justifies a single case.

The data was collected through semi-structured interviews, onsite observations and through the collection of sales and returns data covering all orders and returns during 2008 and 2009. Semi-structured interviews were chosen as they provide flexibility, which is in line with the exploratory character of the research. The literature review revealed interesting gaps and questions that were used as an initial interview protocol. During the year long research, the researcher visited the case organisation on seven occasions performing two interviews with the organisations’ operations manager, regarding the case organisation, their distribution and returns systems, the interviews lasted approximately two hours each. The analysis of the interviews raised new questions that were addressed through three follow up interviews on site and via the telephone. Further, informal discussions were conducted continuously over the phone. All data was collected in a case database and the onsite interviews were recorded and transcribed. The main informants were the case organisations operations manager and customer service manager. During the study the informants gave their approval for the collected data to be published and were allowed to read and comment on the results presented in the paper.

The research followed an abductive approach (Kovács and Spens, 2006) using a systemic combing technique (Dubois and Gadde, 2002) whereby the initial step was exploratory. A new framework was produced and tested against the literature in addition to the case data, which revealed interesting results.

The results from the interviews were analysed using the framework or RM, the suggestion of contemporary returns information system (RIS) was developed using the framework of RM and ICT. Key informants were used to both validate the findings and to correctly understand the exported quantitative data. The use of multiple sources i.e. interviews, production and returns data in the data collection phase increases the validity of the research (Yin, 2009), To increase reliability we used both a case study protocol to steer the research as well as a case data base to store all data.

4. CASE FINDINGS

The case organisation started its business in Sweden in 2004. Since then, their annual growth rate has been impressive and has reached a consecutive three-digit figures. nelly.com’s impressive growth is generated through an extensive and growing product range and through
market expansion (see Table 4.1). The implication of the fast expansion in both product range and markets is an increase in the complexity of handling the forward and reverse distribution. nelly.com has addressed the complexity regarding balancing the incoming and outgoing goods through only displaying products in their web shop that are in stock, which means that they can promise customers a short delivery time. At the time of the research, the case organisation did not have any outspoken returns strategy other than that the returns process should be as easy as possible for customers returning and economically viable for nelly.com.

Table 4.1 Introduction to markets

<table>
<thead>
<tr>
<th>Market</th>
<th>Sweden</th>
<th>Norway</th>
<th>Finland</th>
<th>Denmark</th>
<th>Germany</th>
<th>Holland</th>
</tr>
</thead>
</table>

The case organisation is situated in Borås Sweden, where their warehouse and operations are located. Their product range spans from fashion accessories to shoes, and all products are purchased; however, they design their own collections, which are produced in the Far East using local agents as intermediaries. They have around four hundred brands in their product portfolio, and approximately thirty percent (a value that is increasing) of them are owned by nelly.com. Sales of their own brands constitute approximately fifty percent of the case organisation's contribution margin. The driving forces behind own brands are greater margins, greater control of and faster supply.

Since 2007, nelly.com’s turnover has increased from 15 million SEK to more than 400 million SEK in 2010, and the order and returns data shows a considerable increase in outgoing shipments between 2008 and 2009 (see Table 4.2).

Table 4.2 Order and returns data for delivered and returned shipments and units 2008 - 2009

<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delivered</td>
<td>Returned</td>
</tr>
<tr>
<td>Sweden</td>
<td>87 887</td>
<td>22 577</td>
</tr>
<tr>
<td>Norway</td>
<td>10 779</td>
<td>2 234</td>
</tr>
<tr>
<td>Denmark</td>
<td>2 821</td>
<td>614</td>
</tr>
<tr>
<td>Finland</td>
<td>925</td>
<td>271</td>
</tr>
<tr>
<td>Total</td>
<td>102 412</td>
<td>25 696</td>
</tr>
</tbody>
</table>

A considerable amount of the outgoing shipments and delivered units are being returned (see Table 4.2), and Finnish customers are the most frequent returners. The returns allowance is different for the Finnish customers because they are the only ones that are entitled to return goods free of charge by law. The Finnish interpretation of the European consumer directive (EUR-Lex, 97) stipulates the conditions of the returns allowance for organisations such as nelly.com.

All outgoing shipments are delivered together with a return form and a pre-paid return freight slip. The paper return form is used to retrieve returns information from the returning customer.
regarding returned items and the returns reason code amongst other details. At present there is no screening of either return requests (not used) or the physical return along the physical flow i.e., all returns follow a predetermined redistribution flow irrespective of return reason or the state of the individual return. The only gatekeeping activity is performed at the warehouse in Borås (see decision point 1, Figure 4.1) when returns arrive at the returns desk. The operator opens the shipment, performs a return registration into the system and makes a decision about how to handle the return using a manual written process. This means that vital information about quality issues, sizing problems and performance may be delayed for at least the time it takes for the returns to physically reach the returns desk and the actual gatekeeping activity.

Figure 4.1 A typical distribution and returns system in e-commerce used at nelly.com

The customer is requested to use the paper returns form to inform nelly.com about the reason for returning an item, and to return the form with the goods. From the collected return reason codes it was found that a quite large number of returns (see Table 4.3) were sent back to nelly.com for reasons that limit possible value recovery i.e., for defective products. From the interviews performed, it was understood that most defective items were thrown away as waste, including even those purchased by nelly.com from other companies. Some of nelly.com’s suppliers require that returns are sent back to them before they will issue a refund, while others prefer not to receive any returns.

Table 4.3 Return reasons and their percentage of all returns

<table>
<thead>
<tr>
<th>Return reason</th>
<th>Percent of returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too small</td>
<td>18,4%</td>
</tr>
<tr>
<td>Too large</td>
<td>15,5%</td>
</tr>
<tr>
<td>Late delivery</td>
<td>0,2%</td>
</tr>
<tr>
<td>Quality</td>
<td>41,2%</td>
</tr>
<tr>
<td>Wrong item delivered</td>
<td>3,3%</td>
</tr>
<tr>
<td>Defective product</td>
<td>2,8%</td>
</tr>
<tr>
<td>Other reason</td>
<td>4,2%</td>
</tr>
<tr>
<td>Not collected</td>
<td>14,4%</td>
</tr>
</tbody>
</table>
The formal return allowance at nelly.com, in compliance with the consumer rights directive, allows customers to first try what they ordered, and then, if needed, to return the item within fourteen days after delivery or the date when goods were retrieved from a service point. At the time of the case study, nelly.com’s delivery lead-time (the time between the customer placing an order and the shipment reaching the customer) was around one to three (average two) days and the redistribution took around two days. Quite a large percentage of incoming returns were registered after the allowed fourteen days, plus two days for delivery, plus two days for redistributing (see vertical red dotted line in Figure 4.2).

![Accumulated returned units 2009](image)

*Figure 4.2 Accumulated returned units 2009*

Given the absence of a formal returns strategy at nelly.com, RM was assigned quite a low priority in comparison with other processes at the start of the study. There are some consequences of not having a returns strategy: nelly.com has no systems, tools or measurements in use to follow returns, and returns cost or even consider returns when evaluating suppliers or even customers. Therefore, cross-functional returns avoidance activities to reduce unwanted returns and avoidable returns are not in place. Furthermore, if nelly.com wanted to gatekeep against late incoming returns (see Figure 4.2 to the right of red line) at present there is no possible way of performing this function.

Customers who want to exchange a product, independent of the return reason (see Table 4.3), can do so free of charge and the replacement product will also be delivered free of charge. Otherwise, the return freight cost is 35 crowns in the respective currency of Denmark, Norway and Sweden and €4 in Finland. However, the actual freight cost is greater than which the customer pays for both outgoing shipments and returns and nelly.com has strategically reduced the cost in order to be competitive and to stimulate shopping.

5. DISCUSSION

The use of returns management capabilities can improve the firms overall competitive performance through reducing costs and increasing revenue as presented in Chapter 2
However, many organisations still see returns as nuisance (Stock et al., 2002; Blackburn et al., 2004) and let any return through their returns system (Autry, 2005), which adds costs and is likely to reduce revenue. In the case findings, evidence was provided that supports the above statements about how organisations view returns and prioritise them in relation to other activities and processes. In the presented case, it is perhaps understandable that returns are not initially prioritised in a fast expanding and growing business, due to the complexity associated. However, steady growth is dependent on customers who are unlikely to be disinterested in the price they pay for products and services, which unquestionably relates back to the cost for returns. However, long term growth is dependent on minimising costs; inefficiencies in the returns system will have to be passed on to customers, which could potentially lead to loss of competitiveness due to too high prices.

At the case organisation, nelly.com, the returns system was depending on a paper intensive and manual gatekeeping activity as far upstream as their main Borås warehouse. This resulted in both increased manpower and transportation with associated costs, and there was no system in place to proactively work with returns avoidance. Despite its deficiencies, the returns information system in use, could still have avoided some returns if the information was not delayed by the time it took to transport and register returns. Approximately three percent of all returns were related to wrong deliveries (see Table 4.3), but there was no way of stopping the new orders pick and pack process and therefore, “new” returns were created while the information travelled upstream (see Figure 5.1). Another three percent of all returns were caused by product defects, which were possible to either avoid or at least gatekeep; all defective returns were transported back to nelly.com’s warehouse but could have been deposited elsewhere along the redistribution channel (see Figure 2.2) if gatekeeping activities were in place and supported by a returns information system that could separate returns information from the physical goods see Figure 5.1.

Value recovery is the main purpose for any reverse logistics activity (Rogers et al., 2002). For e-commerce consumer returns and especially those at the case organisation, the main recovery activity relates to transporting the items back to the warehouse, recovering them and then selling them once again. However, some “low value” items, defective items excluded, were only adding costs, as their margin is lower than the cost of performing the returns shipping and recovery activity. The returns costs for four percent of all returns transported and handled in the returns systems were greater than their margin if they were sold again at full price, which means that nelly.com loses money by letting them enter the returns flow. Altogether, approximately seven percent of all returns were producing a negative cash flow as they moved upstream towards the warehouse. Gatekeeping against these unwanted returns would have saved around one million SEK for the case organisation in handing and transportation costs. During the research the cost of the proposed RIS was discussed with one possible supplier and given the presented savings above, the payback time was estimated to be around one year. The ability to separate returns information from the physical return flow could assist the ongoing geographical expansion both in the case organisation as well as in the business as such where certain value added services could be performed downstream due to both extended transportation time and related costs.
Figure 5.1 Future state distribution and redistributions system using SOA & EDA

For the future state system to work, the returns system needs a returns information system that can separate information and goods flow. Furthermore, the returns management process needs a strategic goal and mission that is in synchronisation with other processes within the SC. Given its future strategic role (Mollenkopf et al., 2011) in creating value for customers, RM needs a strategic position in balancing costs and value creation within e-commerce organisations as such as well as for their customers, supported with a differentiated view of customers and their service delivery. Connecting returns information flow with using SOA and EDA architecture operational systems (see Figure 2.3) facilitates an agile view of the complex system including suppliers and customers. Using business rules to steer the returns flow reduces cost (see, Appendix) and extends the scope to allow a focus on delivering value for the whole chain. The somewhat limited theoretical and practical contributions of the conducted research are closely related to the exploratory nature of the research. The focus on the two minor parts of the returns flow i.e. defect and low value items are potentials that are quite straightforward to present and discuss in terms reduced transportation and related costs. Other returns such as quality and sizing relating returns need other interfaces and yet another research scope (product design, quality et cetera) thus supported with the SOA and EDA architecture yet outside the present scope.

6. CONCLUSIONS AND FUTURE RESEARCH

The e-commerce supply chain is becoming more complex as organisations are both expanding their businesses geographically and expanding their supplier base to continue their growth. Consumers are frequently ordering and returning items (in the case organisation 23-25 % of all shipments were returned for various reasons). The absence of a returns management process and a returns information system that could separate information and goods flow decreases the overall system efficiency. It is proposed that a returns information system that uses SOA and EDA architecture based on business rules that could start actions when a customer returns an item would help to avoid unnecessary returns and to gatekeep against unwanted returns to support value recovery and value creation. However, these are but only a few examples of what a contemporary RIS using SOA and EDA architectures could solve and resolve within e-commerce if implemented. The architecture as such enables new possibilities
to connect RM processes and sub processes with other processes such as CRM and SRM (see Figure 2.1) in high volume returns flow such as e-commerce returns.

Further research is needed to test whether these findings can be generalised for organisations other than the case organisation and how other parties such as distributors and other possible service providers can make use of the possibilities that the separation of information and returns flow presents.

REFERENCES


### Appendix

*Avoiding and gatekeeping against unnecessary and unwanted returns*

<table>
<thead>
<tr>
<th>Unwanted returns</th>
<th>Business rule</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrap, low value</td>
<td>If customer enters a reason code “item is broken” for a return in the logistics system this could trigger the following actions:</td>
<td>Validate customer via a web service request to the CRM system to get customer status. Depending on the product type and customer status, the instruction to the customer can be “dispose accordingly” and confirm. After confirmation a status is triggered in the logistics system and sent to the order system with the status “item scrapped by customer”. This will trigger actions such as credit customer or send replacement item.</td>
</tr>
</tbody>
</table>

| Safeguard from late returns. | If customer registers the return request later than X days the information to the customer at entry point can be “return period of X days is overdue”. Depending on type of item and customer status some returns can be accepted for loyal customers: | Validate customer via a web service request to the CRM system to get customer status. Depending on the product type and customer status, the instruction to the customer can be “return period of X days is overdue” and return is not accepted |

<table>
<thead>
<tr>
<th>Unnecessary returns:</th>
<th>Business rule</th>
<th>Action</th>
</tr>
</thead>
</table>
| Trigger alerts to avoid returns. | If customer enters a reason code “wrong item delivered” for a return in the logistics system this could trigger the following actions: | Trigger notifications to warehouse manager:
  - Item might be in the wrong location in the warehouse.
  
  Send status to the order system with the status “wrong item delivered”. This will trigger actions such as credit customer or send replacement item. |
REAL E-CUSTOMER BEHAVIOURAL RESPONSES TO FREE DELIVERY AND FREE RETURNS

ABSTRACT
This study aims to explore the influence of free delivery and free returns on the purchasing and return behaviour of real e-customers in the marketplace. To accomplish this goal, we conducted the study as a fully randomised and controlled experiment in cooperation with nelly.com, a Nordic e-commerce site that specialises in fashion and beauty. Our results suggest that a lenient delivery policy is associated with increased order frequency, decreased average value of purchased items, increased probability of return, and increased average value of returned items. In addition, a lenient return policy was found to be associated with increased order frequency, a decrease in the average value of orders, a decrease in the average value of purchased items, and increased probability of return. However, the effect sizes are generally small, and we conclude that factors such as legislation and competition often force e-tailers to offer free delivery and free returns even though such offers probably would not have been profitable otherwise.

Keywords: E-commerce; Buying behaviour; Lenient policies; Experimental study

INTRODUCTION
The behaviour of e-commerce consumers has been receiving increasing attention from researchers [2, 5, 9, 23, 29]. This paper focuses on one particular behavioural aspect, namely, how e-customers respond to lenient delivery and return policies. The degree of leniency in e-commerce has increased during the last decade primarily owing to increased competition [1] and new legislation [7]. A lenient return policy may include a longer period of time during which a product may be returned after purchase, a promise that a return will not be questioned, cash rather than store credit, or the option to return a sale item [33]. For ‘e-tailers’, the degree of leniency can be viewed as a problem of optimisation [6]. A seller must balance the benefits of a more lenient policy against the costs [25]. The dilemma is that buyers clearly prefer sellers who offer more lenient policies (all things being equal), whereas lenient policies are costly to operate and vulnerable to consumer abuse. There is no simple and generalisable solution to this problem [33]. Furthermore, such a solution would require valid information regarding how e-customers actually respond to different types of leniency.

Management can adjust fewer variables on the delivery side than on the return side. In e-commerce, one leniency variable that exists for both deliveries and returns is whether customers pay for shipping or the company entirely subsidizes it. Basic price theory suggests that if a service is free, it will generally have a higher demand than if it were not free. If this theory holds, then free deliveries should correspond to higher sales, and free returns should correspond to both higher sales and increased returns.

In previous empirical research, these predictions largely seem to hold. For example, Lewis [20] presented a study of the effects of shipping fees and marketing activities on customer acquisition, customer retention, and order size using data from an online grocer. He found that shipping fees significantly influenced both order incidence and order size. In a similar study, Lewis et al. [21] found that free shipping for orders that exceed some size threshold were found to be effective in generating additional sales. Petersen and Kumar [26] performed a field experiment with a catalogue retailer that sells footwear, apparel, and other accessories to
determine whether it was possible to quantify how an altered leniency in the product return policy affected customer behaviour with respect to orders and returns. Their findings indicate that a lenient return policy increased both the average order and average return per customer, with the net effect being an increased profit per customer. Wood [33] conducted a controlled experiment of students in a laboratory setting to investigate the influence of return-policy leniency. She found that subjects who were offered a lenient return policy appeared to deliberate less when making purchases and that both the percentage of orders and returns appeared to increase under lenient return conditions. She also found that customers who purchased items from a vendor with a lenient return policy rated products as higher quality both before ordering and after receipt. However, the positive effects of lenient return policies were unique to remote vendors. Wang [30] performed an experimental study similar to that of Wood [33], but Wang extended the design to include several different return policies and formal tests of the resulting rates of purchasing and returns. The results showed that lenient return policies significantly increased initial purchasing tendencies but did not significantly alter the return rate. Bonifield et al. [3] investigated the interrelationship between return-policy leniency and retailer quality using students as test subjects. Their analyses showed that as the ratings of e-tailer quality increase, return policy leniency increases in non-consumable product categories. These authors also found that the ability of consumers to control their shopping experiences and their general trust of retailers moderated their reactions to return policies that differ in degrees of leniency.

The present study aimed to explore the influence of free delivery and free returns on the purchasing and return behaviour of real e-customers in the marketplace instead of on the behaviour of students in laboratory settings. To accomplish this goal, we conducted the study as a fully randomised and controlled experiment in cooperation with nelly.com, a Nordic e-commerce site that specialises in fashion and beauty. Generally consistent with previous research, this study reveals that free delivery is significantly associated with a greater order frequency as well as increased probability and average value of returned items, whereas free returns are significantly associated with increased order frequency, decreased average value of orders and purchased items, and increased probability of returned items. Furthermore, in addition to previous research, the impact of combining free delivery with free returns was found to be significantly subadditive in several cases.

The remainder of this paper is organised as follows. The second section presents the research questions. The third section describes the methodology. The fourth section presents the results of the statistical analyses. The results are then discussed in the fifth section. Finally, the sixth section presents the conclusions of the study.

RESEARCH HYPOTHESES
From a theoretical perspective, a delivery fee can be considered the fixed part of a two-part pricing structure. Two-part pricing is a subset of nonlinear pricing that is used by firms in both monopoly markets and competitive markets to capture additional consumer surplus [32]. In practice, a two-part tariff involves two management decisions: determining the fixed portion and the variable portion of a price. Generally, though, when only one portion is decreased while the other portion remains constant, demand increases [19]. Hence, a lenient delivery policy should theoretically increase demand because consumers can accept less utility from the products themselves and still achieve a surplus [4]. Previous empirical research [20, 30] supports this prediction.
The return fee can be viewed as an implicit part of the pricing structure. Both the decisions to purchase and to return are clearly two separate choices [see 33], but the expected value of a transaction is calculated at the moment of purchase. Thus, a lenient return policy provides consumers with a greater level of expected utility. Entirely free returns (i.e., returns in which consumers receive a full refund and pay nothing) can theoretically be proven to be suboptimal [28]. Alternatively, lenient return policies should increase demand because such policies increase expected utility [34] or reduce risk [11]. Mukhopadhyay and Setoputro [24] demonstrated how demand could theoretically be modelled using a return policy as a dependent variable with the assumption that demand would increase if a lenient return policy were offered. This assumption is also supported by previous empirical research [26].

However, because explicit price structures and return policies can be assumed to influence demand, one must consider a possible interaction between these two factors. Mukhopadhyay and Setoputro [24] presented a model in which demand is a function of the customer reactions to changes in price and return conditions, and they used the model to derive optimal conditions. Thus, pricing and return policies should be optimised simultaneously. Gurnani et al. [12] model optimal return policies in the presence of demand uncertainty.

Free delivery and return policies may also influence impulse buying, which is defined as unplanned purchase decisions that are made immediately prior to a purchase. Free returns facilitate impulse buying because customers face no immediate risk. Free delivery may also affect impulse-buying behaviours among customers who want to ‘seize the moment’. Previous research [33] has claimed that free-return policies encourage customers to order items less thoughtfully. The literature on general impulse-buying behaviour is extensive [8, 16]. However, the online and offline worlds appear to be characterised by differences with regard to impulse-buying behaviour [18]. Koufaris et al. [17] have found that the time-saving aspect of online shopping may increase the number of unplanned purchases, whereas the large quantity of information available may decrease the number of unplanned purchases owing to the prolonged decision-making period. The relationship between e-commerce and impulse buying has been reviewed by Wells et al. [31], who claim that the quality of a website has a direct influence on the desire of consumers to purchase items from such a vendor.

It is difficult to determine, without asking customers, whether purchases are made impulsively, but predicting a measurable outcome based on increased impulse buying is possible. Low prices and short product life cycles are traditionally viewed as major influences on impulse-purchasing behaviours [27]. Wells et al. [31] define a ‘planned impulse purchase’ as a situation in which the purchase is triggered by a low price (or another type of bargain), even though a customer entered a shopping environment with no explicit intention to purchase such an item. Research shows that assured bargains influence the shopping behaviour of consumers [22]. Kalla and Arora [16] have described how discounts motivate impulse purchasing. Hence, a lower mean value of purchased items may result from a higher planned impulse-purchasing tendency.

Although both purchase and return decisions are separate, return conditions may affect purchase decisions, as discussed above. However, return decisions should not be affected by delivery conditions, as any delivery fee may be regarded as a sunk cost when a return is considered. Nevertheless, return conditions should be regarded as an important factor in return decisions. Because return policies can affect both demand and returns, the financial effects of different return policies requires analysis at the company level. Essentially, how returns are affected by return policies can be viewed as a question of price sensitivity, as
mentioned above. A more lenient returns policy may simply increase the number of returns [34]. Mukhopadhyay and Setoputro [24] have presented a theoretical model in which pricing and return policies interactively determine firm profit. Previous empirical research [26, 33] also has supported the assumption that a lenient return policy increases the number of returns.

Based on the preceding review of theoretical and empirical literature, we can now derive the research hypotheses that this study addresses. Consumers regard both delivery fees and return fees as components of the cost of placing an order. Basic price theory suggests that a lower cost corresponds with higher demand. Hence, free delivery and free returns should increase the total number of orders, which we call the ‘order frequency’. Therefore, our first two hypotheses are as follows:

**H1:** Free delivery is associated with an increase in order frequency.
**H2:** Free returns are associated with an increase in order frequency.

In theory, customers should place smaller average orders under a free-delivery or free-return policy because they do not need to consider the reduction of the average fixed costs for larger orders. Moreover, under the assumption that lenient policies increase order frequency, the orders that occur on the margin should typically be of lesser value because such orders would not create a positive consumer utility under strict policies. Hence, free delivery or free returns should create a reduction in the average order value. Therefore, we present our next two hypotheses:

**H3:** Free delivery is associated with a decrease in the average value of orders.
**H4:** Free returns are associated with a decrease in the average value of orders.

One clear purpose that free delivery and free returns serve is to trigger impulse buying. Although we cannot actually determine whether purchases are made on impulse without asking the customers, we can observe other variables that logically should change as a result of altered impulse-buying behaviours. One such anticipated change is an increased probability that a purchased item will be returned, given that a purchase that occurs without rational consideration is more likely to be regretted. Another anticipated change is an increased probability of adding a low-cost item to the entire order. Because impulse shoppers exhibit a greater tendency to randomly browse vendor websites, such consumers are more likely to discover an item that they consider a bargain. Therefore, our next four hypotheses are as follows:

**H5:** Free delivery is associated with a decrease in the average value of purchased items.
**H6:** Free returns are associated with a decrease in the average value of purchased items.
**H7:** Free delivery is associated with an increase in the probability of return.
**H8:** Free returns are associated with an increase in the probability of return.

Finally, there is generally a reason for item returns. In other words, returned items should differ systematically from a random sample of purchased items. The previous assumption that free delivery and free returns increase the proportion of items that are purchased impulsively implies that consumers who purchase items under a free-delivery or a free-return policy will regret a larger proportion of their purchases. When contemplating a return decision, a customer must relate the monetary value of an item to the effort that is required to return this item. When this ratio is excessively low, a customer will not return the item despite regretting the purchase. Hence, items with higher prices should be more common among returns when
lenient policies prevail, suggesting that free delivery and free returns should positively affect the average value of returned items. However, when returns are not free, customers may be more likely to relate the value of an item to the return fee and choose not to return items of little value. Contrary to the previous argument, this hypothesis suggests that the average value of returned items should be higher when returns are not free. Therefore, we do not hypothesise a direction for the change in the average value of returned items as a result of lenient policies. Thus, our final two hypotheses are as follows:

H9: Free delivery is associated with a change in the average value of returned items.
H10: Free returns are associated with a change in the average value of returned items.

METHODOLOGY
This study was designed as a randomised controlled experiment with a random sample strategy. Among the 192,482 Swedish customers who had placed an order at nelly.com during the last 12 months and received the quarterly nelly.com e-newsletter in November 2010, we randomised via computer 4,000 customers, selected at random by a nelly.com manager (using a computerised process), into four groups (A, B, C and D) of 1,000 people each. The randomisation process was conducted in two stages to ensure that no systematic sampling bias occurs.

All newsletters were identical (see Appendix 1) except for the delivery and return conditions: Group A was offered free delivery and free returns, group B was offered free returns only, group C was offered free delivery only, and group D was the experimental control group (see Figure 1).

![Figure 1: Assignment of four groups](image1)

<table>
<thead>
<tr>
<th></th>
<th>Free returns</th>
<th>No free returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free delivery</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>No free delivery</td>
<td>B</td>
<td>D</td>
</tr>
</tbody>
</table>

The respondents were informed through the newsletter that they had been randomly selected to participate in a study concerning the company’s delivery and return conditions and that the study was being performed in cooperation with researchers at the regional university. The letter explicitly noted that the study participants only needed to use the website as usual for shopping during the experiment. Because this study was a field experiment in which the subjects were not asked to deviate from their normal behaviour, consent is implied [35]. The company anonymised all data before providing them to us.

Since all customers are required to identify themselves with login information at the nelly.com website during the check-out process, we were able to ensure that each participant was exposed to the correct delivery and return policies. In the past, nelly.com has occasionally offered free delivery and/or free returns; thus, customers would not find such offers to be unusual. Generally, the company continuously adapts their delivery and return policies to the policies of their greatest competitor. Hence, the company does not have standard delivery and return policies.

Detailed information pertaining to all ordered items and returned items was exported directly from the company’s ERP system. Data were analysed with different types of regression analyses. SPSS version 19.0.0 was used to analyse all of the data (SPSS Inc., Chicago, IL, USA).
RESULTS
The 4000 participating subjects purchased 4650 items during the study period, distributed over 1854 orders, and 1009 unique customers. Table 1 displays descriptive statistics for the different groups in the experiment. The average order consisted of 2.51 items, and each purchasing customer placed on average 1.84 orders during the period in which 841 items were returned. The average value of the returned items was 408 SEK, which was significantly higher than that of the non-returned items (263 SEK; t = 10.327, p < 0.001). Hence, returned items were in general significantly more expensive than non-returned items.

Table 1: Results of free delivery and free returns

<table>
<thead>
<tr>
<th></th>
<th>Neither free delivery nor free returns</th>
<th>Free delivery only</th>
<th>Free returns only</th>
<th>Free delivery and free returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordering customers</td>
<td>21.8 %</td>
<td>26.5 %</td>
<td>28.2 %</td>
<td>24.4 %</td>
</tr>
<tr>
<td>Average value of orders</td>
<td>755 SEK</td>
<td>732 SEK</td>
<td>647 SEK</td>
<td>768 SEK</td>
</tr>
<tr>
<td>Average value of purchased items</td>
<td>304 SEK</td>
<td>288 SEK</td>
<td>277 SEK</td>
<td>288 SEK</td>
</tr>
<tr>
<td>Returned items</td>
<td>13.0 %</td>
<td>18.6 %</td>
<td>19.0 %</td>
<td>21.1 %</td>
</tr>
<tr>
<td>Average value of returned items</td>
<td>406 SEK</td>
<td>432 SEK</td>
<td>360 SEK</td>
<td>423 SEK</td>
</tr>
</tbody>
</table>

The expected order frequency is defined as the product of the probability that a potential customer becomes a purchasing customer and the expected number of orders that the purchasing customers would make. The probability of purchase was analysed using the logistic regression model:

\[
\text{logit} (P_u) = \beta_0 + FD\beta_1 + FR\beta_2 + (FD*FR)\beta_3 + \varepsilon
\]

where \(P_u\) is the probability of purchase for a potential customer, \(FD\) is a binary variable indicating whether or not the customer enjoyed free delivery, and \(FR\) is a binary variable indicating whether or not the customer enjoyed free return. Table 2 shows the results of this regression. Free delivery (B = 0.257, p = 0.014) and free returns (B = 0.343, p = 0.001) are both significantly associated with an increased probability of purchase. However, these effects are subadditive since there is significant interaction between free delivery and free returns (B = -0.454, p = 0.002). Hence, the introduction of one lenient policy (either free delivery or free returns) increases the probability of purchase, but the marginal effect of simultaneously introducing the other lenient policy appears to be negative.

Table 2: Probability of purchase

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>p</th>
<th>Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.277</td>
<td>0.077</td>
<td>278.157</td>
<td>&lt; 0.001</td>
<td>0.279</td>
</tr>
<tr>
<td>FD</td>
<td>0.257</td>
<td>0.105</td>
<td>6.015</td>
<td>0.014</td>
<td>1.293</td>
</tr>
<tr>
<td>FR</td>
<td>0.343</td>
<td>0.104</td>
<td>10.876</td>
<td>0.001</td>
<td>1.409</td>
</tr>
<tr>
<td>FD*FR</td>
<td>-0.454</td>
<td>0.146</td>
<td>9.630</td>
<td>0.002</td>
<td>0.635</td>
</tr>
</tbody>
</table>

Nagelkerke \(R^2 = 0.005\)
The number of orders among purchasing customers was analysed using the regression model:

\[ ORDER = \beta_0 + FD\beta_1 + FR\beta_2 + (FD*FR)\beta_3 + \epsilon \]

where ORDER is the number of orders. Table 3 shows the results of this regression. Apparently, neither free delivery nor free returns is significantly associated with an increase in the number of orders, and no significant interaction is observed between these factors.

### Table 3: Number of orders

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.798</td>
<td>0.093</td>
<td>19.325</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FD</td>
<td>0.034</td>
<td>0.130</td>
<td>0.263</td>
<td>0.793</td>
</tr>
<tr>
<td>FR</td>
<td>0.041</td>
<td>0.133</td>
<td>0.305</td>
<td>0.761</td>
</tr>
<tr>
<td>FD*FR</td>
<td>0.004</td>
<td>0.185</td>
<td>0.019</td>
<td>0.985</td>
</tr>
<tr>
<td>F</td>
<td>0.124</td>
<td></td>
<td></td>
<td>(p = 0.946), R = 0.019</td>
</tr>
</tbody>
</table>

The order value was analysed using the semi-logarithmic regression model:

\[ \log(ORDERVAL) = \beta_0 + FD\beta_1 + FR\beta_2 + (FD*FR)\beta_3 + \epsilon \]

where ORDERVAL is the order value (in SEK). Table 4 shows the results of this regression. Free returns are significantly associated with a decrease in the average value of orders (B = -0.064, p = 0.007). Hence, the expected reduction in order value when returns are free is approximately 6.4 %. Free delivery, on the other hand, is not significantly associated with the average order value, but there is a marginally significant interaction between free delivery and free returns (B = 0.054, p = 0.099). Hence, even though free returns decrease the expected order value, the effect seems to be offset if delivery is free as well.

### Table 4: Value of orders

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.747</td>
<td>0.017</td>
<td>164.876</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FD</td>
<td>-0.019</td>
<td>0.023</td>
<td>-0.796</td>
<td>0.426</td>
</tr>
<tr>
<td>FR</td>
<td>-0.064</td>
<td>0.024</td>
<td>-2.689</td>
<td>0.007</td>
</tr>
<tr>
<td>FD*FR</td>
<td>0.054</td>
<td>0.033</td>
<td>1.651</td>
<td>0.099</td>
</tr>
<tr>
<td>F</td>
<td>2.550</td>
<td></td>
<td></td>
<td>(p = 0.054), R = 0.064</td>
</tr>
</tbody>
</table>

The value of purchased items was analysed using the semi-logarithmic regression model:

\[ \log(PURITEMVAL) = \beta_0 + FD\beta_1 + FR\beta_2 + (FD*FR)\beta_3 + \epsilon \]

where PURITEMVAL is the value of the purchased item. Table 5 shows the results of this regression. Note that 78 of the 4650 observations were removed from the data set before this regression was run because the item values were missing. Free delivery (B = -0.034, p = 0.033) and free returns (B = -0.051, p = 0.003) are significantly associated with a decrease in the average value of purchased items. Therefore, the expected reduction in item value when delivery is free is approximately 3.4 %, while free returns create an expected reduction of approximately 5.1 % in item value. However, these effects appear to be subadditive, since there is a marginally significant interaction between free delivery and free returns (B = 0.044, p = 0.058). Hence, the introduction of one lenient policy (either free delivery or free returns)
decreases the average value of purchased items, but there is no marginal effect of the simultaneous introduction of the other lenient policy.

Table 5: Value of purchased items

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.337</td>
<td>0.012</td>
<td>198.799</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FD</td>
<td>-0.035</td>
<td>0.016</td>
<td>-2.124</td>
<td>0.034</td>
</tr>
<tr>
<td>FR</td>
<td>-0.051</td>
<td>0.017</td>
<td>-2.981</td>
<td>0.003</td>
</tr>
<tr>
<td>FD*FR</td>
<td>0.044</td>
<td>0.023</td>
<td>1.897</td>
<td>0.058</td>
</tr>
<tr>
<td>F = 3.523 (p = 0.014), R = 0.048</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The probability of return was analysed using the logistic regression model:

$$\logit(Pr) = \beta_0 + FD\beta_1 + FR\beta_2 + (FD\ast FR)\beta_3 + \epsilon$$

where $Pr$ is the probability of return for an individual item. Table 6 shows the results of this regression. Free delivery ($B = 0.427$, $p < 0.001$) and free returns ($B = 0.450$, $p < 0.001$) are both significantly associated with an increase in the probability of return. However, these effects seem to be subadditive, since there is a marginally significant interaction effect between free delivery and free returns ($B = -0.295$, $p = 0.059$). Hence, the introduction of one lenient policy (either free delivery or free returns) increases the probability of return, but the marginal effect of the simultaneous introduction of the other lenient policy appears to be smaller.

Table 6: Probability of return

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>p</th>
<th>Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.900</td>
<td>0.089</td>
<td>452.333</td>
<td>&lt; 0.001</td>
<td>0.150</td>
</tr>
<tr>
<td>FD</td>
<td>0.427</td>
<td>0.116</td>
<td>13.513</td>
<td>&lt; 0.001</td>
<td>1.533</td>
</tr>
<tr>
<td>FR</td>
<td>0.450</td>
<td>0.120</td>
<td>14.029</td>
<td>&lt; 0.001</td>
<td>1.568</td>
</tr>
<tr>
<td>FD*FR</td>
<td>-0.295</td>
<td>0.156</td>
<td>3.561</td>
<td>0.059</td>
<td>0.745</td>
</tr>
<tr>
<td>Nagelkerke $R^2$ = 0.010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The value of returned items was analysed using the regression model:

$$\log(RETITEMVAL) = \beta_0 + FD\beta_1 + FR\beta_2 + (FD\ast FR)\beta_3 + \epsilon$$

where $RETITEMVAL$ is the value of the returned item. Table 7 shows the results of this regression. Note that 4 of the 841 observations were removed from the data set before this regression was run because the item value was missing. Free returns are not significantly associated with the average value of returned items, and there is no significant interaction between free delivery and free returns, but free delivery has a marginally significant effect ($B = 0.073$, $p = 0.055$). Hence, the expected increase in value of returned items when delivery is free is approximately 7.3%.

Table 7: Value of returned items

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.439</td>
<td>0.030</td>
<td>82.181</td>
<td>0.000</td>
</tr>
<tr>
<td>FD</td>
<td>0.073</td>
<td>0.038</td>
<td>1.924</td>
<td>0.055</td>
</tr>
<tr>
<td>FR</td>
<td>-0.007</td>
<td>0.039</td>
<td>-0.168</td>
<td>0.867</td>
</tr>
</tbody>
</table>
Table 8 summarizes the results of the hypotheses tests. Even though most hypotheses are supported, the effect sizes are small in most cases.

Table 8: Study hypotheses and their outcomes

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Free delivery is associated with an increase in order frequency.</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: Free returns are associated with an increase in order frequency.</td>
<td>Supported</td>
</tr>
<tr>
<td>H3: Free delivery is associated with a decrease in the average value of orders.</td>
<td>Not supported</td>
</tr>
<tr>
<td>H4: Free returns are associated with a decrease in the average value of orders.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5: Free delivery is associated with a decrease in the average value of purchased items.</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: Free returns are associated with a decrease in the average value of purchased items.</td>
<td>Supported</td>
</tr>
<tr>
<td>H7: Free delivery is associated with an increase in the probability of return.</td>
<td>Supported</td>
</tr>
<tr>
<td>H8: Free returns are associated with an increase in the probability of return.</td>
<td>Supported</td>
</tr>
<tr>
<td>H9: Free delivery is associated with a change in the average value of returned items.</td>
<td>Marginally supported</td>
</tr>
<tr>
<td>H10: Free returns are associated with a change in the average value of returned items.</td>
<td>Not supported</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Understanding consumer behaviour has become extremely important for retailers [13]. The continuous growth of and increased competition in B2C e-commerce has increased the relevance of lenient delivery and return policies to customer acquisition and retention tools. Some researchers [e.g., 30, 33] have used students as subjects to explore the effects of lenient policies on consumer behaviour in laboratory settings; however, such studies have limited external validity. Other researchers [e.g., 20, 26] have used real market data, although their studies may have validity issues related to the use of secondary data, a lack of control over the data collection process, and/or cross-sectional analysis of data in which a time factor may be present. This study avoids these problems and contributes to the literature by using a fully randomised and controlled experiment with a sample of customers from the actual marketplace. We conducted a simultaneous analysis with a high generalisability of the effects of free-delivery and free-return policies.

Existing theories and prior empirical studies suggest that both free-delivery and free-return policies are significantly associated with increased order frequency. However, despite being statistically significant, the observed effects are rather small. Furthermore, the combined impact of free delivery and free returns on order frequency is significantly subadditive. We believe that this result may have occurred because customers experience the company policy as either lenient (free delivery and/or free returns) or traditional (neither free delivery nor free
returns). The perceived transition from traditional to lenient may be the decisive factor that impacts the order behaviour while the degree of leniency is insignificant. Further research is needed to shed light over this phenomenon.

A free-return policy was found to be associated with a decrease in the average value of orders, but a free-delivery policy was not found to have such an association. This finding contradicts the results of Lewis [20] as well as Petersen and Kumar [26], who found order values to be associated with shipping fees. Our results may occurred because of the greater significance consumers give to the elimination of risk in a possible fixed cost of a future return than the elimination of the actual fixed cost at the time of purchase [15]. The fact that free returns were associated with a decrease in the average value of orders is theoretically consistent, since customers do not need to consider a reduction of average fixed costs for larger orders when no fixed cost is present.

Free-delivery and free-return policies were found to be associated with a decrease in the average value of purchased items, thus supporting the hypotheses. Our results here are related to the findings of Petersen and Kumar [26], who found that a lenient return policy increased average yearly purchases per customer even though a strict comparison cannot be made. Consistent with the theoretical prediction, our findings indicate that lenient policies increase the likelihood that a customer will make impulse purchases. Another possible explanation is that customers who enjoy lenient policies are more inclined to buy discounted products. The awareness of lenient policies might put customers in a shopping mode different from that of customers who know that they will have to pay for delivery and possible returns themselves. It is also possible that a lenient return policy suggests to customers that the firm doubts the quality of its products, and consequently, customers react and buy less valuable products due to risk aversion. Future research is needed to clarify this phenomenon.

Consistent with our theoretical predictions, free-delivery and free-return policies were found to be associated with increases in the probability of return. Previous research [26, 30, 33] has also shown that return rates increase when returns are free. The finding that free delivery also increases the probability of return may relate to the aforementioned impulse-buying factor. However, an interaction effect between the factors is apparent. The introduction of free returns to customers who already enjoy free delivery or the introduction of free delivery to customers who already receive free returns does not affect the probability of return significantly. Similar to the order frequency issue discussed above, we believe that this finding may have occurred because customers experience the company policy as either lenient or traditional. If customers view the policy as traditional, then they may return fewer items; thus, our results would be explained. Further research is needed to adequately explain this phenomenon.

Although free returns are not associated with a decrease in the average value of returned items, free delivery has a marginally significant positive effect on the average value of returned items. We believe that this result might relate to some type of impulse-buying behaviour that is triggered by free delivery, which has not previously been described in the literature. The average value of purchased items is significantly lower than the average value of returned items in all four groups. Hence, items that are more expensive are generally

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1 Because we observed a statistically insignificant increase in the number of orders per unique customer, the increase in total purchases per customer (as found by Petersen & Kumar [26]) may have been a consequence of an increased number of purchases despite a decreased average order value. The study does not provide sufficient data to test this hypothesis.
overrepresented among returned items. This effect, however, is stronger among customers who benefit from lenient delivery conditions. We believe that future research should examine this finding in greater detail.

CONCLUSION
To conclude this study, we have verified the results of several previous studies that were based on laboratory experiments or analyses of secondary data in this field. However, several prior findings were not confirmed by our data, and we present new and previously unknown associations between consumer behaviour and leniency in delivery and/or return policies. We found two different types of relationships. First, we observed an association between a free-delivery policy and various types of return behaviours. The “mirrored” relationship (i.e., the association between free-return policies and purchasing behaviour) has previously been explored; however, the effects of delivery conditions on return behaviours appear to be a new finding. We believe that the mechanisms behind this association must be further explored in future research.

Second, we observed a pattern of interaction between a free-delivery policy and a free-return policy. The expected effects on consumer behaviour of one lenient policy appear to depend on whether the other policy is also lenient. This relationship has implications for the theoretical modelling of behaviour and the practical implementation of policies. Future theoretical research should consider delivery and return conditions as well as possible interactions between these factors. It is also possible that the behavioural effects discovered here differ across different types of customers. Therefore, future research should include controls for RFM type variables and demographic variables such as age and gender. For now, the fact that the majority of customers at nelly.com are young females may be seen as a limitation of this study.

The main managerial implication of this study seems to be that free delivery and return policies should not be offered at all, given that they are not mandatory from a legislation and/or competition point of view. From an economical perspective, such policies are not recommended since the downside (i.e., a decreased coverage of costs) is not compensated by a significant upside. Using the point estimates from our data set, we show that the expected value of a potential customer is lower when returns are free. Let us make the following assumptions:

- Free returns increase the probability of return from 16 % to 20 %.
- The average value of returned items is not significantly affected by free returns.
- The return fee for customers is 39 SEK.
- Free returns increase the probability of orders from 24% to 26%.
- The number of orders per unique customer is not significantly affected by free returns.
- Free returns decrease the average value of orders from 744 SEK to 712 SEK.
- The average contribution margin ratio is about 2/3.

Thus, the expected value of a potential customer when free returns are not offered can be calculated as \((1 - 0.16) \times 0.24 \times 744 \times \frac{2}{3} = 100 \text{ SEK}\). On the other hand, the expected value of a potential customer when free returns are offered can be calculated as \((1 - 0.20) \times 0.26 \times 712 \times \frac{2}{3} - 39 = 60 \text{ SEK}\). Further, companies often offer free delivery and/or free returns and are likely to continue this practice regardless of the results in this study because of legislation and the strategic risk of losing market share to competitors who do offer free delivery and/or free returns.
One limitation of this study is that it can be regarded as a case study since all of the participating subjects were customers of the same company. However, we believe that the external validity of our results should be considered high compared with those of the previous studies in this area. This study is the first of its kind to explore the purchasing and return behaviour of actual e-commerce customers in the marketplace with a mix of different delivery and return policies within a fully randomised and controlled experimental setting. Lewis [20] used secondary data from an internet retailer that specialises in non-perishable grocery and drugstore items. Petersen and Kumar [26] worked with a catalogue retailer that sells footwear, apparel, and other accessories. Wood [33] created laboratory experiments in which subjects could choose between goods that included radar detectors, candy bars, and generic t-shirts. Highlight markers and cups were used as goods in experiments by Wang [30]. We suggest that future research should examine consumer behaviour in other industries to verify our results.

The fact that all subjects were informed about the study can also be seen as a limitation. Nelly.com agreed that informing subjects about the study was ethically necessary to avoid the risk of future bad publicity. However, since the subjects in this study were real e-customers who received their usual quarterly newsletter and were not asked to do anything out of the ordinary, we believe that the external validity of these results should be high compared to similar studies that were conducted with students in different types of laboratory settings.

Yet another limitation of this study is that the target population consists of only established customers of the company. Previous research [e.g., 14] indicates that customer behaviour does not remain stable because the experience that customers acquire from past e-purchases influences their subsequent behaviour. Therefore, a methodological challenge in future research is to identify methods of performing randomised and controlled field experiments with new customers as subjects. We also believe that the financial consequences of free delivery and return policies as well as the customer behaviour associated with other types of leniency need attention in future research. For example, the optimal return rate is rarely zero, as the opportunity cost in terms of lost sales to reach zero returns is typically excessively high. With more accurate information regarding customer behaviour, the optimal managerial trade-off between these factors can be analysed more thoroughly.
REFERENCES


APPENDIX 1: THE NEWSLETTER
This letter is a translated version of the letter that was sent to the subjects in group A. The subjects in the other groups received corresponding letters.

Help us to improve at nelly.com!

In cooperation with a research team from the University of Borås, we are conducting a study regarding our delivery and return policies among our customers. You are one of the customers who have been randomly selected to participate in this study.

Until February 18, you will receive free delivery and free returns when you shop at nelly.com. You do not have to do anything out of the ordinary to take advantage of this offer. Delivery fees will be automatically deducted when you check out. Return fees will be automatically deducted during the return process.

We are conducting this study in an attempt to enhance our offers for our customers.

Enjoy your winter shopping!

/nelly.com
(R)e-tail borrowing of party dresses: an experimental study

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Björn Lantz
School of Engineering, University of Borås, Borås, Sweden

Abstract

Purpose – The main purpose of this study is to increase the understanding of consumer behaviour with respect to (r)e-tail borrowing, performed under different (more or less generous) delivery and return policies.

Design/methodology/approach – The study was designed as a randomised controlled experiment with a random sample strategy. Among the 192,482 Swedish customers who had made an order at nelly.com during the previous 12 months and were to receive the quarterly nelly.com newsletter in November 2010 by e-mail, 4,000 were randomly selected and randomised into four groups of 1,000 in each group.

Findings – The experiment revealed certain purchase and return patterns that support the conclusion that (r)e-tail borrowing behaviour exists in fashion e-commerce. Evidence was also found that lenient delivery and returns policies seem to reinforce (r)e-tail borrowing behaviour, albeit not always in expected ways.

Practical implications – Differences in delivery and return policies seem to impact consumer purchase and return behaviour differently depending on the type of item. Therefore a more differentiated view of how to apply them is suggested. Offering the same delivery and return policies to all types of customers and products is generally not optimal with respect to profitability.

Originality/value – The paper illustrates the need to consider both delivery and returns policies together with customer and product categories simultaneously when applying them in an e-commerce context.

Keywords Retail borrowing, E-tail borrowing, E-commerce, Experimental study, Consumer behaviour, Returns, Sweden, Decision making

Paper type Research paper

Introduction

Return policies enable the customer to postpone their purchasing decision until they have gained some experience with the goods (King and Dennis, 2003). In e-commerce this experience comes after the goods have been delivered. Consequently, in e-commerce, customer returns are an inherent element of shopping online due to the customer’s inability to experience a particular product and/or service prior to ordering. Lenient return policies are common in fashion e-commerce. Customers are often able to return garments to the online retailer for a full refund with no questions asked. While independent boutiques rarely have such policies, online retail has had to incorporate these policies due to the nature of their distribution strategy. Hence, the potential for customers purchasing garments with no intention to keep them is an obvious danger in e-commerce. The fact that an e-customer, unlike a customer in a bricks-and-mortar store, does not have to interact with a member of staff in person when returning items...
further increases this potential. The question is whether we should consider such retail borrowing behaviour as consumer fraud or not, or alternatively, is it simply the logical consequence of offering lenient delivery and return policies while marketing relatively expensive “special occasion” fashion items.

The introduction of liberalised return policies suggests that companies have benefitted financially through attaining higher levels of customer retention and by being able to sell more expensive products (see Rosenbaum and Kuntze, 2003). Research indicates that a relatively large number of consumers abuse liberal return policies. However, most of the current research focuses on investigating consumer perceptions, attitudes and beliefs regarding shopping as well as previous experiences regarding the illegitimate return of purchased goods. In a study of US consumers, Kang and Johnson (2009, p. 46) found that consumers who agreed that retailers should offer lenient return policies may consider the possibility of returning goods even at the moment of purchase. At the same time, these may also be consumers with a high likelihood of engaging in fraudulent behaviour, such as merchandise borrowing. Researchers from a number of different disciplines, including marketing (Kang and Johnson, 2009; Harris, 2010; Rosenbaum et al., 2011) and management (Piron and Young, 2000; King and Dennis, 2003), have found that nearly 20 per cent of consumers engage in some type of “illegitimate product returns”. Furthermore, Wilkes (1978) reported in a study designed to assess consumer attitudes, specifically middle-class housewives, on the perceived seriousness of a number of fraudulent situations, that 98.6 per cent of respondents felt that it was wrong to return a worn dress; however, at the same time 20.3 per cent stated that their friends have done so in the past or continue to do so.

King and Dennis (2003) coined the term “deshopping”, in which they define it as the “deliberate return of goods for reasons other than actual faults in the product, in its pure form, premeditated prior to and during the consumption experience”. According to the authors, deshopping in effect means buying something with no intention of keeping it, and they further stated that the deshoppers would be less likely to deshop if they perceived the process to be difficult. According to the findings of their study on deshoppers, in which they studied their perceptions control and intentions to reach a definition of what can be regarded as deshopping behaviour. They concluded that although returning an item may not be premeditated at the moment of purchase, there was a clear intention to “deshop” said item at the moment of return. Their study emphasised the degree of control that the deshoppers perceived that they had over the process itself and in effecting a successful outcome. Furthermore, the study revealed the perceived “ease” with which the interviewees performed the deshopping. The study also suggested that altering the perception of control via “tightened return policies” could reduce deshopping behaviour.

Unethical retail disposition (URD) that is linked to illegitimate product returns (Rosenbaum et al., 2011, p. 50) must demonstrate five conditions in order for URD behaviour to be present (Rosenbaum et al., 2011, p. 33). First, the product must be returned after the permitted return window in exchange for a full refund. Second, the product must have been used; therefore, the purchaser benefitted from the product before returning it. Third, the product cannot be defective in any way. Fourth, the customer must have premeditated returning the product before or at the time of purchase, and finally, the purchaser must be aware that he or she is exploiting the retailer’s return policy.
Piron and Young (2000) explain a behaviour similar to URD and deshopping called “retail borrowing”, in which they analysed the triggers that make a consumer amenable to “borrow” items, in addition to studying customer thoughts and emotions following retail borrowing behaviour. They also provided an insight into the most commonly borrowed products. A total of 42 per cent of the respondents indicated that social needs were behind their behaviour, 27 per cent pointed to economic needs, and 14 per cent stated personal needs were the reasons behind their retail borrowing behaviour. The authors concluded that retail borrowing seems to be triggered by a certain financial inability to maintain a personal image, and they also found patterns in returned products, i.e., that certain product categories can be used and returned without much noticeable wear. Special occasion dresses were found to be the most common category of borrowed clothing, representing 18 per cent of all categories. Piron and Young (2000) define retail borrowing as “the purchasing of items with the deliberate intention to return such items once they have been used satisfactorily”.

King and Dennis (2003) argued that the development of e-commerce and the implementation of the distance selling directive (EUR-Lex, 97, n.d.) in the EU, thus enabling a “seven-day withdrawal from the contract without penalty and without giving any reason” would encourage online deshopping behaviour. Recently, The European Parliament (EU, 2011a) accepted a strengthening of consumer rights that will stipulate a 14-day EU-wide withdrawal period for distance and off-premises sales. The new directive must be implemented by all member states within a period of two years (EU, 2011b). At present, distance sale customers within the EU are entitled to return products within certain conditions by law (EUR-Lex, 97, n.d.). Certain countries such as Finland and Germany interpreted the distance-selling directive in a way that allows customers to return products without having to pay for the return postage. However, the liberalisation of return policies often exceeds the mandated law (Mostard and Teunter, 2006), and it is not uncommon that the allowed return time is extended beyond the stipulated window, in addition to liberal postage policies where the customer pays either reduced or zero postage when returning items.

While it is clear that both new legislation and increased competition change the way firms decide upon their delivery and return policies, especially in e-commerce, it is not clear how changes in these policies will affect consumer behaviour, especially on the scale of retail borrowing. The e-commerce environment itself also changes the shopping process in several ways. First, e-commerce customers within the EU are entitled by law to return purchases without providing any reasons why. Therefore, in this study, the URD definition does not fit due to the lack of need for an authentic quality defect (the third condition); the deshopping definition also uses a similar condition, which similarly does not apply in this case. It is necessary to understand the impact of these policy changes on consumer behaviour (Kauffman and Walden, 2001). Liberal postage and return policies tend to be unofficially promoted in e-commerce due to both legislation (EUR-Lex, 97, n.d.) and increased competition. Furthermore, by selling expensive goods and promoting a liberal return policy, the retailer is often perceived as playing a key role in retail borrowing (Piron and Young, 2000), given that consumers’ knowledge of return policies appears to be linked to fraudulent returning practices (Harris, 2010).

Historically, previous research in the area of “retail borrowing” has been undertaken, where customers have been asked to discuss their past experiences,
perceptions and opinions regarding retail borrowing and fraudulently returning items. There are of course many reasons why people say one thing and then do another (Alreck et al., 2009). Authors have expressed both the limitations with the executed studies and, at the same time, given certain recommendations for future research. King and Dennis (2003) recommend researching the development of deshopping behaviour and the detection of such in an e-commerce environment. Piron and Young (2000) deem retail borrowing to be an under-researched phenomenon and suggest further research into the operational aspects of retail borrowing, among other factors. Kang and Johnson (2009) suggest that research should be performed that focuses on specific categories of clothing.

A financial inability to maintain a personal image was found to trigger the respondent’s retail borrowing in Piron and Young’s (2000) study. Party dresses could represent a category of products that are more frequently returned after customers have worn it, i.e., exhibiting retail borrowing behaviour (see Wilkes, 1978; Piron and Young, 2000; King and Dennis, 2003). A party dress represents a relatively expensive product category i.e., “special occasion clothing” (see Piron and Young, 2000) that, by definition, is used less regularly and therefore, could trigger retail borrowing behaviour. It is a typical product that is known to fulfil the retail borrower’s social needs, through attending social events, and personal needs, through self-fulfilment (Piron and Young, 2000). Aside from the financial aspect of this behaviour, the authors found patterns in returned products, where certain products may be used once without much noticeable wear, and thus, these clothes could be used for one day and then returned.

The aim of this study was to explore real customers’ purchases and the return patterns of party dresses performed under different (mostly liberal) delivery and return policies, using a fully randomised and controlled experimental setting. The main purpose of the study was to increase our understanding of consumer behaviour with respect to (re)-tail borrowing. To do so, we conducted the study in cooperation with nelly.com, which is a Nordic e-commerce site specialising in fashion and beauty. Based on the literature review and introduction, we formulated two overall research questions:

1. Are party dresses more frequently borrowed than other product categories?
2. Do lenient delivery and return policies affect the purchase and return patterns for items that are typically borrowed differently compared with other items?

The rest of this paper is organised as follows. The second section presents the hypotheses to be tested. The third section describes the methodology. In the fourth section, the results from the statistical analysis are presented and discussed. Finally, the fifth section presents the conclusions of the study.

Hypotheses

From a theoretical perspective, a delivery fee can be viewed as the fixed part of a two-part pricing structure. Two-part pricing is a subset of nonlinear pricing and can be used by firms in monopoly markets as well as by firms in competitive markets to attract more consumers (Hayes, 1987). In practice, a two-part tariff obviously involves two management decisions to determine the fixed part and the variable part of the price. However, decreasing either part while keeping the other constant will increase
demand (Lantz, 2009). Hence, a lenient delivery policy should theoretically increase demand because consumers can accept less utility from the products themselves and still result in a surplus (see also Cao et al., 2003). Previous empirical research (e.g., Lewis, 2006; Wang, 2009) supports this prediction.

The return fee can be viewed as an implicit part of the pricing structure. The decision to purchase and the decision to return could be two separate decisions (see Wood, 2001); however, for an unethical retail disposition to appear, the customer must premeditate returning the product before or at the moment of purchase (Rosenbaum et al., 2011). The expected value of the transaction is calculated at the moment of purchase such that a lenient delivery and return policy will provide the consumer with a higher expected utility. Following Piron and Young’s (2000) reasoning regarding economic needs as reasons for retail borrowing, entirely free returns, i.e., where the returning consumer receives a full refund and pays nothing, can be proven to be theoretically suboptimal (Su, 2009). However, lenient return policies should increase retail borrowing as customers expect their utility to increase (Yan, 2009) and trigger borrowing behaviour, thus increasing returns.

However, because both the explicit price structure and return policy can be assumed to have an impact on demand, one also must consider the interaction between these two factors. Mukhopadhyay and Setoputro (2004) present a model where demand is a function of customer reactions to changes in price and return policies and use the model to derive optimal conditions. Generally, price and return policy should be simultaneously optimised. Thus, in our case, the impact of lenient delivery and return conditions on retail borrowing should be analysed interactively.

To derive research hypotheses from the theoretical review above, we need to define retail borrowing. We use the definition from Piron and Young (2000) where they state that retail borrowing “is the purchasing of items with the deliberate intention to return such items once they have been used satisfactorily”. A deliberate intention to return what is purchased is likely to increase return rates in comparison with items that are ordered and returned due to sizing/fitting or other issues, and therefore, retail borrowed items are returned more frequently. According to Piron and Young (2000), economic necessity is a fundamental reason behind retail borrowing behaviour. The combination of a product category where items are relatively expensive (i.e., party dresses) and a low income of its consumers results in certain patterns of behaviour in which customers exercise retail borrowing. Therefore, lenient delivery and/or return policies should increase the proportion of borrowed party dress items in comparison with items from other product categories due to the reduction or elimination of the fixed part of borrowing (delivery and return cost).

Based on the argument above, we present the following two hypotheses:

**H1.** Party dresses are returned in a higher proportion than items in other product categories.

**H2a.** The proportion of returned party dress items increases more than other items representing other product categories when lenient policies are offered.

However, one might argue that the effect of lenient delivery and/or return policies should not increase the proportion of returned party dress items in comparison with items from other product categories because some customers who order party dresses premeditate retail borrowing before or at the time of the purchase, while other items
might be more price sensitive with regard to delivery/return policies. Thus, we present the following hypothesis:

\( H2b \). The proportion of returned party dresses increases less than items in other product categories when lenient policies are offered.

When the customer borrows a party dress for a certain social event, the customer would need a specific window of time before the actual borrowing takes place to account for delivery. If party dresses were used more frequently in retail borrowing behaviour, they would have a shorter overall order time compared to other items in other product categories. Order time is defined as the number of days between the initial offer and the actual purchase date. Thus, we present the following two hypotheses:

\( H3 \). Party dresses have a shorter overall order time than items in other product categories.

\( H4 \). Different combinations of delivery and return policies affect order time for party dresses differently than items in other product categories.

Using the same fundamental idea and logic behind \( H3 \), where customers who use retail borrowing need a specific order window of time before the actual borrowing takes place, adding time for the actual usage should therefore, on average, lengthen the return time the item or even result in it being returned later than allowed (Rosenbaum et al., 2011). Return time is defined here as the number of days between delivery and item return. A shorter return time means that items are returned faster, i.e., a shorter period of time between the physical delivery of goods and the customer returning the items. Due to the initial time margin and the time allocated to use the goods, items from the party dress category are, presumably, returned later than items in other product categories for which the “only” time needed is the time needed to try them on, i.e., there is no time margin for the actual borrowing. Thus, we present the following two hypotheses:

\( H5 \). Party dresses have a longer return time compared to items in other product categories.

\( H6 \). Different combinations of delivery and return policies affect the return time for party dresses differently from items in other product categories.

In summary, from the two general research questions specified in the previous section, we have theoretically derived the following six specific research questions:

1. Are party dresses returned more frequently than other items?
2. Do lenient policies change the frequency with which party dresses are returned?
3. Are party dresses ordered earlier than other items?
4. Do lenient policies change the order time for party dresses?
5. Are party dresses returned later than other items?
6. Do lenient policies change the return time for party dresses?
Methodology
The aim of this study was to explore real customer purchases and the return patterns of a specific category of clothing, namely “party dresses”, performed under different (mostly liberal) delivery and return policies using a fully randomised and controlled experimental setting. The main purpose of the study was to increase our understanding of the phenomenon of retail borrowing in general and, more specifically, to investigate a possible relationship between lenient delivery and return policies using a fully randomised and controlled experimental setting.

Holland (1986) identifies several criteria for making causal inferences that, when they occur simultaneously, essentially rule out any other study design other than an experimental approach. The key criterion in this matter is the researcher’s ability to rule out any alternative explanation for an observed relationship between a possible cause and effect. This is generally outside the control of a researcher who passively observes some of the processes or investigates customers’ past experiences, perceptions and opinions regarding retail borrowing behaviour and fraudulent returning practices, in contrast to a randomised controlled experiment.

This study was designed as a randomised controlled experiment with a random sample strategy. Among the 192,482 Swedish customers who had placed an order at nelly.com during the last 12 months and were subscribed to the quarterly nelly.com email newsletter in November 2010, 4,000 were randomly selected and randomised into four groups (A, B, C and D) with 1,000 in each group. The required sample size for a one-way ANOVA was found to be 1,096 orders (see Cohen, 1992) for a small effect size of \( f = 0.1 \), an alpha value of 0.05, a beta value of 0.20 (power = 0.80) and four groups, which corresponds to 274 orders in each group. From experience, the relationship between the number of orders and the number of sent newsletters was assumed to be at least 1/3. Thus, 822 newsletters would have to be sent in each group, given the conditions above. At the time of the data collection, this number was rounded up to an even 1,000 for matters of simplicity.

All of the newsletters were identical (see the Appendix) except for the delivery and return conditions: group A was offered free delivery and free return, group B was offered free return, group C was offered free delivery, and group D was the control group in the experiment (see Table I).

The respondents were informed in the newsletter that they had been randomly selected to participate in a study concerning the company’s delivery and return policies and that the study was going to be performed in cooperation with researchers at the regional university. The letter explicitly noted that all one had to do to participate in the study was to use the web site as usual to purchase items during the period of the experiment. Because this was a field experiment where the subjects were not asked to do anything departing from their normal behaviour to participate, consent is implied (Zikmund and Babin, 2007). The company anonymised all data before providing us with it.

<table>
<thead>
<tr>
<th>Free delivery</th>
<th>No free delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free returns</td>
<td>A</td>
</tr>
<tr>
<td>No free delivery</td>
<td>B</td>
</tr>
</tbody>
</table>

Table I. The four groups in the experiment
Because all customers were required to identify themselves with a login at the nelly.com web site during the checkout process, we were able to ensure that every participant received the right delivery and return conditions during their purchase. It should also be noted that nelly.com had previously offered free delivery and/or free returns on an occasional basis; therefore, offers such as these would not be regarded as unusual by the participating customers. Generally, the company adapts their delivery and return policies continuously in relation to the announced policies of their largest competitor. Hence, they do not have “ordinary” delivery and return policies.

Detailed information concerning all of the placed orders as well as breakdowns of the items ordered and returned was collected directly from the company’s ERP system. Appropriate statistical tests were used to analyse the data. More specifically, two-way ANOVAs were used to analyse metric data, and two-proportion z-tests were used to analyse percentage data because the sample sizes were large. Note that post hoc testing following the rejection of one or more null hypotheses of the ANOVA would be redundant given that we worked with a $2 \times 2$ design. Additionally, note that interaction between factors can be analysed with two-proportion z-tests due to the $2 \times 2$ design (i.e., total proportion of groups A and D vs total proportion of groups B and C). When the p-value of a two-sided test falls below 5 per cent, we will refer to the difference as significant. When the p-value of a two-sided test falls between 5 per cent and 10 per cent, we will refer to the difference as marginally significant. SPSS software, version 17.0, was used to analyse the data (SPSS Inc., Chicago, IL, USA).

Results
In this section, the results from the statistical analyses of the experimental data will be presented and discussed.

The proportion of returns
The proportion of returned items for all possible combination of policies and item types in the experiment is defined as the number of returned items divided by the number of items ordered for the specific combination. Details are presented in detail in Table II. There is no doubt that party dresses are returned in surprisingly larger proportions than the other product categories, implying a stronger presence of retail borrowing behaviour for party dresses than other product categories. The proportion of returns for different combinations ranges from a modest 13.5 per cent to a striking 36.1 per cent, which clearly prompts further analysis of return patterns. The 31.5 per cent overall return rate of party dresses is significantly higher than the 17.4 per cent overall return rate for other items ($z = 9.07, p < 0.001$). However, there is no significant relationship between delivery conditions and item type ($z = 0.89, p = 0.372$) nor between return conditions and item type ($z = 0.51, p = 0.607$). Table II clearly shows that the difference in return rate between party dresses and other items is similar for all combinations of policies. We know from previous research (Rogers and Tibben-Lembke, 1999), regarding cited reasons for returning items, that size and fit are normally the main issue when returning and that there is no evident explanation why the selected product category, party dresses, should differ from the other categories in that respect. On the contrary, shoes, bikinis and other clothing items represent categories that tend to have more specific sizing and fitting issues than party dresses when ordered online.
Order time

In Table III, the order time (in days) for all possible combinations of policies and item types in the experiment are presented in detail. The average order time for different combinations ranges from 49.2 days to 66.4 days, which lends itself to an interesting analysis of the patterns in further detail. Hence, a three-way ANOVA was created, and the results are presented in Table IV.

The difference in order time between party dresses and other items is insignificant; however there is a significant relationship between return conditions and item type ($p = 0.027$). In our data, free returns shortened the order time to 7.3 days for party dresses, but to only 1.5 days for other items. There is also a significant three-way relationship between delivery conditions, return conditions and item type ($p = 0.002$). The nature of this effect is that party dresses require, on average, 7.4 days longer to order than other items when both delivery and returns are paid for, but the time is shorter, on average 7.5 days less, than other items when delivery is paid for and returns are free. However, when delivery is paid for there are no apparent differences in the order time between party dresses and other items with different return policies.
### Table III.

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>31,821.029</td>
<td>7</td>
<td>4,545.861</td>
<td>3.501</td>
<td>0.001</td>
</tr>
<tr>
<td>Intercept</td>
<td>8,812,974.712</td>
<td>1</td>
<td>8,812,974.712</td>
<td>6,787.750</td>
<td>0.000</td>
</tr>
<tr>
<td>FreeDelivery</td>
<td>2.526</td>
<td>1</td>
<td>2.526</td>
<td>0.002</td>
<td>0.965</td>
</tr>
<tr>
<td>FreeReturns</td>
<td>13,944.145</td>
<td>1</td>
<td>13,944.145</td>
<td>10.740</td>
<td>0.001</td>
</tr>
<tr>
<td>PartyDress</td>
<td>37.226</td>
<td>1</td>
<td>37.226</td>
<td>0.029</td>
<td>0.866</td>
</tr>
<tr>
<td>FreeDelivery * FreeReturns</td>
<td>17,670.182</td>
<td>1</td>
<td>17,670.182</td>
<td>13.610</td>
<td>0.000</td>
</tr>
<tr>
<td>FreeDelivery * PartyDress</td>
<td>69.167</td>
<td>1</td>
<td>69.167</td>
<td>0.053</td>
<td>0.817</td>
</tr>
<tr>
<td>FreeReturns * PartyDress</td>
<td>6,327.138</td>
<td>1</td>
<td>6,327.138</td>
<td>4.873</td>
<td>0.027</td>
</tr>
<tr>
<td>FreeDelivery * FreeReturns * PartyDress</td>
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<td>1</td>
<td>12,396.438</td>
<td>9.548</td>
<td>0.002</td>
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<td>Error</td>
<td>5,673,853.230</td>
<td>4,370</td>
<td>1,298.365</td>
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<td></td>
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</tbody>
</table>

### Table IV.

<table>
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<tr>
<th>Source</th>
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<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected total</td>
<td>5,705,674.259</td>
<td>4,378</td>
<td>4,377</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The time to order (in days) in the different experimental categories.
As discussed in section one, the decision to purchase an item and the decision to return it could naturally be two separate decisions (see Wood, 2001). However, for the online retail borrower, the decision to return the item in question is often premeditated (Piron and Young, 2000; King and Dennis, 2003; Rosenbaum et al., 2011), and therefore, a potential financial inability to maintain a personal image (Piron and Young, 2000) would not hinder a purchase, as they will be financially reimbursed when they return the item. In contrast, other customers who do not employ this borrowing technique would most likely take their financial situation into account before purchasing an item and therefore might postpone their purchase until they have the necessary funds. This is somewhat empirically supported, given that party dresses require, on average, 7.4 days longer to order than other items when both delivery and returns are paid for. Furthermore, previous research has shown that “special occasion clothing”, obviously used on special occasions, when not borrowed, will not be purchased ahead of time because special occasions tend to occur without considerable notice and/or the possibility of limited financial resources.

It is somewhat complicated to analyse order time, and one might argue that it is impossible to state whether there is a connection between the presented interaction effect and retail borrowing. However, party dresses @nelly.com are the most sold fashion-related items that the organisation sells. Furthermore, these dresses are a typical product often seen in their TV-commercial campaigns and on the homepage of their web site. According to Piron and Young (2000), retail borrowers fulfil their social needs (attending social events, etc.) and personal needs (self-fulfilment, etc.) by engaging in this type of borrowing behaviour. Consumers are likely to be the ones who best understand what is “hot” and what might go out of stock quickly and therefore tend to order such items sooner rather than later to avoid missing the opportunity. The above reasoning, however, does not fit the free delivery and free return policies, as there is no significant effect, as one would have expected. A possible reason for the inconsistent effect is that previous marketing campaigns of @nelly.com have proven that customers are not always rational in their decisions. For instance, @nelly.com has found that free delivery increases the order rate more than a 10 per cent discount on the total sales, even though, on average, a 10 per cent discount would yield a discount of approximately SEK 80 per purchase in Swedish currency, whereas free delivery would only result in a discount of SEK 39 per purchase. It is possible that free returns trigger retail borrowing behaviour (pre-purchase) to a greater extent than other types of leniency. As implied, returning a borrowed item that was bought under free delivery and return conditions increases sales, whereas premeditated retail borrowing behaviour is less clear before or at the moment of purchase and is instead clear post-purchase, thus not reducing the order time. Previous research (Harris, 2010) has shown that customers who are prompted to purchase items due to lenient return policies tend to be more aware of return conditions; therefore, such a description is likely to apply to the profile of a retail borrower.

Even though it is not strictly related to retail borrowing, it is also interesting to note that free returns shorten the order time in general by 4.6 days ($p = 0.001$). It is worth noting that there is a significant relationship between free delivery and free returns on the general order time ($p < 0.001$). The nature of this interaction is that free returns do not shorten the order time at all for customers who receive free delivery, but it does shorten it the order time by an average of 9.8 days for customers who pay delivery charges.
Return time

Data on the return times (in days) for all possible policy combinations and item types in the experiment are presented in detail in Table V. The average return time for different policy combinations ranges from 13.3 days to 18.2 days. A three-way ANOVA was created to explore these patterns more in depth, and the results are presented in Table VI.

Party dresses have an average longer return time of 1.8 days compared to other items \((p = 0.005)\). There is also a significant three-way relationship between delivery conditions, return conditions and item type \((p = 0.021)\). The nature of this effect is that party dresses have a longer return time than other items, on average 3.9 days longer, when delivery is paid for and returns are free, but an average of 0.2 days less in their return time than other items when both delivery and returns are free. The three-way relationship where returns are free, in fact, leads to a reciprocal behaviour that fits the description of one of the conditions of an unethical retail disposition presented by Rosenbaum et al. (2011). The mean return time for party dress items when delivery is paid for and returns are free is 18.2 days and hence, well above the allowed 14 days returns policy.

On the other hand, when returns are paid for, there is no apparent difference in the return time between party dresses and other items offered under different delivery conditions.

<table>
<thead>
<tr>
<th>Free delivery</th>
<th>Free returns</th>
<th>Party dress</th>
<th>Mean</th>
<th>Std dev.</th>
<th>Number of returned items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13.8</td>
<td>7.6</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>14.7</td>
<td>6.9</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>14.1</td>
<td>7.4</td>
<td>158</td>
</tr>
<tr>
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<td>0</td>
<td></td>
<td>14.4</td>
<td>7.2</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Total</td>
<td>18.2</td>
<td>8.7</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>15.6</td>
<td>7.9</td>
<td>187</td>
</tr>
<tr>
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<td>0</td>
<td>Total</td>
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<td>7.4</td>
<td>241</td>
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<tr>
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<td>16.7</td>
<td>8.1</td>
<td>104</td>
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<tr>
<td></td>
<td></td>
<td>Total</td>
<td>14.9</td>
<td>7.7</td>
<td>345</td>
</tr>
<tr>
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<td>7.7</td>
<td>173</td>
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<td>1</td>
<td>Total</td>
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<td>8.3</td>
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<td></td>
<td>Total</td>
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<td>7.9</td>
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<tr>
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<td>Total</td>
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<td>9.5</td>
<td>206</td>
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<tr>
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<td>Total</td>
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<td>8.7</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
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<td>9.2</td>
<td>288</td>
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<tr>
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<td>Total</td>
<td>14.1</td>
<td>8.7</td>
<td>379</td>
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<tr>
<td></td>
<td>1</td>
<td>Total</td>
<td>15.1</td>
<td>8.5</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>14.4</td>
<td>8.7</td>
<td>531</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>Total</td>
<td>13.5</td>
<td>7.6</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Total</td>
<td>15.4</td>
<td>7.8</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
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<td>7.7</td>
<td>401</td>
</tr>
<tr>
<td></td>
<td>0</td>
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<tr>
<td></td>
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<td>Total</td>
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<td></td>
<td>Total</td>
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<td>8.7</td>
<td>475</td>
</tr>
<tr>
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<td>0</td>
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<td>8.2</td>
<td>620</td>
</tr>
<tr>
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<td>Total</td>
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<td>8.4</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>14.6</td>
<td>8.3</td>
<td>876</td>
</tr>
</tbody>
</table>

Table V.
The time to return (in days) in the different experimental categories
Summary of the statistical analyses

In summary, the significant statistical results in this study are as follows:

- Party dresses have a higher return rate than other items.
- Party dresses have a longer return time than other items.
- Free returns shorten the order time more for party dresses than for other items.
- The impact of free returns on order time for party dresses depends on the offered delivery conditions.
- The impact of free delivery on return time for party dresses depends on the offered return conditions.
- Free returns generally shorten the order time. In particular, free returns generally shorten the order time for customers who pay for delivery, but free returns do not appear to shorten the order time for customers who do not pay for delivery.

It should be noted, however, that even though these results are statistically significant, the effect sizes are small or medium in most cases. For example, the observed significant difference in return rate between party dresses and other items is characterised by an effect size index \( h = 0.33 \) (Cohen, 1992). When large sample sizes are used, small differences can be considered statistically significant. Hence, the large number of subjects can be viewed as both a strength and a limitation of this study.

Conclusion

The main purpose of the study was to increase our understanding of consumer behaviour with respect to (re)-tail borrowing. We have detected certain purchase and return patterns that clearly indicate that (r)etail borrowing exists in fashion e-commerce. First, the experiment revealed that party dresses have a significantly higher return rate than other items and that party dresses, on average, are returned later than other items. The latter finding is presumably related to the necessary time margin for delivery and time need to use the item after it has been borrowed. The e-commerce customers’ legal right to return without having to state any reason (i.e., quality defect) and the fact that online retail borrowers do not have to interact...
with any shop personnel are likely to change the borrowing behaviour of online customers, in contrast to the practice of ordinary retail borrowing. Therefore, we would denote the purchase and return patterns discovered as implicit signs of online retail borrowing.

Second, we found evidence that lenient delivery and return policies reinforce (r)e-tail borrowing behaviour, albeit not always in the expected ways. We believe that a plausible explanation for this behaviour is that there are two types of borrowing customers. The “classic” retail borrower is prompted to engage in such behaviour by the offer of free returns to minimise the total spending when premeditating retail borrowing. However, free delivery in combination with free returns might trigger another, more spontaneous, purchasing behaviour that due to overspending results in borrowing that was not premeditated at the moment of purchase, but becomes intentional and premeditated at the moment of return. It is even possible that unintentional borrowing behaviour may lead some individuals to future premeditated borrowing behaviour; however, further research is needed to shed light on this hypothesis.

Differences in delivery and return policies seem to impact consumer purchase and return behaviour differently depending on the item type. Therefore, we suggest a more differentiated view of how to apply such policies from a managerial perspective. Offering the same delivery and return conditions to all types of customers and products cannot be generally considered optimal with respect to profitability. For example, one might consider shortening return windows to discourage borrowing behaviour for items such as party dresses that otherwise tend to be borrowed. Wilkes (1978) suggests the use of non-removable price labels and preventive measures to reduce borrowing behaviour. One such preventive measure could be to safeguard (Rogers et al., 2002) against late returners. Gatekeeping, so to speak, (Hjort et al., 2011) could be accomplished through the use of an online registration tool for returned items, and this tool could decline unwarranted or late (after the stipulated 14 days) returns. The use of non-removable price labels could be used as a condition when providing customers with such lenient policies. Exploring what effect such preventive measures would have on the borrowing behaviour would also require further research.

Finally, we would like to emphasise that although in this experiment, the consumer behaviour patterns revealed fit the definition of retail borrowing, a deeper understanding of borrowing behaviour and its relationship to lenient policies requires a qualitative research approach.

References


Appendix. The newsletter
This is a translated version of the letter to the respondents in group A. The respondents in the other groups received similar letters.

Help us at nelly.com to become better!

In cooperation with a research team from the University of Borås, we are performing a study among our customers regarding our delivery and return conditions. You are one of the customers randomly selected to participate in the study.

Until February 18, you will receive free delivery and free returns when you shop at nelly.com. You do not have to do anything out of the ordinary to take advantage of this offer. Delivery fees will be deducted automatically when you pay using the website. Return fees will be deducted automatically during the return process.

We are performing this study in order to enable us to enhance our offers to our customers.

Enjoy your winter shopping!

/nelly.com

About the authors
Klas Hjort is a PhD student at The Swedish School of Textiles, University of Borås. He has a licentiate in technology management and economics from the Chalmers University of Gothenburg (2011). His research interests include e-commerce, supply chain management and specifically returns management, consumer behaviour, ICT, demand chain management, logistics and sustainability. His research has been presented at The Nordic Logistics Research Network (NOFOMA) conference and published in the NOFOMA Proceedings in 2009-2011. Klas Hjort is the corresponding author and can be contacted at: klas.hjort@hb.se

Björn Lantz is an Assistant Professor at the School of Engineering, University of Borås. He has a PhD in business from the University of Gothenburg (2000). His research interests include consumer behaviour, pricing, price regulation, consumer involvement management, corporate finance, logistics and methodology. His work has been published in European Journal of Operational Research, Energy Economics and Information Economics and Policy.

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Hjort, K., Lantz, B. & Ericsson, D. (2012), “Customer segmentation based on buying and returning behaviour: Supporting differentiated service delivery in fashion e-commerce”, Proceedings of the 17th International Symposium on Logistics, 8–11 July 2012, Cape Town, South Africa. The paper was pre-selected by the Organising Committee of the International Symposium on Logistics (ISL) as one of the top three papers on strategy, and sent to IJPDL for consideration as the best SC strategy paper and possibly publication. The editors of the International Journal of Physical Distribution and Logistics Management chose the paper as the best of the three pre-selected supply chain strategy papers from ISL 2012. Submitted to IJPDL for the review process on 13 August.
CUSTOMER SEGMENTATION BASED ON BUYING AND RETURNING BEHAVIOUR: SUPPORTING DIFFERENTIATED SERVICE DELIVERY IN FASHION E-COMMERCE

ABSTRACT

PURPOSE:
Designing supply chains and organisational strategies in the fast-moving consumer goods business, especially within fashion e-commerce, requires a profound understanding of customer behaviour and requirements. The purpose of this paper is twofold: firstly, to empirically test and support whether a “one size fits all” strategy really fits all in the fashion e-commerce business. Secondly, this study aims to evaluate whether consumer returns are a central part in the creation of profitability, and if so, the role of returns management in the overall supply chain strategy.

RESEARCH APPROACH:
Historically, customer segmentation based on buying behaviour lacks empirical evidence to support its usefulness (Godsell et al., 2011). This study was conducted in collaboration with Nelly.com, a Nordic e-commerce site that specialises in fashion and beauty. Transactional sales and return data from a two-year period were analyzed. Data from four markets was used to categorize customers based on their buying and returning behaviour and investigated according to each customer’s net contribution to the business.

FINDINGS AND ORIGINALITY:
In theory, segmentation based on the customer’s buying behaviour should be performed using point of sales data or a more qualitatively based understanding (Gattorna, 2010). In the fast-moving business of e-commerce, customer returns are a valuable service parameter. If return management is not effectively used, returns often decrease profitability. The e-commerce business collects and stores vast amounts of data; yet, this wealth of information is seldom used in developing service differentiation. Organisations often offer the same level of service to all customers irrespective of each customer’s net contribution. In this study, behaviour patterns were analysed, and it was determined that grouping customers based on both sales and return patterns facilitates a differentiated service delivery approach. It enables the company to offer different delivery and return conditions to specific customers in order to increase their net contribution. Interestingly, we found that the most profitable customer is the repeat customer who frequently returns goods.

RESEARCH IMPACT:
The research reported in this paper empirically supports the theory that customer buying and returning behaviour could be used to categorize customers in order to guide a more differentiated approach. However, to create a deeper understanding of the requirements for each customer group, future and more qualitatively oriented research is needed.

PRACTICAL IMPACT:
The main purpose for differentiating service delivery levels is related to the problem of over and underservicing when using a “one size fits all” approach (Gattorna, 2006). Our findings support and suggest the implementation of service delivery based on a more dynamic approach that nurtures resources and links the supply chain and/or organisational strategies with categorized customer buying and returning behaviour.

KEYWORDS:
Strategy, Customer segmentation, Differentiation, E-commerce, Buying behaviour, Supply Chain Management

Paper type: Research paper
INTRODUCTION

In shifting market conditions, the choice of supply chain strategies is critical when competing to serve customers (Gattorna, 2010). It is accepted in theory that the “one size fits all” approach to supply chain design is no longer valid (Christopher et al., 2006; Gattorna, 2010; Ericsson, 2011; Godsell et al., 2011). Still organisations, even in the highly competitive e-commerce market, utilise a “one size fits all” strategy to create and deliver value to their consumers, thereby implicitly assuming that consumers’ demands and buying behaviour are homogeneous, and therefore, there is no profitable reason to differentiate delivery in terms of service.

However, e-commerce consumers' buying behaviour is not homogenous, especially in the fast-moving consumer goods (FMCG) business. FMCG organisations compete not only in products and price, but also in a large variety of services. For example, accessibility and speedy delivery are critical determinants for success. Returns management (RM) is clearly a part of the parcel, and, if handled properly, it can decrease costs, while simultaneously increasing revenue and serving as a means of competition. The total offer is called the “value package” and consists of the physical product plus the services surrounding it. Some of these services are the order qualifiers, and some are the order winners (Ericsson, 2011).

If customer groups exist with different service requirements, then it makes sense to try to match these with differentiated supply chain strategies (Godsell et al., 2011). Gattorna (2010) argues that organisations, or rather supply chains, need not only to understand the competitive forces, they need also to understand their customers' buying behaviour. Furthermore, they need to understand how to use the knowledge internally to offer and deliver suitable value propositions. In e-commerce this has implications on service delivery as well as the sourcing of products and thus on how we design the supply chains. In designing supply chains, Godsell et al. (2006) express a need to replace the focus from the product to the end-customer and specifically on the end-customer’s buying behaviour. Traditionally there are two different schools of thought in supply chain design (Godsell et al., 2011). The first theory is the lean-agile supply chain design, which is product driven. The second school of thought is that strategic alignment is driven by customer buying behaviour. Both schools take a supply chain approach; thus, neither theory focuses on the consumer or the end-user as is done in this research.

Supply chains are omnipresent (Gattorna, 2010), and e-commerce organisations exist in many supply chains or supply networks. As noted earlier, it is accepted that the “one size fits all” approach to supply chain design is no longer valid, and the suggested number of parallel supply chains varies and is naturally context dependent. It depends upon diverse variables such as demand uncertainties, product characteristics, replenishment lead-times, et cetera. Traditionally literature describes supply chain design from a manufacturer’s perspective, trying to link the supply side with the demand side, often with a product focus (see Crooton et al., 2001; Christopher et al., 2006). In e-commerce, the focus would naturally shift to the e-commerce organisation, which changes the focus from manufacturing towards sourcing of and delivery of finished goods. However, as e-commerce organisations grow, they are likely to try to design and produce their own products and brands in search of greater margins, which shifts the focus back towards manufacturing or at least a combination of sourcing and manufacturing. This exemplifies the need for at least two supply chains, probably even more. In e-commerce, the critical focal point is to match the demand from consumers with an appropriate set up of sourcing, final distribution and returns-handling activities. If demand variations for different products exist, it is probably useful to apply diverse sourcing strategies in order to match demand uncertainties with responsive supply strategies. Gattorna (2010) argues that in a typical supply chain two to four dominating customer buying behaviours exist that need to be understood in detail. Further, these dominating behaviours cover approximately 80% of the customers, and the same dominating patterns fit other markets as well.
Christopher et al. (2011) explain the need for combining both product characteristics and market considerations when designing supply chain capabilities and selecting supply chain pipelines. In the selection of pipeline types there are eight theoretical types to choose from depending on whether products are standard or special, demand is stable or volatile and lastly if the replenishment lead-time is short or long (Christopher et al., 2006). According to Christopher et al. (2006), standard products tend to be more stable in demand with longer life cycles, whilst special products tend to be the opposite, i.e. erratic demand and shorter life cycles. Therefore, there is a connection between demand predictability and product characteristics, which reduces the amount of theoretical pipeline types to four (Christopher et al., 2006, p. 282). Depending on product demand and supply characteristics, Christopher addresses a lean, agile or a combination of the two, i.e. a leagile approach (see Christopher et al., 2006, p. 283).

In many markets, especially the e-commerce market where several organisations are competing, i.e. selling the same brand or similar products with little or no difference in price, it is difficult to maintain a competitive edge through the product itself (Christopher, 2005). Therefore, the service level and the delivery service as such becomes a critical determinant for market success. The e-commerce supply chain often appears, in theory and practice, as a one-dimensional chain. However, in reality, it is a spaghetti bowl of interrelated activities or processes sourcing thousands of SKU's, receiving, storing, picking, packing and distributing them to the end user and later receiving and handling consumer returns. In the e-commerce business, especially in fashion, delivery from stock to consumers makes it difficult to apply the lean/agile approach for the final distribution. However, customers buying and returning behaviour might affect the profitability if it is not matched with a suitable delivery and return strategy.

In the fashion e-commerce business, a trend towards more liberalised delivery and return conditions as a way to cope with competition inside the industry has become evident. Additionally, these lenient return policies attract new consumers from the traditional retail chains. Consequently, return policies are a part of marketing practice (Autry, 2005), and therefore returns management (RM) is surely a part of the value creation process. RM is the part of supply chain management that includes returns, reverse logistics, gatekeeping and avoidance (Rogers et al., 2002, pp. 5). Mollenkopf et al. (2011) investigate the marketing/logistics relationship relative to RM. They found that the effectiveness of RM was enhanced when firms coordinated their strategic and operational activities. Clearly RM needs to be efficient; in some cases, however, it seems that it is also a part of the value creation not only the value recovery. Stock (2009) emphasises that product returns will continue to be a part of business operations, and literature indicates that competition is increasing and consumer demands are surely following this development. Therefore, there is a need to align RM within the supply chain strategy where the whole supply chain needs to operate efficiently and effectively and returns are no exception (Stock, 2009).

The aim of the changes in delivery and return conditions is to attract and create loyal and repetitive customers, thereby increasing sales. However, a liberal return policy increases returns (Wood, 2001). There is, however, no direct correlation between increasing sales and maximizing profitability. Differences in service requirements might affect both sales and profitability. When utilizing a “one size fits all” strategy correctly, one would expect to find a uniform response or behaviour from consumers, i.e. no grouping when analysing consumers’ loyalty in terms of repetitiveness and profitability in terms of contribution margin.

This study set out to characterise customer segments in terms of buying and returning behaviour as a starting point for grouping customers and their response to a “one size fits all” approach. If there are considerable differences in how customers behave, then one ought to investigate these differences in more detail and analyse how it might reflect upon product characteristics and the sourcing of finished goods. Gattorna (2010) indicates that the most critical point to start with is the customers’ buying behaviour,
especially in the e-commerce business focusing on sourcing of finished goods and delivering from stock. Segmentation as such is a well-established concept (Gattorna, 2010; Christopher et al., 2011), but ways to segment are quite widespread. (For reviews of traditional segmentation techniques see (Bonoma and Shapiro, 1984; Coill et al., 2008)). Identified segments, regardless of the technique used, indicate a need for a differentiated product and service delivery, thus abandoning the old and out-dated “one size fits all” approach.

Designing the matching supply chain should mirror the demand side requirements, and in e-commerce this means delivering the appropriate product and service to the consumer/end-user. If differences exist in how customers respond to a “one size fits all” strategy, then it is logical to increase the understanding of customers buying behaviour. Gattorna (2010, pp. 62-63) presents five different ways to perform the behavioural segmentation. These methods would likely fit, although they are quite time consuming. Often literature presents business techniques developed for customers. In the rapidly evolving business to consumers (B2C) e-commerce, the fifth method where Gattorna (2010) creates consumer insight using point of sales (POS) data and uses sophisticated data mining techniques could be used. However, e-commerce business maintains a vast amount of transactional data that could be used to segment the consumers based on their behaviour. It could be used to segment consumers based on their buying and returning behaviour measuring their net contribution. A “one size fits all” supply chain strategy inherently assumes that there is one large segment of customers in the market with the same requirements and demands for products and services. It is assumed that a homogenous customer group with the same requirements and demands share a similar buying behaviour.

Organisations perform a vast number of different activities and procedures, such as the delivery and return processes. These activities drive costs that affect the price charged for products and services. In addition, these activities mean different things to different consumers, i.e. they are more or less important. Therefore, performing activities better or more efficiently might result in a competitive advantage (Porter, 1996). Performing different activities than competitors might also result in a competitive advantage; however, this is not necessarily cost dependent as it might deliver a value advantage. According to Porter (1996), differentiation arises from a choice of activities and from how organisations perform them. In the rapidly growing e-commerce business, especially in fashion, the competition is quite fierce. Depending on what products e-commerce consumers are purchasing, the delivery and return policies might be more or less critical. Non-adopters or new customers might therefore hesitate to purchase products where fit and size problems are apparent, such as shoes or certain non-flexible garments. Certain companies in the shoe business (Zappos.com, Brandos.se, Hippo.se) are truly generous and offer all customers (Zappos only domestic customers) both free delivery and free returns. This is an indication that these companies see the delivery and return conditions as critical to their business. However, even here the strategy is “one size fits all” and they are therefore likely to over-service some customers (Gattorna, 2010). Overservicing is costly and will affect profitability, and customers who misuse this service will increase costs that will have to be paid by all customers returning or not. Misuse occurs when the liberal delivery and return policies affect a consumer’s buying behaviour, i.e. ordering more than one size, etcetera when returns are free. In the global retail industry, companies are likely to see the surrounding complexity but attack it with an operational sledgehammer (Gattorna, 2010). It might be easier and cheaper to deliver only one service level to all customers; however, it is not the most profitable way, as it will undoubtedly under or overservice some customer groups.

Traditionally organisations have seen commercial product returns as a nuisance (Blackburn et al., 2004; Guide and Van Wassenhove, 2006) and a necessary evil, a painful process, a cost centre and an area of potential customer dissatisfaction (Stock et al., 2006). Organisations have realized that effective RM can provide a number of benefits, such as improved customer service, effective inventory management and
product dispositioning (Norek, 2002; Rogers et al., 2002; Stock et al., 2006; Mollenkopf et al., 2007a; Mollenkopf et al., 2007b; Frankel et al., 2010; Mollenkopf, 2010). If organisations view returns as a cost driver rather than a competitive edge, they miss the potential value it could add to them and their customers (Mollenkopf et al., 2007a). From a consumer’s perspective online purchases represents a certain level of risk (Mollenkopf et al., 2007b) relating to product quality, size and fit issues. The customer has to await the delivery and the execution of service delivery as well. Mollenkopf (2007b) argues that a well executed handling of returns could act as a service recovery opportunity, where the customer evaluates the ongoing service delivery during a particular purchase experience. According to Andreason (2000), service recovery affects customer loyalty. This also follows the arguments of Harrison and van Hoek (2008) that service performance is important, as customers’ perception of delivered products and services is what creates loyal customers. Thus, the importance of RM should not be underestimated in distance sales. RM has started to gain a strategic role in organisations (see Rogers and Tibben-Lembke, 1999). It is time to position RM in its proper place in the supply chain strategy.

This paper views segmenting customers based on their buying behaviour as the starting point and driver for supply chain strategies. Globalisation has reduced consumers’ behavioural homogeneity within countries and increased commonalities across countries (Broderick et al., 2007). This facilitates a development of global strategies targeting similar segments in different countries. In a consumer context, behavioural homogeneity deals with the decision-making processes that lead to a purchase decision, and it is used to predict and explain market segment responsiveness (Broderick et al., 2007). Hoyer (1984) investigated consumer decision processes regarding repeat purchases and Broderick et al. (2007) used this in their study of consumer behaviour. They performed a survey using questions such as “How often do you purchase?” to analyse behavioural homogeneity. Asking questions regarding future purchase and/or historical return behaviour will likely present bias, as one can evaluate how questions and answers are interpreted as well as the accuracy of the responses. It is possible that respondents say one thing and then do another (Alreck et al., 2009). Further, there are also problems when trying to foresee the future and/or remembering the past. Observing customers’ behaviour online presents other methodological issues, especially post purchase behaviour, as certain decisions might involve a continuous rather than a discrete processing (Hoyer, 1984), i.e. whether or not to return a purchased item. Any data tend to be an historical snapshot of a phenomenon under study. In this case, consumers are a moving target in a continuous change due to increased competition and an increased focus on service delivery. Kim and Kim (2004) investigated customers’ purchase intentions for clothing and expressed that their conclusions might not hold for long given the rapid development in e-commerce. In the fast moving global e-commerce business, it is probably difficult to predict and/or explain consumer behaviour using any type of data. However, customer (consumer) insight can be created using transactional data, and according to Gattorna (2010), using behavioural data alongside transactional data makes it possible to better predict customer behaviour. Transactional data including purchase and return behaviour, can therefore be useful when segmenting customers. Utilizing actual purchase and return data to uncover how customers behave regarding delivery and return policies, reduces certain methodological issues regarding data collection, i.e. perceptions about the future or remembrances of the past. The data as such follows a buying behaviour over time (not a snapshot) and should, therefore, result in fewer validity problems as it measures and follows (if data is updated) a real behaviour, not intentions or perceptions.

In designing supply chain strategies, the literature describes, from a manufacturer perspective, that “one size fits all” is no longer valid, and further, that organisations or rather supply chains need to align with consumers’ buying behaviour (Gattorna, 2010). Stock and Mulki (2009) argue for the importance of RM within supply chains, as returns are likely to continue to be a part of business operations. Consumer returns are a central
part of e-commerce market operations. The overarching hypotheses for this paper are firstly, that the “one size fits all” strategy does not fit in the fashion e-commerce market either (Christopher et al., 2006; Gattorna, 2010; Ericsson, 2011; Godsell et al., 2011). Secondly, RM is a central part of the supply chain (Autry, 2005; Stock and Mulki, 2009; Mollenkopf et al., 2011) and should be aligned in the design of supply chain strategies. Therefore, the purpose of this paper is twofold: firstly, to empirically test and support whether a “one size fits all” strategy really fits all in the fashion e-commerce business. Secondly, this study aims to evaluate whether consumer returns are a central part in the creation of profitability, and if so, the role of RM in the overall supply chain strategy.

RESEARCH DESIGN, METHOD AND MEASUREMENT

Designing supply chain and organisational strategies in the fast moving consumer goods business, especially within fashion e-commerce, requires a profound understanding of customer behaviour and requirements. Therefore, the development of supply chain strategies needs to be both context specific and close to the competitive environment; therefore, it is relevant with a single case design for testing the well known “one size does not fit all” theory. To test the overarching hypotheses presented in the previous section, we need to select a case organisation, determine a unit of analysis and collect and analyse data. The selected case organisation Nelly.com was selected mainly because they fit the purpose to test specific theories, i.e. they do not segment customers or differentiate what they offer customers in terms of products or services. Further, the organisation was willing to support the research with transactional data to test the theory on an organisational and customer level. For the quantitative analysis, Nelly.com exported transactional data from their ERP system. The data contained all (502,429) orders for a period of two years (2008-2009) covering their four markets in Denmark, Finland, Norway and Sweden. As the analysis was performed on a customer level, the authors performed detailed calculations to reveal each customer’s order sales figures, return figures, contribution margin, etc. Thereafter each customer was analysed in terms of total sales, average sales per order, total contribution margin, average contribution margin, total number of orders, and total number of returns. The organisation’s operations manager was interviewed on site during the research and supplied the researchers with vital information regarding freight costs, return freight costs and costs related to the handling of orders and returns.

To test the hypotheses in terms of construct validity, the financial contribution of customers was categorised according to their buying and return habits. Customers were categorised as either repeat or non-repeat customers, depending on whether they made only one purchase or several purchases during the period. They were also categorised as either returners or non-returners, depending on whether they returned at least one item during the period or not. Using this perspective, four different types of customers emerged, and they were categorised as Type A, Type B, Type C, and Type D (see Figure 1).

<table>
<thead>
<tr>
<th>Buying Habits (BH)</th>
<th>Return Habits (RH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-repeat Customer (0)</td>
<td>Type A</td>
</tr>
<tr>
<td>Repeat Customer (1)</td>
<td>Type C</td>
</tr>
<tr>
<td>Non-returner (0)</td>
<td>Type B</td>
</tr>
<tr>
<td>Returner (1)</td>
<td>Type D</td>
</tr>
</tbody>
</table>

Figure 1 The four types of customers

Differences in contribution per order and contribution per customer and year among the four types of customers were described on a country basis and were further analysed with two-way ANOVAs.

RESULTS

Contribution per order

Table 1 presents descriptive statistics regarding the contribution per order for all four countries.
Two-way ANOVAs were conducted on the data for all countries to explore the observed differences in contribution per order more in detail. Table 2 presents the ANOVA for the Swedish subsample (the significant patterns are again identical for all four countries).

Table 2 ANOVA on contribution per order in Sweden

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>456861012</td>
<td>3</td>
<td>152287004</td>
<td>1383</td>
<td>&lt; 0.001</td>
<td>0.025</td>
</tr>
<tr>
<td>Intercept</td>
<td>9640321806</td>
<td>1</td>
<td>9640321806</td>
<td>8752</td>
<td>&lt; 0.001</td>
<td>0.347</td>
</tr>
<tr>
<td>Buy habit</td>
<td>158668911</td>
<td>1</td>
<td>158668911</td>
<td>1441</td>
<td>&lt; 0.001</td>
<td>0.009</td>
</tr>
<tr>
<td>Return habit</td>
<td>303417785</td>
<td>1</td>
<td>303417785</td>
<td>2755</td>
<td>&lt; 0.001</td>
<td>0.016</td>
</tr>
<tr>
<td>Buy habit * Return habit</td>
<td>158949373</td>
<td>1</td>
<td>158949373</td>
<td>1443</td>
<td>&lt; 0.001</td>
<td>0.009</td>
</tr>
<tr>
<td>Error</td>
<td>18127084710</td>
<td>164577</td>
<td>110143</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33575189056</td>
<td>164581</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>18583945722</td>
<td>164580</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Repeat customers and non-returners generate a significantly higher contribution per order \((F = 1441, p < 0.001\) and \(F = 2755, p < 0.001\) respectively). There is also a significant interaction effect between the factors \((F = 1443, p < 0.001)\). For non-returners, the contribution per order is not significantly different depending on whether they are repeat customers or not. Returners, on the other hand, generate significantly higher contribution per order if they also are repeat customers.

**Total contribution per customer and year**

Table 3 presents descriptive statistics regarding total contribution per customer and year for all four countries. Note that the values for non-repeat customers are the same as in Table 1.

Table 3 Total contribution per customer and year, note number of orders n* in 1000

<table>
<thead>
<tr>
<th></th>
<th>SWE</th>
<th>NOR</th>
<th>DK</th>
<th>FIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH</td>
<td>Mean</td>
<td>SD</td>
<td>n*</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>327</td>
<td>356</td>
<td>80</td>
<td>559</td>
</tr>
<tr>
<td>1</td>
<td>157</td>
<td>339</td>
<td>19</td>
<td>349</td>
</tr>
<tr>
<td>Total</td>
<td>295</td>
<td>359</td>
<td>98</td>
<td>525</td>
</tr>
<tr>
<td>RH</td>
<td>Mean</td>
<td>SD</td>
<td>n*</td>
<td>Mean</td>
</tr>
<tr>
<td>0</td>
<td>327</td>
<td>272</td>
<td>29</td>
<td>571</td>
</tr>
<tr>
<td>1</td>
<td>300</td>
<td>317</td>
<td>37</td>
<td>513</td>
</tr>
<tr>
<td>Total</td>
<td>312</td>
<td>298</td>
<td>66</td>
<td>544</td>
</tr>
<tr>
<td>RH</td>
<td>Mean</td>
<td>SD</td>
<td>n*</td>
<td>Mean</td>
</tr>
<tr>
<td>0</td>
<td>327</td>
<td>336</td>
<td>109</td>
<td>562</td>
</tr>
<tr>
<td>1</td>
<td>253</td>
<td>331</td>
<td>56</td>
<td>448</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>336</td>
<td>165</td>
<td>532</td>
</tr>
</tbody>
</table>
Two-way ANOVAs were conducted on the data for all countries to explore the observed differences in total contribution per customer and year more in detail. Table 4 presents the ANOVA for the Swedish subsample (the significant patterns are again identical for all four countries).

Table 4 ANOVA on total contribution per customer and year in Sweden

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
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</thead>
<tbody>
<tr>
<td>Corrected Model</td>
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<td>0.173</td>
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<tr>
<td>Intercept</td>
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<td>58055895333</td>
<td>62922</td>
<td>&lt; 0.001</td>
<td>0.277</td>
</tr>
<tr>
<td>Buying habits</td>
<td>24136466847</td>
<td>1</td>
<td>24136466847</td>
<td>26160</td>
<td>&lt; 0.001</td>
<td>0.137</td>
</tr>
<tr>
<td>Return habits</td>
<td>413915532</td>
<td>1</td>
<td>413915532</td>
<td>449</td>
<td>&lt; 0.001</td>
<td>0.003</td>
</tr>
<tr>
<td>Buying habits * Return habits</td>
<td>2537269709</td>
<td>1</td>
<td>2537269709</td>
<td>2750</td>
<td>&lt; 0.001</td>
<td>0.016</td>
</tr>
<tr>
<td>Error</td>
<td>151849456970</td>
<td>164577</td>
<td>922665</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>250478290897</td>
<td>164581</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>183612018543</td>
<td>164580</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The fact that repeat customers generate a significantly higher total contribution per customer and year (F = 26160, p < 0.001) is not surprising, to say the least. More interesting is the fact that returners generate a significantly higher total contribution per customer and year than non-returners (F = 449, p < 0.001). The interaction between the factors is also significant (F = 2750, p < 0.001). For non-repeat customers, the total contribution per customer and year is significantly lower if they also are returners. For repeat customers, however, the total contribution per customer and year is significantly higher if they also are returners.

**DISCUSSION AND CONCLUSIONS**

Gattorna (2010) highlights the importance of understanding the dominating buying behaviour in a supply chain. This study tested whether the “one size fits all” strategy results in a homogenous behaviour in fashion e-commerce. The grouping of customers (see Figure 1) performed in this paper is not a segmentation as such; however, it surely indicates a heterogeneous buying behaviour thus requesting further qualitative research regarding a differentiated service delivery. The results from the quantitative analysis show an interesting pattern which supports both Gattorna’s (2010) theory that the
dominating behaviour found in one market appears in the others as well. Further, the findings also support the theory about reduced behavioural homogeneity within countries and increased commonalities across countries (Broderick et al., 2007) as the analysis did find a heterogeneous pattern within markets and matching patterns among markets. The research design used does not allow for discussion as to whether the behaviour has changed over time as suggested by (Broderick et al., 2007); it only acknowledges the matching patterns.

The increasing competition of channels versus channels rather than companies versus companies puts the highlight on all types of relations between and among entities in the supply chain. Relationships grow deeper and more profound and develop into new areas. RM is one of the emerging and important new areas. It is important in all the consecutive dyads in the chain, but it is of particular vital interest in the link between the retailer and the consumer. RM is of great importance for building strong and lasting relations in most dyads, but ultimately, it is decisive in gaining competitive advantage and profitability. RMs role as order winner has not been studied explicitly previously, but this study shows that using purchasing and return data as bases for segmentation can improve performance considerably.

Most eBusiness companies have a wealth of data concerning returns. However, it can be stated that even though they are drowning in data, they are starving for information. This means that they need a guideline for how to analyze existing data and how to collect valuable information.

Experiments with different tariffs for transportation and returns show that consumer behaviour is influenced by differentiated costs. The question is how to use this in a systematic segmentation model. This research shows one possible approach is to use return data as a vital part of the model and complement it with purposefully collected data concerning buying behaviour (Ericsson, 2011). This fits quite well with the evolving demand chain approach with its focus on consumer behaviour, insight and alignment of marketing, sales and logistics activities.

It also goes hand in hand with the development of retailing with increasing co-creation and reliance on social media. The term co-creation is not new, however, but it is now receiving more attention as companies endeavour to differentiate themselves from the competition. Where in the past value was created by companies in the chain, value today is co-created at multiple points of interaction. Not only the physical product, but also the services in the value package can be co-created. RM is one of the most promising areas for co-creation!

To summarise these research findings and relate the results to the overarching hypotheses and research purpose, the authors conclude that there is conclusive support for both hypotheses. The behavioural model described in this pattern shows that customers behave in a heterogeneous way and this indicates that the “one size fits all” theory is obsolete as the literature indicates (Christopher et al., 2006; Gattorna, 2010; Ericsson, 2011; Godsell et al., 2011). The results also support previous findings that RM is an important part of the supply chain (Norek, 2002; Rogers et al., 2002; Stock et al., 2006; Mollenkopf et al., 2007a; Mollenkopf et al., 2007b; Frankel et al., 2010; Mollenkopf, 2010), as consumer returns are an important part of e-commerce customer behaviour and therefore important both to the case organisation and its partners, including the customers. Further, Mollenkopf (2007b) highlights the risks involved in e-commerce and the importance of RM in the service recovery process.

This research empirically supports the importance of RM in the service recovery in fashion e-commerce, as quite a large group of customers are systematically returning. However, companies using a “one size fits all approach” are focusing solely on RM efficiency and therefore missing the opportunity to create a competitive edge. They are missing the potential value it could add to the organisation and their customers.
(Mollenkopf et al., 2007a) as well as their supply chain partners. A differentiated return service might attract new customers (non-adopters) and better support the customer groups with diverging patterns or returns identified in this paper as RM. Clearly, this is a part of the value creation, at least to certain customers.

We are all hard-wired with a range of values as humans, and we all have different expectations towards products and services. So, therefore there is an interaction between product/service categories and buying behaviour, but it is the buying behaviour that determines demand patterns (Gattorna, 2010) and therefore how we should engineer our supply chains, forward and reverse (RM). And it is the range of buying behaviours which determine the number of supply chains in the end- with a bit of approximation to make the whole thing workable.

**FUTURE RESEARCH**

The findings reported in this study show how customers behave and that there clearly is a heterogeneous response from customers on the “one size fits all” strategy. It is important though to stress that the segmentation is but a starting point for aligning resources of the firm (Gattorna, 2010) and the supply chain. Future research should include qualitative research that creates a detailed understanding of why customers behave differently, it is important to investigate their values, and how to, from a supply chain perspective, design and deliver matching value propositions.

E-commerce is an extremely competitive market place (Kim and Kim, 2004). Therefore, the demand predictability is troublesome, and customers returning goods increase the uncertainty and variability of demand. Early indications of demand, in season, might turn out differently and change the pattern when returns arrive later in time. This might have implications on how we source and replenish products. Therefore, future research needs to address the behaviour pattern described in this paper in combination with different product categories. This means testing Gattornas (2010) dynamic alignment approach in e-commerce aligning customers/market, strategy, internal cultural capability, and leadership style.

**REFERENCES**


