The Impacts and Requirements of Consumer-Focused New Product Development on Supply Chain Management

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ABSTRACT
The purpose of this thesis is to explore the impacts and requirements of a consumer-focused new product development on supply chain management. The issue is examined in a large in-depth case study of the Swedish furniture industry, with one wholesaler as the main case company. The case company has changed its business strategy from being product-focused to consumer-focused. The company has started to develop innovative products that are supplied with a postponement strategy. The thesis focuses on how new product development and supply chain management are connected at the case company, and how the new business strategy affects sourcing, manufacturing, inventory, and distribution.

Investigations reveal that the consumer-focused new product development resulted in an imbalance between demand creation and supply chain management. New product development is the key process connecting the two management directions. The new business strategy increased the amount of stock keeping units, which in combination with the decline in economy in 2008 resulted in a bad alignment between the business strategy and the sourcing system. This, in turn, resulted in inefficient inventory management. The new products that were developed have high innovative value, but the value may be lost if the retailers are not able to present the value to the consumers. The distortion of information that reduces the value is illustrated with a value gaps model that also explains the importance of demand creation across the supply chain, in order to fully utilize the potential of the supply chain and new product development. Moreover, a model explaining the outcome of low versus high collaboration with retailers, and obvious versus obscure product value, was constructed, highlighting that consumer perceived value may be lost if the value is obscure and collaboration is low.

The impact of the investigated new product development approach on supply chain management is that the supply chain might lose efficiency and effectiveness if the supply chain capabilities to support the new products are not considered. The main requirement is to acknowledge that the partners in the supply chain play an important role, in order to preserve the innovative value of the products and increase demand creation.

Keywords: consumer-focused business strategy, demand creation, new product development, supply chain management, value gaps
LIST OF APPENDED PAPERS

Paper 1

Paper 2

Paper 3
PREFACE
To say that research is a lonely job is both true and false. Several times during the research I have felt both isolation and despair, as well as inclusion and hope. Needless to say, this thesis would not have been written without the support from colleagues and professionals, family and friends.

Henrik, I could not have asked for a better informant, or a better case company. All the help and time I have received from you have been vital for this research. But most of all, thanks for the night out at Bar Rouge, Shanghai!

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Klas Hjort, thanks for being a great friend and colleague.

Jonas Larsson, the Lemmy Kilmister of colleagues.

Aplared, November 2011

[Signature]
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<th>Description</th>
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<tr>
<td>NPD</td>
<td>New Product Development</td>
</tr>
<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
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**Demand creation**
The design, coordination, planning, improvement, execution, and monitoring of the demand creation processes within a particular company and across the chain of involved entities, in order to understand, create, and stimulate consumer demand as cost-efficiently as possible.

**Display piece**
Showroom example of a product.

**Serving team China**
A company active in China responsible for quality control, contacts with the manufacturers, consolidation of goods, and running booking of transports.

**SCM**
The design, coordination, planning, improvement, execution, and monitoring of the supply processes within a particular company and across the supply chain, in order to fulfill consumer demand as cost-efficiently as possible.
1 INTRODUCTION
The goal of this chapter is to introduce the reader to the thesis. First the background to the research is presented, as well as a brief insight to how the Swedish consumers have increased their purchasing power. The background is followed by a motivation of research. Based on the motivation of research the purpose is presented. Research questions are constructed to guide the research in the quest to fulfill its purpose. The case company and its market environment are introduced. The research scope is then presented to clarify the delimitations of the research. Finally, the remainder of the thesis structure is presented.

1.1 BACKGROUND
A new market environment has evolved the last decades. Christopher et al. (2004) describe this new market as discernible by four defining traits: short product lifecycles, high volatility, low predictability, and high impulse purchasing. Products are designed to appeal to short lived trends, reducing the time during which consumers have demand for the product. The demand is also subject to drastic changes and may be influenced by popular phenomena. The short lifecycle and the volatility in demand inherently lead to low predictability. Finally, the consumer decision to make a purchase is often a spur of the moment, complicating the nature of the market even more, since demand is not only hard to predict, it is of vital importance for product success to have high availability. The nature of the new market environment implies that consumers are sophisticated and demanding, susceptible of subjective product characteristics, and have high buying capabilities.

Three significant market changes are identified: globalization, maturing of markets, and increased domestic and international competition. Reduction of trade barriers has enabled free flow of goods, services, and capital; information technology has evolved to allow communication between purchasing and selling parts on a global level; and transportation infrastructure has been extended to facilitate worldwide operations (Hilletofth et al., 2007). Thus, there is a development towards a global market, where nations are no longer independent entities but parts of a global trade system (Dreher, 2006). In growth markets consumers have little experience of the product, there are few suppliers of the product, and there is a high sell-through rate. Companies in growth markets tend to focus on mass production and low unit cost to maximize their profits. In mature markets, on the other hand, consumers are sophisticated and familiar with the product, there are many suppliers of the product, and there is a high sell-through rate. Companies in growth markets tend to focus on mass production and low unit cost to maximize their profits. In mature markets, on the other hand, consumers are sophisticated and familiar with the product, there are many suppliers of the product, and there is a high sell-through rate. To stay profitable, companies have tried to reduce their costs, with the result that consumers perceive little difference between the competing companies’ value offerings, reducing the brand loyalty and replacing it with brand preference. Thus, products, even highly innovative, are commoditized (Christopher and Peck, 2003). Increased domestic and international competition has reinforced the trend to push for lower prices, but it has also spurred companies to improve the design, function, and quality of their products (Christopher and Peck, 2003).

A retrospective look on the economy of Swedish households reveals that the significant changes in market environments discussed above have occurred during a time, when the households’ ability to consume has increased. The average Swedish consumer’s purchasing power has followed a positive trend since the beginning of the 80s (Figure 1-1) (SCB, 2011). There are several ways in which consumption patterns may alter due to increased purchasing power. Products may be regarded as expendables, which will reduce the time that consumers
use them. IKEA is commonly blamed for introducing a throwaway mentality for furniture in Sweden. Moreover, consumers that are able to spend more money on products and services also have the opportunity to purchase premium and luxury products.

Companies that do not want to compete with commodities have the option to pursue consumers by developing products that offer increased perceived consumer value. There are several opportunities to differentiate the value offerings that extend the scope of the actual product. MacMillan and McGrath (1997) suggest that by mapping the consumption chain, i.e. the consumers’ whole experience with the product from when they first come in contact with it until they dispose of it, several areas for differentiation may be unveiled. The actual mapping of the consumption chain is to ask 15 questions in relation to complex business activities, e.g. how consumers find the value offering, how the value offering is purchased, how the value offering is delivered, and how the value offering is stored. Leonard and Rayport (1997) propose empathic design to identify consumer needs that the consumers are not able to articulate. Empathic design is based on consumer observations in situations, where the consumer does not interact with the actual product.

A product cannot rely on superior design alone. A system for securing raw materials, production, and physical movement is necessary; activities that are encompassed within supply chain management (SCM). One of the key purposes of SCM is to match demand and supply. Products with high innovative value are harder to forecast due to their volatile demand and short lifecycles, and they are dependent on availability. On the other hand, these products generate higher contribution margins than commodities. The choice of supply chain structure is a tradeoff between the risk of forecast error and the cost (including lost sales) of the supply chain activities. Several taxonomies are put forth to guide the choice of supply chain strategy, but a common denominator is that products that are hard to forecast need a supply chain structure that is able to respond to changes in demand, while products that are easy to forecast should be supplied in a cost-efficient manner (Christopher et al., 2004; Fisher, 1997; Mason-Jones et al., 2000A).
The consumer demands are not only restricted to the actual product (Parasuraman et al., 1985) and the same product may be appealing to different consumer segments if the supply chain is differentiated based on consumer segment (Christopher, 1972). The importance of differentiated products and supply chain solutions is well established (Esper et al., 2010; Jüttner et al., 2007), so is the close connection new product development (NPD) and SCM (Carrillo and Franza, 2005; Forza et al., 2005). There is an apparent connection between the nature of the market, NPD, and SCM; and in order to be successful companies need to choose their strategy with great attention and align their activities to support the strategy (Porter, 1996). The key to competitiveness in the new market environment is a profound understanding of consumer needs, rather than the technology of the products (Lee and Whang, 2001; MacMillan and McGrath, 1997).

![Figure 1-2: Supply chain management and demand creation processes](image)

One way to be successful in competitive markets is to develop products based on a profound understanding of consumer needs – consumer insight. This may be done during market intelligence and early stages of NPD, if a company devotes time and efforts to truly understand its current and potential consumers (Kärkkäinen et al., 2001; Van Kleeft et al., 2005). If the company discovers actionable consumer insight, it will undoubtedly have an impact on NPD. NPD includes design where, among other decisions, the choice of material is made (Khan and Creazza, 2009). Companies should also undertake NPD with sourcing capabilities in mind (Van Hoek and Chapman, 2007). The nature of demand needs to be matched with the supply chain, thus sourcing, manufacturing, and distribution are in some sense affected by NPD. If NPD focuses on consumer insight, it also is related to SCM. Besides market intelligence and NPD demand creation also includes branding, as well as marketing and sales (Kotler, 2009). It is proposed that demand creation processes should be coordinated with supply processes at an overreaching level (Canever et al., 2008). The processes are illustrated in Figure 1-2.

### 1.2 Motivation of Research

Matching consumer requirements with the configuration of the supply chain has been emphasized by several researchers (e.g. Bingham, 2004; Walters and Rainbird, 2004). Several authors have presented best practice examples of companies that have been able to match consumer demands with a well adapted supply chain, e.g. Benetton (Dapiran, 1992), Hewlett-Packard (Feitzinger and Lee, 1997), and Seven-Eleven (Lee and Whang, 2001). However, best practice articles are often shallow in the presented data and provide little actual insight to the supply chain processes. Rainbird (2004), on the contrary, uses McDonalds as an example.
of inability to configure the supply chain in accordance to demand. Still, little information is provided about the actual supply chain processes and the mechanisms behind the lack of success.

The importance of understanding consumers when developing new products is also well established (e.g. Simonson, 1993; Van Kleef et al., 2005). Porter (1996) discusses the importance to develop operational activities that support the strategy of the company. Best practice examples are good visualizations of companies that have been able to obtain a sound fit between operational activities and strategy. Companies that fail to realize the importance of aligning activities and strategy face the risk of having their strategy replaced by a quest to increase operational performance and lose sight of their strategic goals. Taxonomies for supply chain configuration may be used by practitioners to understand how to devise a supply strategy. They also constitute a good way for researchers to understand the relation between demand characteristics and supply chain configuration. Based on several sources (e.g. Dapiran, 1992; Feitzinger and Lee, 1997; Harlé et al., 2002), it can be concluded that insight to how supply chain processes are related is limited. It is well established that NPD and SCM are intertwined (e.g. Forza et al., 2005; Khan and Creazza, 2009), but the relation between a consumer-focused NPD process and SCM lacks in-depth research. Companies that invest capabilities in their NPD process are likely to discover new product opportunities, and this will surely have an impact on sourcing, manufacturing, and inventory management. Moreover, if the products are developed with high innovative value, it may impose certain demands on the collaboration in the supply chain to retain the innovative value, until the product is in the hands of the consumer.

This research is devoted to understanding the impacts of the choice to pursue a consumer-focused business strategy centered on market intelligence and NPD. The research combines supply chain taxonomy, consumer-focused NPD, and the importance to align activities to support the strategy, in order to penetrate one case with great depth. By focusing on one case, this research strives to provide a deep understanding of how supply chain processes are interrelated with the studied business strategy. During the research it has become evident that the furniture industry has some special characteristics, which makes it interesting to investigate. Firstly, distributors and retailers agree that consumers are not aware of the wholesalers’ brands, but consider the retailer as the brand. The notion has been confirmed during numerous lectures, workshops, seminars, and discussions during the research, when the question has been asked: “can you name any brands in the furniture industry?” Secondly, the relationship between retailers and wholesalers is different to several industries, based on that retailers invest in display pieces and do not carry inventory in the store, and that the wholesalers are responsible for inventory management.
1.3 Purpose
This research aims to explore how a change in business strategy is related to SCM. More precisely it focuses on how a change from product-focused to consumer-focused business strategy has impacted, and what requirements it has had, on SCM. The change in business strategy is centered on a new approach to NPD. The purpose is formulated as follows:

“To explore the impacts and requirements of a consumer-focused NPD on SCM.”

A change from product-focused to consumer-focused NPD, where added perceived consumer value is sought after, is likely to have an impact on sourcing, manufacturing, inventory, and distribution, which is the investigated phenomenon at the heart of this research. Bingham (2004) describes the most demand creation driven organization as an organization, where all activities strive to release consumers of pain, i.e. fulfilling implicit or explicit consumer demands and needs. This research focuses on a business strategy, where consumer insight is the starting point for all demand creation efforts and how these efforts impact SCM. Hence, the research is designated to increase the knowledge of a consumer-focused business strategy. Since demand creation and supply chain management combine several key business processes this research needs to combine established fields of research in order to create new knowledge. Moreover, the research will provide a new insight to how NPD and SCM should be managed to fit a consumer-focused business strategy.

This research is aimed to contribute to both professionals and researchers. For professionals the research strives to give insights to what impact a consumer-focused business strategy may have on business performance in supply chain processes. The contribution to researchers will be the analysis of a business strategy, i.e. how demand creation is related to SCM, by focusing on the connection between NPD and SCM, and to highlight how consumer insight is related to SCM.

1.4 Research Questions
The choice of business strategy will inevitably have an impact on internal and external business processes. The main research focus is to investigate the impact on supply chain processes at a Swedish furniture wholesaler, who has chosen to develop a consumer-focused business strategy centered on NPD. The principle research question (PRQ) may be formulated:

PRQ: What are the impacts and requirements of a consumer-focused NPD on SCM?

The research aims to separate different supply chain activities to independently investigate how they are affected by a consumer-focused business strategy. The first focus area will be consumer driven NPD and how it affects the supply chain. NPD is the main process where the case company transforms consumer insight to products. Thus, NPD is an appropriate starting point for investigation. Research question one is derived from the connection between demand creation and SCM.

RQ1: How are NPD and SCM connected in a company with a consumer-focused business strategy?
Following an investigation of the relationship between NPD and SCM the supply chain will be split into two parts: upstream of the case company and inventory, and downstream. Each part will be thoroughly investigated to find out, in detail, how they are affected by the consumer-focused business strategy. While investigating the management upstream and inventory it is important to understand how the change in business strategy is related to manufacturing, sourcing, and inventory. Taxonomies for matching supply chain with products have been proposed (e.g. Christopher, 2000; Fisher, 1997). The second research question strives to investigate how a consumer-focused business strategy affects manufacturing, sourcing, and inventory, and thus investigate the relation between supply chain and products following a change in strategy in the furniture industry. Moreover, it includes how production capabilities are related to the products generated with the new business strategy.

RQ2: How does a consumer-focused business strategy affect sourcing and inventory?

One of the main purposes with the case company’s new business strategy is to increase consumer perceived value. Value creation is at heart of its NPD, but the case company has neither formal influence over the presentation of the products at the retailers, nor the interactions with potential consumers. It is common to form alliances and partnerships with some supply chain actors, while some supply chain actors are only included in an arms length relationship. It is important to investigate if and how the supply chain relations are connected to the consumer-perceived value of the products.

RQ3: How do retailers affect the value creation for a wholesaler who develops products with high innovative value?

The questions aggregate to a rich description of a consumer-focused supply chain. In the thesis the results from the individual papers will be combined to answer the principle research question. All questions are answered with the same single-case study. The research questions in the papers are not the same as in the thesis, but slightly modified to better fit when analyzed jointly.

1.5 CASE COMPANY ALPHA

The case company, called Alpha for anonymity, is a family-owned small-size Swedish furniture wholesaler. The company’s headquarters and distribution center are located in the same facility close to Gothenburg. Historically the company has had a product- and production-focused strategy, striving to maximize sales volumes and minimize costs. In order to escape fierce competition and decreasing contribution margins the management took a strategic decision in 2004 to change business strategy. The new business strategy is centered on understanding consumers and developing products that offer superior consumer-perceived value. At the heart of NPD is consumer insight, described by the founder of the case company as a profound understanding of implicit and explicit consumer needs.

The case company describes its organizational structure as a creative borderless organization, i.e. an organization where external entities are considered vital and a part of the own organization. In the NPD process this is illustrated by the use of external agents, who gather consumer insight, and freelancing designers. The agents that gather consumer insight visit and photo-document the homes of potential consumers. Findings are compiled and presented to Alpha and the designers who use the findings to design new furniture. Among the new ideas generated using this method are media furniture with ventilation holes, a new series of hall
furniture, and multipurpose furniture, e.g. a bed end casket with compartments for dirty laundry.

Furniture is produced by independent manufacturers. Currently fifteen manufacturers in China are used. To bridge geographical and cultural distances Alpha collaborates with a serving team in China. The serving team is responsible for quality control, contacts with the manufacturers, consolidation of goods, and running booking of transports. Thus, the serving team is involved in both manufacturing and sourcing. Containers are shipped by sea from five ports in China to the port of Gothenburg. Since the products have a low volume value, it is important to ship full containers. From Gothenburg the containers are transported on road to Alpha’s warehouse. About 4 percent of the containers shipped from China are delivered directly from the port of Gothenburg to the customers (Figure 1-3).

The downstream side of the supply chain consists of about 400 retailers. The majority of the retailers (i.e. customers) are located in Sweden, which is the most important market. Finland
and Norway are the following two most important markets. The retailer’s order process is initiated when a consumer makes a purchase at the retailer. Products from Alpha may be ordered online, on telephone, or by using fax. Alpha’s distribution center processes orders from different retailers at assigned days every week. Almost all furniture is shipped to the retailer using a third-party logistics provider, but a few retailers pick up furniture at Alpha’s distribution center (Figure 1-4).

![Figure 1-4: Alpha's materials and information flows](image)

The case company is involved with all four demand creation processes mentioned earlier. Even though all four are important the focus during the research has been market intelligence and NPD. The generic SCM processes also need modification to better describe this specific case. Manufacturing is for all practical matters enclosed within sourcing, and inventory management is an important part of the case company’s supply chain. The investigated processes are illustrated in Figure 1-5, which also highlights that the effect of market intelligence and NPD on SCM is at heart of how a consumer-focused business strategy is investigated in this research.

![Figure 1-5: Supply chain management and demand creation, adapted for Alpha](image)

It is possible to identify common goals of wholesalers and retailers in the furniture industry. Of course, both want to maximize their profit, but they have different views on how to do so. Wholesalers focus on the number of display pieces, since it is believed that the number of display pieces is the most important performance measure to monitor in order to maximize sales. Salesmen representing wholesalers often get commissions based on their ability to sell...
display pieces to the retailers. Retailers, on the other hand, are mainly concerned about the display pieces’ ability to generate sales. Wholesalers take the risk of tying up capital in inventory, but a retailer is likely to tie up an equal amount of capital in display pieces. When a display piece is sold, there is low probability that the retailer recovers the purchasing cost of the display piece, as consumers demand reduced price for furniture that has been used at the retailer. Alpha has involved the retailers in the forecasting system. Each time a salesman from Alpha visits a retailer he or she brings a list of all the display pieces. The salesman is supposed to fill in an estimated one-year forecast of all display pieces in joint effort with a representative from the retailer. The total forecast is revised every month internally at Alpha and shared with the manufacturers once every third month.

1.6 RESEARCH SCOPE
As mentioned earlier there are four SCM processes of interest for this research: sourcing, manufacturing, inventory, and distribution. Even though upstream and downstream processes are words often used to distinguish between materials flows to and from a focal company, the use of sourcing, manufacturing, inventory, and distribution reduces the risk of confusion and explains more clearly what process is discussed. The studied phenomenon is the effect of a consumer-focused business strategy on SCM i.e. how the NPD impacts sourcing, manufacturing, inventory, and distribution and what requirements NPD has on those processes.

At the heart of the consumer-focused business strategy is market intelligence with consumer insight and NPD. Two demand creation processes that have the potential to affect supply chain processes. The phenomenon is investigated using a single-case study. This research could have investigated how the choice of business strategy is connected to a specific part of SCM, e.g. sourcing or distribution. Due to the close connection between SCM processes it was not possible to understand the impact of a consumer-focused business strategy without investigating the business strategy in relation to several SCM processes. Moreover, if the scope is restricted to one SCM process there is a risk that the theoretical and practical implications of the research will lead to suboptimization of SCM processes.

1.7 THESIS OUTLINE
Chapter 1, Introduction, outlines why the research is important, the purpose of the research, and the empirical setting in which the research is conducted. In chapter 2, Frame of Reference, the theories used to investigate the case are presented, as well as the research questions’ relation to the theory. Theories used are related to demand creation and SCM. The research process is outlined in chapter 3, Research Approach. Much emphasis has been placed on explaining the actual data collection. Chapter 4, Summary of the Appended Papers, presents the most important findings, with regards to the thesis, from the appended papers. The findings are analyzed in chapter 5, Analysis. The purpose of the chapter is to break down the findings and scrutinize them using the frame of reference. Moreover, the research questions are answered. In chapter 6, Discussion, the research, and its thrustworthiness and implications, are addressed. Finally, in chapter 7, Conclusion, the contributions of the research are presented. Further, as this licentiate thesis is the seed for a future PhD thesis, future research venues are proposed.
2 FRAME OF REFERENCE

In the previous chapter the reader was introduced to the thesis. The goal of this chapter is to present the theories used during the research and their relation to the research questions. The chapter will present how the framework was constructed. Since the research focuses on how a business strategy impacts SCM the frame of reference will firstly present theories regarding the business strategy, followed by theories on SCM, and finally theories on how business strategy and SCM should be managed. Illustrating how the research questions are related to the frame of reference concludes the chapter.

2.1 CONSTRUCTION OF THE FRAMEWORK

As companies try to develop products based on consumer needs consumer insight affects NPD, which in turn affects SCM processes. It has been important to understand the studied system in order to determine what kind of theoretical framework that is required to carry out the research. There has been reciprocation between the frame of reference, the empirical world, the case, and theory. Hence, the frame of reference has been both a tool for the research and is a product of the research.

Within the field of research several definitions for the studied activities are available. In this dissertation the two main concepts used are referred to as SCM and demand creation. Jüttner et al. (2007) distinguish between marketing and SCM stating that the primary objective of marketing is to increase revenue, that the primary objective of SCM is to be cost efficient, and that increased profitability is the overreaching goal. Both marketing and SCM have the potential to contribute to increased consumer value. Marketing alone, however, does not expressly comprise all activities devoted to increase revenue whereas demand creation is used as a broader definition of activities devoted to understand, increase, and stimulate consumer demand. The following definition of demand creation has been used:

\[\text{The design, coordination, planning, improvement, execution, and monitoring of the demand creation processes within a particular company and across the chain of involved entities in order to understand, create, and stimulate consumer demand as cost efficiently as possible (Jüttner et al., 2007; Rainbird, 2004; Walters, 2008)}\]

Defining SCM is not a straightforward task as exemplified by Bechtel and Jayaram (1997) who identified more than 50 descriptions of SCM. The definition provided by Gibson et al. (2005) that includes the management of sourcing, procurement, conversion, and all logistics management activities in coordination and collaboration with the channel partners has been adopted for this thesis. The following definition of SCM has been used:

\[\text{The design, coordination, planning, improvement, execution, and monitoring of the supply processes within a particular company and across the supply chain in order to fulfill consumer demand as cost efficiently as possible (Gibson et al., 2005; Lummus and Vokurka, 1999; Mentzer et al., 2001)}\]

Several authors have also stressed the need to consider both demand creation and SCM simultaneously (e.g. Bingham, 2004; Jüttner et al., 2007; Rainbird 2004). These concepts have not explicatively been used in this thesis, but some of their main ideas are discussed and
used. Demand creation is distinguished from value creation, as value is subject to both demand creation and SCM processes. In the first two appended papers demand creation is referred to as demand chain management and macro-coordination of SCM and demand chain management is referred to as demand-supply chain management (Hilletofth, 2011). Writing the thesis and paper 3, however, it was decided to use terms and definitions that are more well known. As the research focus on the effects of a consumer-focused business strategy the explanations of the framework will start with demand creation.

2.2 Demand Creation
Demand creation is a management direction responsible for the processes necessary to understand, create, and stimulate consumer demand (Charlebois, 2008; Jüttner et al., 2007; Walters and Rainbird, 2004). Key demand creation processes are market intelligence, NPD, branding, and marketing and sales (Hilletofth, 2011). Demand creation spans over a network of several stakeholders that may be autonomous or dependent involved in the processes devoted to respond to consumer demand through value creation (Esper et al., 2010; Jüttner et al., 2007; Rainbird, 2004). The pinnacle of demand creation is a revenue level that allows the involved companies to be profitable in the long run (Gummesson, 2007).

Managing demand creation is mostly connected to the ability to create superior consumer value, but it can also help to create a cost advantage if the demand creation processes are managed cost-efficiently (Jüttner et al., 2007). Moreover, NPD has a profound impact on sourcing and manufacturing, and if NPD is conducted with regards to supply chain design economic benefits may be gained. Dapiran (1992) explains how Benetton was able to provide consumers with a plethora of color options, while still managing inventories in a cost-efficient manner and Feitzinger and Lee (1997) present how Hewlett-Packard was able to use modular design to increase cost efficiency. Kärkkäinen et al. (2001) argue that strategic planning, customer need assessment process (i.e. market intelligence), and product development process (i.e. NPD) are closely linked.

2.2.1 Market Intelligence
Market intelligence involves the activities necessary to collect, analyze, and report data and findings regarding a specific market situation, problem, or opportunity (Stone et al., 2004). Knowledge about the market situation plays an important role for companies when devising their demand creation strategy, during NPD, for branding, and for marketing and sales (Kotler et al., 2009). Several researchers, however, oppose the traditional techniques to obtain consumer data since consumers are not able to express their needs or do not realize them (Florin et al., 2007; Leonard and Rayport, 1997). Instead, companies must strive to gather consumer insight.

The need to understand consumers is sometimes implicitly expressed when defining the goals of SCM: to distribute the right goods, in the right quantity, to the right location, at the right time (Gibson et al., 2005); a task containing four “rights” that may be different for each potential consumer. If a company understands what is right for each consumer segment distribution services may be tailored to might make the same product attractive to more consumers (Christopher, 1972). Since service and products are so closely intertwined, consumer insight is necessary when developing products, delivery methods, and services. Parasuraman et al. (1985) present a model for measuring service quality (Figure 2-1). Even though the model is created to measure service quality, it addresses issues that are of concern with products and as stated above: the connection between services and products is important.
Quality of service and value offerings addresses characteristics such as intangibility, heterogeneity, and inseparability (Parasuraman et al., 1985). As such it cannot be counted, measured, or tested prior to the delivery of the service. One way of evaluating the value offering quality is by measuring the gap between the consumer perceived value and the consumer expected value (Parasuraman et al., 1985). The gap between expected value and perception of consumer expectations is due to managers’ inability to understand the true consumer needs. The gap between perception of consumer expectations and specifications can stem from resource and market constraints and also lack of management commitment. The gap between specifications and delivered value is subject to the pivotal role of employees. The gap between delivered value and communicated value is affected by advertising and promises made to consumers. Finally, the gap between perceived value and expected value determines if the offering is satisfactory for the consumer. For the offering to be satisfactory, the perceived value must be higher than the expected value, and different consumers may have different expected and perceived value on the same value offering (Parasuraman et al., 1985). It was proposed that the gap between expected service and perceived service is the sum of all the other gaps (Parasuraman et al., 1985, p. 46). However, the proposition was not as strongly supported as anticipated by data, which might be due to the complexity in the model (Parasuraman et al., 1991). Measuring the perceived value requires a profound insight to the consumers’ perception of the product or service. Florin et al. (2007) define consumer insight as an attempt to look beyond the immediately obvious and state that companies should strive to offer the right value to the right consumer, which in essence is to decrease the gap between consumer expected value and the perception of the delivered value.

2.2.2 NEW PRODUCT DEVELOPMENT
NPD includes all the activities necessary to bring a new or modified product to the market (Cooper et al., 2004; Rogers et al., 2004) and should be conducted in a cost-efficient and time-efficient manner (Kotler et al., 2009). There are various ways to manage the organizational aspects of NPD, e.g. assign responsibilities to product managers, senior management, cross-functional teams, or NPD departments (Sethi et al., 2001). Successful companies tend to develop a holistic NPD process, based on a stage-gate system (Cooper, 1990). A stage-gate process divides NPD into a process based on several stages, where the end of each stage is a gate or a checkpoint (Kotler et al., 2009).
Several authors express the need to understand implicit and explicit consumer needs during NPD (e.g. Cooper, 1988; Lee and Whang, 2001; Simonson, 1993; Van Kleef et al., 2005). One of the objectives during early stages of NPD is to search for new consumer opportunities and areas for differentiation. In order to succeed with this it is of the utmost importance to have a profound understanding of the voice of the consumer (Kärkkäinen et al., 2001; Simonson, 1993; Van Kleef et al., 2005). Understanding the true demand requires comprehensive knowledge about the consumers (Lee and Whang, 2001), but the value gaps, especially between expected and perceived value, presented by Parasuraman et al. (1985) pose a problem.

MacMillan and McGrath (1997) suggest that the consumption chain, i.e. the consumer’s whole experience with the product, should be mapped to identify areas of differentiation. By asking questions such as: “how is your product or service delivered?”, “how is your product installed?”, and “how is your product stored?”, a company may get better understanding of the actual usage of the product and thus get input to NPD. Leonard and Rayport (1997) suggest that empathic design should be used in the early stages of NPD to discover differentiation opportunities based on needs that the consumer is unable to express, or that are otherwise hard to discover. Empathic design is based on observing the consumer in an everyday setting without stimuli from any product. Moreover, they suggest that observations may be used to discover what triggers use of the product, how the product interacts with the consumer’s environment, how users customize the product, intangible attributes of the product, and unarticulated consumer needs.

2.3 Supply Chain Management
SCM is the management direction responsible for the processes necessary to fulfill consumer demand (Gibson et al., 2005; Lummus and Vokurka, 1999; Mentzer et al., 2001). Activities managed include, but are not limited to, raw material extraction, transformation of material into products, and physical movement from the source to the point of consumption and possibly in return. A supply chain may be described as a network of autonomous or dependent entities involved in the supply processes devoted to fulfill consumer demand through value delivery (Gibson et al., 2005; Lummus and Vokurka, 1999; Mentzer et al., 2001). SCM needs to be linked to the business strategy in order to be effective (Chopra and Meindl, 2010; Harrison and Van Hoek, 2005). The pinnacle of SCM is a cost base and service level that allow the supply chain to be profitable in the long run (Mentzer et al., 2001).

SCM is mostly connected to the ability to create a cost advantage, but it can also help to create a value advantage, if the SCM processes are reliable, responsive, differentiated, and innovative (Jüttner et al., 2007). SCM may have a profound impact on NPD success if it supports sourcing of raw materials and components and distribution of the developed products (Van Hoek and Chapman, 2006). In relation to the examples given in section 2.2 it could be argued that the supply chain allows Benetton to provide its consumers with a plethora of color options and Hewlett-Packard to increase cost efficiency, and that SCM is closely intertwined with market intelligence and NPD.

Recent decades have been subject to increased globalization enabled by reduction of trade barriers, increased ICT support, and global transportation infrastructure. As supply chains become global, their complexity increases, and actors in the chain become disconnected (Cavinato, 2004). The disconnect is not only a result of increased geographical distances but also increased cultural distances, which complicates collaboration (Lowson, 2001; Lowson,
2003; Warburton and Stratton, 2002). One response has been an increased interest in global SCM (Gargeya and Meixell, 2005).

The research focusing on global SCM may be divided into three main groups: strategic alignment of the supply chain, coordination of the players operating in the global supply chain, and design of the global logistics network (Creazza et al., 2010). Strategic alignment includes issues such as facility location and vertical integration. The distance between manufacturing facilities and the place of consumption relates to the supply chains’ ability to respond to fluctuations in demand (Miemczyk and Howard, 2008). Coordination of the players operating in the global supply chain addresses that global supply chains are more complex than local supply chains. Differences in cultures, languages, and practices decrease the efficiency of forecasting and planning processes. Design of global logistics networks includes considerations such as infrastructure and transport mode (Creazza et al., 2010). One transportation mode is container shipping, which can be performed in two ways: either with full container load, or less than container load. To increase efficiency in ocean shipping shipments may be cross docked at consolidation hubs to ensure high load utilization of containers (Cheong et al., 2007).

2.3.1 Supply Chain Strategy

Supply chain strategy is a research topic that has received tremendous attention from scholars during the 20th century (e.g. Alderson, 1950; Fisher, 1997; Selldin and Olhager, 2007; Shaw, 1912). The research has focused on matching characteristics of e.g. markets, demand, products, and consumers to identify the best strategy. One common area of debate has been the choice between lean (Womack and Jones, 1996) and agile (Goldman et al., 1995) supply chains. Lean supply chains are primarily focused on cost efficiency and the reduction of waste (Christopher, 2000; Ohno, 1988), while agile supply chains are primarily focused on the ability to adjust according to unpredictable changes in demand (Christopher and Towill, 2001; De Treville et al., 2004; Naylor et al., 1999).

Despite the differences in strategy lean and agile paradigms should not be seen as antagonists, rather two paths to meet consumer demand with the lowest possible total cost (Goldsby et al., 2006) with different approaches (Goldsby and García-Dastugue, 2003). The later is highlighted by a vast research body devoted to mixed, so-called leagile, strategies (e.g. Bucklin, 1965; Childerhouse and Towill, 2000; Mistry, 2005). A leagile strategy is a way to minimize costs without compromising the value offering. Thus, it is a quest for effectiveness, and operational efficiency. Christopher and Towill (2001) present three leagile strategies that are not mutually exclusive, but appropriate in certain conditions. The first leagile strategy is based on the approximation that 80 percent of the revenue is generated by 20 percent of the products, i.e. the Pareto Rule. The 20 percent of the products with the highest revenue should be managed according to lean principles, and the remaining 80 percent with agile principles (Goldsby et al., 2006). The second leagile strategy is founded on the notion that the demand may be divided into base demand and surge demand. Base demand should be managed according to lean principles and surge demand according to agile principles (Goldsby et al., 2006).

The third leagile strategy is based on the principles of postponement, i.e. the separation of processes at a decoupling point, so that final configuration is done as late as possible, when the true demand is easier to predict or known (Alderson, 1950; Bucklin, 1965). Further, the decoupling points can be used to shorten the leadtime, when the time to convert the product from raw material until it is in the hands of the consumer is longer than the time the consumer is prepared to wait for the product (Olhager, 2003). Activities prior to the decoupling point
should be managed according to lean principles, and activities after the decoupling point should be managed according to agile principles. Christopher et al. (2006) suggest a fourth leagile strategy based on separating products, so that products with unpredictable demand are managed in an agile manner, and products with predictable demand are managed in a lean manner.

2.3.2 TAXONOMIES FOR SUPPLY CHAIN STRATEGY SELECTION

As with supply chain strategy, taxonomies for supply chain strategy selection have also received a lot of attention from scholars. Maybe the most well known is the model proposed by Fisher (1997). Products are classified as functional or innovative, based on seven aspects of demand: product lifecycle, contribution margin, product variety, forecast error, stockout rate, forced end-of-season markdown, and leadtime requirement for products made to order. Innovative products have short lifecycles, high contribution margins, high product variety, high forecast error, high stockout rate, high amount of forced end-of-season markdown, and short leadtime requirement, when they are made to order. Supply chains are classified as efficient (lean) and market responsive (agile). The primary purpose of the lean supply chain is to “supply predictable demand efficiently at the lowest possible cost”, and the primary purpose of the agile supply chain is to “respond quickly to unpredictable demand in order to minimize stockouts, forced markdowns, and obsolete inventory” (ibid, p. 108). Functional products are best matched with the lean supply chain and innovative products are best matched with the agile supply chain.

Christopher (2000) presented a model similar to Fisher’s. Christopher, however, suggests that three dimensions of demand: variety, variability (or predictability), and volume should determine the selection between agile and lean supply chain strategy. If variety/variability is high and the volume is low, an agile approach is suitable, and if variety/variability is low and the volume is high, a lean approach is suitable. Further, decoupling points may be used to create a hybrid strategy to decrease inventories, reduce the number of components and implement modular design to decrease components and keep a high number of consumer available configurations, and to simplify forecasting. Activities prior to the decoupling point are driven by forecast, and the activities following the decoupling point are driven by demand.

One progression of earlier taxonomies is provided by Christopher et al. (2006), who propose that replenishment leadtimes should be included. Replenishment leadtimes have an impact on responsiveness, which is more important as globalization tends to prolong leadtimes. A three-dimensional classification is suggested, based on products, demand, and replenishment leadtimes. Products may be either standard or special, demand may be stable or volatile, and replenishment leadtimes may be short or long. A product is special if the volume is low and the demand is erratic, if the lifecycle is short, or if it has a high level of customization. A product is standard if it has stable demand, longer lifecycle, and no or limited customization. Because predictability and product type are likely to be related, the taxonomy may be simplified to only two dimensions: supply and demand characteristics. Short leadtimes and predictable demand should be managed with continuous replenishment, according to lean principles; short leadtimes and unpredictable demand should be managed with quick response, according to agile principles; long leadtimes and predictable demand should be planned and executed, according to lean principles; and long leadtimes and unpredictable demand should be managed with postponement and leagile techniques.

Mason-Jones et al. (2000B) state that supply chains must implement a strategy that is appropriate considering the product and the marketplace. Based on Fisher’s (1997) taxonomy Mason-Jones et al. make a case to consider market qualifiers and market winners. The market
winner for fashion products is service level and for commodities price. The market qualifiers for fashion products are quality, price, and leadtime; and for commodities quality, leadtime, and service level. The authors state that agile principles correspond well to the market qualifiers and winners of fashion products, and that lean principles correspond well to the market qualifiers and winners of commodities.

The essence of the taxonomies may be boiled down to the principles that uncertainty should be managed with agile principles, lean principles are appropriate when there is low uncertainty, and that the supply chain should be configured to increase revenue and minimize costs. Lean supply chains are likely to be more cost efficient, but the focus should not be on internal efficiency, rather effectiveness. The taxonomies provide insight to product, demand, and market traits that are likely to cause uncertainty and suggest a supply chain strategy that is likely to minimize the total cost and maximize the revenue.

2.4 MACRO-COORDINATED MANAGEMENT OF DEMAND CREATION AND THE SUPPLY CHAIN

Even though mentioned earlier it is important to highlight that three statements are vital for the future discussion of the framework: strategy, market intelligence, and NPD are connected; strategy and SCM are connected; and SCM, market intelligence, and NPD are connected. Furthermore, it is important to align and create a fit between activities and the overall strategies and goals of the company (Figure 2-2) (Porter, 1996). However, market intelligence and NPD are usually assigned to marketing departments (e.g. Kotler et al., 2009), while SCM is usually assigned to a logistics department (e.g. Mentzer et al., 2001), despite the need to consider the management of both these management directions simultaneously.

![Diagram of demand creation and supply chain management](image)

It is established that companies are involved with both demand creation and a supply chain which require attention to maximize effectiveness and efficiency (Canever et al., 2008; Jüttnner et al., 2007; Walters, 2008). The notions that management of demand creation and the supply chain needs to be aligned and both management directions require equal attention in order to maximize profit levels are well recognized (Jacobs, 2006; Rainbird, 2004). First and foremost, equal attention suggests that no management direction should be overlooked when devising management strategies to avoid suboptimizations. Despite this there is a tendency to deal with
demand creation and SCM separately and give one priority over the other. Hence, in most industries it is possible to distinguish demand creation-led and supply-led business strategies (Lee, 2001; Jüttner et al., 2007; Piercy, 2002). Companies with a strong demand creation-led business strategy may become demand creation masters who emphasize demand creation as the path to competitive advantage based on superior consumer value, while companies with a strong supply-led business strategy may become supply chain masters who emphasize SCM as the path to competitive advantage based on cost (Walters, 2008).

Either business strategy may be appropriate, depending on market characteristics (Christopher et al., 2006) and how the company has decided to try and obtain competitive advantage (Hilletofth and Hilmola, 2008). There is, however, a risk that a too narrow focus on either business strategy may lead to major difficulties (Walters, 2006). A demand creation strength that is not coordinated with the supply chain may result in a high cost base and inefficient product delivery, while a supply chain strength that is not coordinated with demand creation may result in inefficient NPD, poor product segmentation, and inefficient product delivery (Jüttner et al., 2007). It may therefore be argued that coordination between demand creation and SCM is vital in all market landscapes and for all strategies towards competitive advantage (Lee, 2001; Piercy, 2002; Sheth et al., 2000).

Suggestions on how to devise a demand creation- and supply chain-oriented business strategy have been made. It is suggested that the coordination between demand creation and supply processes should be assigned to either demand creation or SCM (e.g., Mentzer et al., 2001; Srivastava et al., 1999; Williams et al., 2002) or that demand creation and SCM should focus on their area of expertise and that coordination should be on a macro level (e.g., Canever et al., 2008; Hilletofth et al., 2009; Jüttner et al., 2007; Rainbird, 2004; Walters, 2008). The goal of macro-management of demand creation and SCM is to gain a competitive advantage, by providing superior consumer value with cost-minimized processes by organizing the company around understanding how consumer demand is created (demand creation), how consumer value is delivered (SCM), and how the management directions should be coordinated (Hilletofth et al., 2009). The pinnacle is to provide superior consumer value as cost-efficiently as possible (Jüttner et al., 2007; Walters and Rainbird, 2004). Competitive advantage is achieved by performing the correct activities the correct way, i.e. provide consumer-oriented value offerings that increase revenue and manage the demand creation and supply chain cost efficiently. This requires that the firm is organized to understand how consumer value is created and delivered cost-efficiently, and how the management directions should be coordinated (Hilletofth, 2011). Managing demand creation and SCM may be separated into three management levels: long-term decisions and structure of the chain (design or strategic level), medium-term decisions on how to plan the chain (planning or tactical level), and short-term decisions on how to manage the chain on a daily basis (execution or operational level). Hence, the coordination may be intra- or inter-organizational and at different levels.

The parts of macro-coordinated demand creation and SCM commonly discussed are market orientation and how to tackle the demand creation and supply chain processes. Market orientation means that the organization and its partners should be consumer-focused and strive to create and deliver superior consumer value as cost-efficiently as possible (De Treville et al., 2004; Heikkilä, 2002). To achieve this, the company must be organized around understanding how consumer value is created and delivered cost-efficiently and how the creation and delivery processes should be coordinated (Canever et al., 2008; Esper et al., 2010; Jüttner et al., 2007; Walters and Rainbird, 2004). A prerequisite is that the company views the demand creation and supply processes as equally important and manages the
processes in a coordinated manner (Jacobs, 2006; Langabeer and Rose, 2002; Rainbird, 2004; Walters, 2008). Moreover, since the value offering consists of products and services, value creation in both demand creation and supply chain processes must be considered (e.g. Vollmann and Cordon, 1998; Walters, 2008). In order to create superior consumer value differentiation of products and supply chain solutions is of importance (e.g. Esper et al., 2010; Jüttner et al., 2007). Innovativeness and responsiveness constitute two of the most important opportunities for differentiation (Canever et al., 2008; De Treville et al., 2004; Selen and Soliman, 2002).

There are several potential benefits from successful coordination of demand creation and SCM. Three of them are competitiveness, demand creation performance, and supply chain performance. Competitiveness is increased with the ability to provide superior consumer value at a lower cost, which may be achieved by simultaneously focusing on value creation, differentiation, innovativeness, responsiveness, and cost efficiency in demand creation and supply chain processes in a coordinated manner (Rainbird, 2004; Walters, 2008). Demand creation performance is increased through innovativeness, responsiveness, and cost efficiency in NPD; better management of the product range and lifecycles, increased brand loyalty, effective marketing, and cost reduction in demand creation activities (Rainbird, 2004; Walters, 2008). Supply chain performance is increased through increased responsiveness, differentiation, and cost-efficient product delivery, flexible operating structure, reduced inventories, fewer stockouts, less obsolete products, improved consumer service, and reduced costs in the supply chain (e.g. Childerhouse et al., 2002; De Treville et al., 2004; Langabeer and Rose, 2002).

Four requirements of macro management discussed in the literature are organizational competences, company-established principles, demand creation and supply chain collaboration, and information technology support (e.g. Canever et al., 2008; Frohlich and Westbrook, 2002; Jüttner et al., 2007; Selen and Soliman, 2002; Walters and Rainbird, 2004). Amongst the required organizational competences are market orientation, advanced market intelligence and segmentation, and excellence in and coordination between the demand and supply processes (Jüttner et al., 2007; Walters and Rainbird, 2004). Company-established principles mean that the demand creation and supply chain focused approach needs to be embedded into the organization, e.g. coordinating demand creation and SCM and viewing them as equally important (Canever et al., 2008; Esper et al., 2010; Jacobs, 2006). It is necessary that the senior management supports this view and that demand creation and supply chain strategies conforms to the overall business strategy (e.g. Esper et al., 2010; Jüttner et al., 2007; Langabeer and Rose, 2002). Demand creation-supply chain collaboration includes that the actors involved with demand creation and the supply chain share information, which calls for trust, loyalty and relationship management (Charlebois, 2008; Frohlich and Westbrook, 2002; Williams et al., 2002). Information technology is a prerequisite to manage both individual demand creation and supply chain processes, and coordination between them (e.g. Selen and Soliman, 2002; Walters, 2008).
2.5 RESEARCH QUESTIONS AND THE FRAMEWORK
As the framework is thoroughly described it is now possible to identify how the research questions are related to the framework. Research question 1 investigates how NPD and SCM are connected in a company with a consumer-focused business strategy. Research question 2 is focused on how a consumer-focused strategy affects sourcing and inventory. Research question 3 is devoted to understand how retailers affect value creation for a wholesaler with a consumer-focused business strategy (Figure 2-3).

The research questions are closely connected to how a consumer-focused business strategy affects SCM and processes within SCM. The research questions are constructed in accordance with how they formulated; the research first attempted to grasp the big picture and then got more specific on upstream/downstream impacts and requirements.
3 RESEARCH APPROACH

In the previous chapter the theories used during the research and their relation to the research questions were presented. The goal of this chapter is to explain the reasoning behind the used research approach to give an insight to how the research was conducted and present the timeline of the research and the connection between the appended papers. Much emphasis has been placed on presenting the research journey, as it allows the reader to determine if the research is trustworthy.

3.1 REASONING BEHIND THE RESEARCH APPROACH

Researchers are able to put forth explanations and models of the reality, but are they really describing reality or just the researchers conceptualization of the reality – and does it really matter? The meta-methodological assumptions are based on critical realism. One key part of critical realism is the distinction between three domains: the real, the actual, and the empirical (Bhaskar, 1978). The empirical domain consists of observable experiences. There are also actual events, which could be included into the empirical domain depending on the progress of the research. The actual domain is created by mechanisms that generate events. By studying empirical data and expanding it with more information from the actual domain it is possible to draw conclusions about the mechanisms that create events in the real world (Danemark et al., 2003). As the empirical field is expanded, it has impacted the used framework, theories, and the definition of the case. This is the reason for the statement in Chapter 2, that the used framework has been both a tool for the research and is a result of the research. This approach is central for systematic combining (Dubois and Gadde, 2002), which is at the heart of abductive reasoning (Kovacs and Spens, 2005). Abductive reasoning is a continuous back and forth process between the empirical and theoretical research.

In compliance with abductive reasoning it has been the goal of this research is to penetrate the empirical data and allow it to grow when needed so that the final findings making conclusions about generative mechanisms are valid. One focus has been to reduce bias as much as possible so that the discrepancy between the conceptualization of reality and the reality is sufficiently small to provide valid findings. In the articles the focus is on validity, reliability, and replicability, but in the thesis the focus in on presenting the research in such a way that it is made trustworthy. The reason for the dual approach is that the standard criteria proposed by Yin (2008) are commonly used in articles. The thesis, however, is not reviewed the same way as an article and has more space for elaborating the research process, which is necessary for trustworthiness. The trustworthiness of the research will be discussed at the end of the thesis, when the reader is able to assess it. Thus it is important to thoroughly explain the path taken during the research.

3.2 CASE STUDIES

One issue with case studies is to define the case. The case presented in this research is limited to understanding how a choice in business strategy affects SCM. Ragin (1992) proposes that a case may be defined (casing) to bring operational closure to some problematic relationship between ideas and evidence, and theory and data; and to limit the case to a proper size. The biggest possible case for this research would be investigating all business strategies’ impacts on SCM. However, this case is not actionable due to practical reasons. Ragin (1992) claims that casing can occur in any stage of the research, but most commonly in the beginning or at the end. Dubois and Gadde (2002) argue that a case may be seen as both a product of the
research and a tool in the research. If seen as a tool it can be used to fit pieces of data to build a bigger picture.

The first delimitation is the research focus, i.e. consumer-focused business strategies’ impact on SCM. To investigate this phenomenon requires access to the field, which was gained in the Swedish furniture industry. Case company Alpha allowed full access to data and information about other wholesalers, and opened doorways to several partners in Alpha’s supply chain. Here, however, the access to the field was restricted, and no other furniture wholesalers with an explicit consumer-focused business strategy could be identified. The case could then be defined as a consumer-focused business strategy’s impact on SCM in the Swedish furniture industry.

The research aims to explore the impacts and requirements of a consumer-focused NPD on SCM. The case study approach corresponds well to the explorative approach of this research (Yin, 2008). Moreover, the case study was considered appropriate, since the research tries to analyze contemporary events in a complex setting, in which the researcher has no control over the events (Yin, 2008). Case study is a research approach focused on gathering several pieces of evidence and gaining in-depth understanding of the studied case (Yin, 2008). Hence, case studies are suitable to overcome some of the difficulties of social science. Moreover, Flick (2009) argues that most phenomena in social science cannot be explained in isolation, which is one reason why case studies may include qualitative data, quantitative data, or both (Eisenhardt, 1989; Yin, 2008), which allows the researcher to increase the understanding by examining the research object from several perspectives. Qualitative data is gathered through interviews, artifacts, observations, conversations, as well as internal and external reports. Quantitative data is primarily made up of historical sales and inventory data gathered from annual reports and Alpha’s data system.

3.3 RESEARCH JOURNEY

The contacts with the case company started in 2007 and continued until the summer of 2009, when the PhD studies were initiated. The interactions prior to the start of the research were lectures given by the company and some discussions with the founder/former CEO. Initially the research was supposed to focus on the interface between NPD and SCM and include several companies. Alpha was only supposed to provide input to the research about its NPD centered on consumer insight. However, as the research progressed, it was obvious that Alpha contained huge amount of information that could contribute to an increased understanding of a consumer-focused business strategy.

The research journey has in many ways been an iterative process. The research questions developed during the initial stage of the research, which initiated literature reviews and developed the framework, which initiated more empirical research. The case company has allowed full access to the requested data and employees, managers, and owners have continuously discussed and reviewed the findings and proposed new areas for further research. Colleagues have discussed the research and the findings have been compared to several frameworks, such as risk management and supply chain ethics, to increase the understanding of the studied phenomenon. In a sense, the research has expanded in several directions from one small starting point, just like a droplet of water being absorbed by a paper tissue.

3.3.1 2009 Q 3-4

The research started in the summer of 2009. The first action was to review secondary data to investigate Alpha’s NPD. Internal communication containing strategic, tactical, and
operational information was collected. The biggest focus was documentation from five earlier NPD projects. The documentation contained 376 documents produced by students, who conducted the initial consumer insight studies. During this time four in-depth interviews with senior and middle management were conducted. The interviews lasted 60-90 minutes.

This was the first crossroad in the research. It was evident that the effects that Alpha’s consumer-focused business strategy has on SCM is related to NPD. The research continued during the fall of 2009, mainly through numerous telephone calls, e-mail correspondence, and visits to Alpha’s headquarters. From this point on, close communication, almost on a day-to-day basis, was initiated with the CEO. Further, the CEO and the manager of NPD were invited to give two lectures at the University of Borås. The main breakthroughs during this period were understanding the NPD process, how the NPD process is intertwined with SCM, and the importance of the case company’s data system.

3.3.2 2010 Q 1-2
As the year turned, the research intensity increased and the company went through several changes. The manager of NPD left her job and got replaced. The traveling salesman responsible for one area in Sweden left his job for another industry. Instead of employing a new salesman changes were made on the strategic, tactical, and operational levels and the existing sales force got new instructions. Moreover, an employee at customer service quit her job and was replaced. All in all, this was a time period filled with turmoil for the case company.

The structures of the company started to become more and more evident and rich of detail. For quality purposes all research documents were transferred to a database, in which all future research was to be documented. Several descriptions of demand creation and the supply chain and charts representing the flow of materials and information were created during the spring. This was a back and forth process with personnel at the case company. During the spring and early summer at least one day a week was spent working at Alpha’s headquarters. Several times there was no research agenda, but spending time in the empirical setting allowed greater understanding for the research findings. It also resulted in several breakfast and lunch meetings and hallway talks, discussing topics from family issues to branding, advertisement, SCM, and collaboration.

During a visit at one of the most important retailers the importance of the retailer as a middleman between the case company and the consumers became apparent. This was the second crossroad in the research, where it was decided to analyze the supply chain in two parts for better understanding. One part was upstream and inventory, and the other was downstream. The reason for addressing upstream issues and inventory jointly was due to their close relation. In agreement with the CEO, retailers from one geographical business area were chosen for future research. The reason for using one geographical area is that the CEO believed that consumers in that area are able to travel to any retailer and the same traveling salesman from Alpha was responsible for all, but two, of the chosen retailers.

Order data, representing one year of sales (1st of April 2009 – 18th of April 2010) from the selected geographical area, was extracted from the company database. The data included 2,091 rows of data. Each row included information about the customer, a product number, Alpha’s landed cost and sales price for the product, and the total amount of that product that the customer ordered during the time period. In total, 13,639 items were ordered by 33 customers. This data needed a lot of work before it could be used for any research purposes; a few stores had filed for bankruptcy and a few customers were companies that had placed one
or a few orders for their own use, i.e. not all of the customers were retailers. The data contained brochures, discounts, sample materials, and some auxiliary items that had to be removed. Finally, consumer products consist of items in the data system. Due to the postponement strategy used by Alpha, consumer products may consist of 1-4 items. A table (1 consumer product) might arrive at the distribution center as legs and a table top (2 items) in different shipments. Costs are added to the items and price is added to the product in the data system. If the product is made up of one item the data is added to the same row, but if the product contains of two or more items several rows have to be combined to get the cost and price of that product on the same row. An example is presented in Table 3-1 with the fictive product “B”. When the data was prepared 16 retailers and 1 606 rows of information were left. The reduction in customers (17 customers, 52 percent) and the reduction of rows (485 rows, 30 percent) reveal that each removed customer accounts for approximately 28.5 rows or 1.7 percent of the rows, which may be compared to the remaining customers, where each accounts for 100.5 rows or 4.5 percent of the rows.

<table>
<thead>
<tr>
<th>Name</th>
<th>Price</th>
<th>Cost</th>
<th>Name</th>
<th>Price</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Table 126x79 H90</td>
<td>v</td>
<td></td>
<td>B Table 126x79 H90</td>
<td>v</td>
<td>w+x</td>
</tr>
<tr>
<td>B Top 126x75</td>
<td></td>
<td>w</td>
<td>B Sideboard</td>
<td>y</td>
<td>z</td>
</tr>
<tr>
<td>B Legs H90</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Sideboard</td>
<td>y</td>
<td>z</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wholesalers in the furniture industry have a high focus on the number of display pieces they are able to sell to the retailers. The customer cards, 46 printed pages, provided information about the display pieces at the investigated retailers. Based on the available data and the notion that display pieces are perceived to be important a set of interesting figures for further investigation were proposed.

- Sales value
- Sales quantity
- Number of display pieces
- Number of different articles sold
- Percentage of the display pieces sold at least once
- Sales value per display piece
- Sales quantity per display piece
- Number of sold articles per display piece
- Number of sold display pieces per display piece

The data analysis yielded a vast amount of graphical representations of the studied material, which caused both clarity and confusion. It became evident that different retailers had different strengths. The retailers that the company had a liking for also showed strong results in the data analysis. In order to better understand the figures it was decided to spend two whole days with the CEO visiting the studied retailers. The trips were carefully planned in advance by investigating data, maps, information about the retailers, and by discussing what information to look for with the CEO and the traveling salesman responsible for 13 of the stores we were about to visit. In total 15 retailers were visited. During the visits the stores were photo-documented, and when possible there were discussions with personnel and managers. The shortest visit was a retailer, where the personnel showed no interest to interact, which lasted for about 15 minutes. The other retailers welcomed the visit and engaged in discussions about the furniture industry, the retailer, Alpha, and the collaboration between
Alpha and the retailer. Due to the good preparation unstructured interviews with personnel and managers were possible to conduct. Notes were taken during the interviews and after leaving the store the notes were shown to the CEO who added comments. The interviews lasted from 30 to 120 minutes and allowed not only to discuss the planned topics, but also gave new insights valuable for the research.

The case company held an annual activity for its most important customers. About 30 representatives from the retailers were present. About ten of them had contributed to the research during the visits to the retailers. Alpha presented future plans for the retailers and the retailers were able to give feedback. The session gave a lot of input regarding Alpha’s business model and how the retailers had perceived the change in Alpha’s business strategy. The activity continued with a social gathering during the day and a party in the evening. This provided several informal opportunities to gain understanding for the furniture industry. Moreover, a representative from one of the shipping companies used to transport furniture from China to Sweden took part in the social gathering.

Research was also conducted visiting Chinese manufacturers. The trip provided an opportunity to visit two factories and meet the serving team. The trip included many discussions with managers of NPD at the factories, the owner of one factory, about 15 people representing middle management at the factories, and four people from the serving team. The whole experience resulted in an understanding of the furniture manufacturing industry in China. Following the visit in China there has been e-mail correspondence with one of the NPD managers in China and one representative from the serving team to validate findings and gather additional information.

3.3.3 2010 Q3-4

The year continued with frequent visits to the case company. In August the company held a two-day internal sales meeting, where sensitive information about the plans and the budget for the year to come was presented. A follow-up meeting with the former manager of NPD was booked to confirm some of the findings made during the last year. A mapping of information flows was conducted to better understand the supply chain flows. The trip to China and the mapping of information flows initiated further investigation into the case company’s upstream processes and inventory. Lists of products were analyzed to identify how the number of products has changed, since the company changed business strategy and inventory performance measures were investigated.

A few days before Christmas the case company and all of the employees visited two important retailers. The activity lasted for one entire day. One of the visited retailers has a mixed sourcing strategy where some of the furniture is bought from wholesalers and some is imported by the retailer. Own import doubles the contribution margin, but also requires the retailer to invest in buildings for incoming goods, quality control personnel, and repair facilities; and to tie up capital in inventory.

Even though the empirical data was collected during this time period, the main part of the research time was devoted to writing articles. This meant that data had to be structured, visualized, and put in a context, which increased the understanding of the collected data. The CEO of the company was given illustrations and findings on a continuous basis and was able to comment, suggest changes, and provide additional data. At this moment, 23 companies were included in the research, 35 interviews were transcribed, and the database consisted of over 600 documents of primary and secondary data and preliminary reports.
3.3.4 **2011 Q1-2**
The economic performance of Alpha and eight of the competitors was analyzed, based upon sourcing country as a continuation of the focus on sourcing. A second group of nine retailers was chosen for data analysis, but the basis for selection was high importance for Alpha. The CEO also confirmed a suspicion that the data system is not well suited for Alpha’s business model and updates may be necessary. Due to limitations in the data system it was soon evident that the benefits of additional retailer investigations would probably be overshadowed by the enormous amount of work required to make the data useable. At this point it was time to wrap up the empirical research and to start focus on the presentation of the research.

3.4 **PAPER CONNECTION AND CHRONOLOGY**
The initial study focused on the case company’s NPD. The output of the study was a paper on the role of consumer insight in NPD and how it affects SCM (Eriksson and Hilletofth, 2010). That paper initiated intensified studies into the case company’s consumer-focused business strategy investigating manufacturing, sourcing, inventory and distribution processes (Figure 3-1). Even though the process seems to be linear, all research questions have been investigated simultaneously and new areas for further research have continuously been discovered and in some cases altered the focus of the ongoing studies.

![Figure 3-1: Connection between papers and research questions](image)

The first contacts were made with the company in 2007 and continued at brief occasions, until the research was initiated in the summer of 2009. During the time to come results were continuously presented to the case company and the first output, with regard to this thesis, was the three appended papers submitted to two journals in the end of 2010 and one journal in the end of 2011. The data collection has continued during the review processes and while writing the thesis (Figure 3-2).

![Figure 3-2: Timeline of the thesis](image)
4 SUMMARY OF THE APPENDED PAPERS
The previous chapter explained the reasoning behind the user research approach to give an insight to how the research was conducted and present the timeline of the research and the connection between the appended papers. The goal of this chapter is to present the most important findings from the appended papers with regards to this thesis. At the end of the chapter there will be a summary of the findings from the appended papers.

The papers have different focus with regards to the investigated supply chain (Figure 4-1). Paper 1 focuses on consumer-focused NPD, and its coordination with the entire supply chain. Paper 2 focuses on the upstream supply chain and inventory, and how it has ben affected by the consumer-focused NPD. Paper 3 focuses on the downstream supply chain, and how retailers contribute to value creation.

4.1 PAPER 1: COORDINATING NEW PRODUCT DEVELOPMENT WITH SUPPLY CHAIN MANAGEMENT
Paper 1 is focused on how NPD is coordinated with SCM. The case company is focused on market intelligence and NPD, which are processes devoted to create demand. Even though SCM is considered important, its main purpose at Alpha is to support an innovative NPD.

4.1.1 PURPOSE AND BACKGROUND
It is well established in literature that SCM and NPD are closely connected. However, there is a remarkable lack of research addressing coordination of SCM and NPD. The purpose formulated in the paper is “to form an understanding of how NPD is connected to SCM”. The research uses earlier findings about the importance to balance demand creation and supply chain processes and investigates them in relation to the Swedish furniture industry, with case company Alpha as the primary source of empirical information.

The article was primarily written based on data from case company Alpha. However, data from other wholesalers was also used to better understand the findings (not presented in the thesis). The information presented in figures Figure 4-2, Figure 4-3 and Figure 4-4 is based on qualitative data gathered during an extended period of time. During the entire course of the
research the findings have been discussed with the case company and validated both before and after writing the article.

4.1.2 FINDINGS
The product lifecycle in the furniture industry is not related to the innovativeness of the products. Products, colors, and materials go out of fashion, but it is not restricted to isolated price segments. High-end furniture may be modern for a short amount of time, but some of the most modern and fashionable products available on the market have remained unchanged for over 30 years. Low-cost furniture may also have a lifecycle of several years, but might only last as long as it takes to sell one shipment.

To increase competitiveness the case company changed focus from cost and volume to provide superior value through innovativeness and consumer orientation, which would allow them to charge premium prices. NPD was defined a major business process and SCM was given a support role. In order to operationalize the business strategy the NPD process (Figure 4-2) was defined. The NPD process includes guidelines for NPD and SCM. The CEO has the ultimate responsibility for NPD, and managers for NPD, purchasing/logistics, and marketing are responsible for their respective areas. SCM has some influence over NPD due to restrictions in e.g. material choices in order to secure sourcing. There are three defined stages within the NPD process approach: market intelligence, product creation, and commercial launch. The aim of market intelligence is to ensure clear identification and prioritization of opportunity areas and to express these in a strategic market plan, and the aim of product creation is to define and develop consumer relevant and innovative products.

![Figure 4-2: The NPD process](image)

During the market-intelligence stage consumers are divided into nine segments, based upon psychographics and design styles. The resulting matrix is called the product platform (Figure 4-3). Furniture collections are placed in their respective cell and color-coded, based on their performance and lifecycle.

During the consumer-opportunities stage the company tries to form an understanding of the consumers that is deeper than what the consumers are able to express, consumer insight. Consumer insight, segmentation, and product development strive to increase the consumer perceived value. Consumer insight is gathered by visiting potential consumers and photo-documenting their homes. Thus, the case company is able to identify new areas of product differentiation. One such project has been conducted each year, which has resulted in more than three times as many consumer available products as previously.
Product creation strives to develop consumer relevant and innovative products. Based on an assessment of the product platform and the strategic market plan, a room or furniture type is targeted for further product development. A number of squares in the product platform are targeted, and the designers are also restricted to their targeted square as well, as the colors and materials they are allowed to use. Moreover, ideas may be generated without a linear process. One of the company’s best selling collections was co-developed by the manager of purchasing/logistics and the manufacturer. The entire process is illustrated in Figure 4-4.

<table>
<thead>
<tr>
<th>Consumer Groups</th>
<th>Design Styles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Style A</td>
</tr>
<tr>
<td>Group A</td>
<td></td>
</tr>
<tr>
<td>Group B</td>
<td></td>
</tr>
<tr>
<td>Group C</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4-3: The product platform**

<table>
<thead>
<tr>
<th>NPD Stage</th>
<th>Description</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Opportunities</td>
<td>Explore chosen room/furniture type to find consumer opportunities</td>
<td>By chance, or observation get an idea for a product</td>
</tr>
<tr>
<td></td>
<td>Gather consumer insights regarding consumer opportunities and present them to designers</td>
<td></td>
</tr>
<tr>
<td>Residual ideas</td>
<td>Design furniture based upon consumer opportunities, targeted square in the product platform in accordance to restrictions in the material matrix</td>
<td></td>
</tr>
<tr>
<td>Primary Development</td>
<td>Analyze presented ideas and prioritize future product development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Residual ideas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Winning product concepts, prototype creation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Redo previous steps, continue to product development, put down</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4-4: The consumer opportunities identification process**
Emphasis on NPD in combination with decreased sales has had a negative effect on the supply chain performance. It is hard to determine the extent of the effect caused by NPD, but a lack of fit between NPD and SCM capabilities is acknowledged by the CEO. The manager of purchasing/logistics struggles with capital tied up in inventory and increasing complexity, due to increased number of different inbound products, while sales are decreasing. Despite introducing modular design to easier provide the consumer with more options and a new forecasting system, the sourcing structure has remained virtually unchanged during the shift in competitive focus. Furniture used to be sourced from China and Malaysia and is now solely sourced from China. The leadtime from order placement to delivery is about 16 weeks, a 50 percent increase since the implementation of the new NPD process, which induces a need for accurate forecasting. Other issues with manufacturing in China are the manufacturers’ preference for customers from countries that are able to place large orders and that the manufacturing environment is designed for furniture with distressed finish. The case company is neither able to order large volumes, nor is there a demand for distressed furniture in Sweden. The preferred finish is white pristine, which is hard to produce for the Chinese manufacturers. Apart from manufacturing, retailers also play an important role in conveying information about the products to the consumers. Thus, the NPD process requires attention to the whole supply chain in order to reach its full potential.

The main findings are that the output of NPD will have demands on the supply processes and that increased number of SKUs may increase leadtimes, if the supply chain is not considered when a new NPD process is implemented.

4.2 Paper 2: Matching Supply Chain Strategy with Business Strategy and the Results of a Mismatch

Paper 2 is focused on the upstream side of the case company’s supply chain. Sourcing and inventory, however, are so closely related that the effects of the upstream activities are better understood if investigated parallel to inventory management.

4.2.1 Purpose and Background

Even though the main focus of the case company’s change in business strategy is centered on NPD processes SCM has been given attention. The primary goal of the company’s SCM is to be cost-efficient and reliable, and meet the demanded quality standards. The purpose formulated in the paper is “to enhance current knowledge about a consumer-focused business strategy and its impact on sourcing processes”.

The article was primarily written based on data from the case company and the Chinese furniture manufacturing industry. Information about the Chinese manufacturing industry has been gathered during the course of the research and also during a research trip to China in the summer of 2010. Annual reports from the case company and the nine most important competitors spanning from 2003-2009 were compared to perform economical analysis, and Alpha’s sales for one year, starting in the middle of 2009, was investigated to understand the distribution of sales per product. Finally, interviews were conducted to better understand and interpret the data.

4.2.2 Findings

Despite the intense focus on NPD the case company has a rather conventional sourcing strategy for furniture wholesalers. Products are sourced from China and shipped to the distribution center in Sweden, where it awaits further transportation to retailers, as soon as a consumer makes an order. The sourcing is differentiated into two main groups: private label and key account. The first accounts for about 96 percent of the inbound goods. Key account
products are ordered by customers before Alpha orders them from China and generate lower contribution margins than private label products. Products may be delivered fully assembled, knock down, or in parts ready for final assembly. Parts are possible to mix and match to increase the number of consumer available options. The total leadtime from order to delivery is about 18 weeks. During shipping the filling rate is important, due to the large size of furniture in comparison to its sales value. The calculated price for shipping one cubic meter is 570 SEK (~€65). Alpha collaborates with a serving team in China to bridge geographical and cultural distances. The serving team is responsible for quality control and daily interactions with manufacturers and ports.

Alpha is a rather small customer for many of the manufacturers in China and has relied on forecasts to ensure sourcing. Moreover, Alpha's requested white pristine finish has been hard to achieve for the Chinese manufacturers due to a dirty manufacturing environment. Larger volumes and demand for a dirty brown finish have made some of the manufacturers to favor American customers. There have also been issues with finding employees for the manufacturers. Part of the workforce has been able to find employment inland, and the workers closer to the coast opt for jobs in the car and electronic industry, as it offers a cleaner working environment. These factors have contributed to the above mentioned leadtime that has an increase of 50 percent compared to earlier.

Despite rather long lifecycles product management is a difficult task. One culprit is that the stock keeping units have doubled since the increased focus on NPD. Differentiation tactics are available to ease the sourcing, e.g. 20 percent of the most sold stock keeping units represent 80 percent of the sold units, and the demanded leadtime varies between consumer segment and product segment. Despite opportunities the only differentiation that exists is between private label and key account products. One hurdle to implementing differentiated sourcing is the decision to rely solely on sourcing from China. Manufacturing capabilities and demand patterns have forced the manager of purchasing/logistics to place orders that correspond to two or three years of predicted demand. One rather small manufacturer overproduces some products that are stock kept in anticipation of future orders. Surely this weakens Alpha’s competitiveness towards other wholesalers when competing for manufacturers. Moreover, retailers feel that there is a bad fit between premium priced products and Chinese manufacturing, as consumers expect expensive products to be made closer to the consumption market. Local sourcing has been discussed and the case company has capabilities for manufacturing at its distribution center, but they are not utilized at the moment.

As it comes to economic performance Alpha’s development was compared to a fictive company (Total) comprising the reported figures for Alpha and nine of its competitors. Sales, inventory levels, and turnover in inventory were compared (Figure 4-5). The trends seem similar and three prediction intervals could not reject the null hypothesis that Alpha’s development is different from Total in any of the compared values from 2003 to 2009. To cope with declining sales overhead costs have been minimized. Inventory levels have started to decrease but are still high compared to the sales. Reduced inventory levels could free money for sourcing or allow the case company to rent some of the inventory space. Today the company sees marketing and sales as the way out of the financial conundrum.
One issue that is not considered during the NPD process is the consumer price. Consumer price is determined at a later stage and is dependent of several outside factors (Figure 4-6). The FOB price is adjusted for currency levels and called base price. The volume cost for shipping is added to the cost for the serving team and called handling cost. Base price and handling cost is the purchase price. The calculated price is the sum of the purchase price and the purchase price multiplied with an overhead multiplier. About 30 percent of the overhead costs are supposed to be absorbed in the price structure. Alpha’s requested contribution margin is added to the calculated price and the sum is the customer price (the price charged to retailers). The customers’ demanded contribution margin and value-added tax are added to the customer price, which adds up to the consumer price. Small changes in the bottom of the price structure may result in large effects on the consumer price. As sales volumes are decreasing and overhead costs are hard to reduce further, consumer prices have increased without any justification in added consumer value, which may result in lost sales and a downward spiral of decreasing sales and increasing consumer prices.

The recent decline in sales and the increase in consumer available products (Figure 4-7) have presented challenges for the supply chain. Problems induced include other wholesalers being prioritized by the manufacturers, capital tied up in inventory that causes problems with floating assets, and more unique articles in each order leading to smaller order quantities. The issues and outside factors have reduced Alpha’s abilities to respond to changes in demand.
The main findings are that a consumer-focused business strategy needs to be aligned with the supply chain capabilities, and that consumer price sensitivity needs to be considered during NPD and when devising the supply chain costs structure. Failure to match the supply chain with NPD may reduce the value of the products and cause problems with both sourcing and inventory management.

4.3 **Paper 3: Creating Value in the Supply Chain: Information Distortion and Value Gaps**

Paper 3 is focused on the downstream side of the case company’s supply chain. Downstream activities and retailer performance are closely related to the NPD success of the case company.

4.3.1 **Purpose and Background**

The case company’s business strategy is largely centered on understanding consumers during early stages of NPD. The products developed may be regarded as innovative. Despite the great amount of efforts that are put into understanding consumers the role of the retailers in communicating the innovative value of the products has not been investigated. Goals of wholesalers and retailers are discussed in section 1.5. The purpose formulated in the paper is “to investigate how retailers affect value creation for a wholesaler who develops innovative products”. The paper seeks to answer the research question “how do retailers affect value creation for a furniture wholesaler selling a flexible assortment with innovative features?”

The article was primarily written based on data from the case company and 16 retailers located in the same geographical region. Qualitative data is extracted from interviews with key personnel at the case company and interviews with and visits to all of the included retailers. The sales data from the 16 retailers was extracted from the case company’s data system and represents one year of sales starting in the summer of 2009. The retailers are
referred to as A-P, based on their number of display pieces from Alpha (A has the highest amount).

4.3.2 **Findings**

Despite the notion that the number of display pieces is important, there is a lack of knowledge in the relation between sales and display pieces. The retailers were not even able to name the display pieces used the last year. The study reveals that there is a correlation between the number of display pieces and sales volumes (Figure 4-8). Based on this data alone, however, it is not possible to determine causal relationships. There is also great variation in performance between retailers, e.g. retailers A and B have the same amount of display pieces, but A is able to generate more than double the sales of retailer B.

Three additional performance measures were constructed to further investigate the retailers’ performance (Figure 4-9). Sales/number of display pieces (M1) measures how much sales each display piece averages during the studied period, the percentage of display pieces sold at least once (M2) indicates if the right products are shown, and the number of unique pieces sold per display piece (M3) is important to investigate if the retailer is able to sell products that are not on display. The sales difference between retailers A and B is further explained by M1-3, where retailer A is outperforming retailer B. Retailer N has the highest values of all retailers, retailer G has good performance on M1 and M2, and retailers M and P perform well on M3.

![Figure 4-8: Sales and display pieces (highest values indexed 100)](image)

Of all the 400 retailers Alpha considers retailer A to be the retailer with which they have the best collaboration. Their showroom is designed so that they are able to present the display pieces in the way intended by Alpha. Retailer B on the other hand has a showroom that has deteriorated. Retailer D has a good display of Alpha’s furniture and retailer G has expressed a special liking for Alpha’s furniture. Several retailers treat Alpha’s furniture as generic products, which is apparent with media furniture that is displayed in a way that does not show off their innovative features. Retailers E and H have not considered the product features and
I was the only retailer not engaging in discussions, when visiting them during the research.

One relation between display pieces and sales, that was accepted by both retailers and the case company, is that retailers that are able to generate high sales volumes on furniture from one wholesaler are likely to invest in more display pieces from that wholesaler. As investments increase, it is likely that sales will increase even more, creating a positive spiral. Thus, retailers that invest in a few pieces from the case company and are able to display them in a suitable way are likely to increase sales and invest in more display pieces. Essentially it means that retailers that are able to convey the information about the value of the product to the consumer are likely to increase the products performance. Moreover, if the value of the product is easy to identify for the consumer, e.g. low price or appealing design, the need for the retailer to display the product the correct way and understand the value of the product is reduced; the consumer will still be able to identify those characteristics and thus the value of the product. Moreover, several retailers stress that as Alpha increases the price of the products, the consumers become increasingly aware of the product quality.

![Figure 4-9: Retailers' and display pieces' performance (highest values indexed to 100)](image-url)
If the process of gathering consumer information is seen as demand pull, the process of converting the information to actual products and selling them to consumers can be seen as demand push. It is likely to assume that information is distorted during NPD, and the empirical data indicates that the retailers affect the information distortion to a varying degree, where retailers with high performance on M1-3 add the least information distortion and therefore are better in conveying the innovative value of the product to the consumer. Information distortion in demand pull and push is illustrated in Figure 4-10.

The main findings are that there are several possibilities to measure how well retailers perform, and innovative products may lose consumer perceived value if information about the product is distorted by the retailers.
4.4 **Summary of the Papers’ Purposes and Findings**

The main findings from the papers with regard to the research questions are summarized in Table 4-1. Each research question is answered in one paper. The close connection between the research questions, however, has resulted in each paper contributing to the understanding of the other research questions. This is an indication that the questions are closely interrelated. All three papers help to answer the principal research question, which indicates that the research questions have been properly derived.

<table>
<thead>
<tr>
<th>Paper 1</th>
<th>Purpose</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper 1</td>
<td>Form an understanding of how NPD is connected to SCM.</td>
<td>The output of NPD will have demands on the supply processes. Increased number of SKUs may increase leadtimes, if the supply chain is not considered as a new NPD process is implemented.</td>
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| Paper 2 | Enhance current knowledge about a consumer-focused business strategy and its impact on sourcing processes. | A consumer-focused business strategy needs to be aligned with the supply chain capabilities. Failure to do so may reduce the value of products and cause problems with both sourcing and inventory management. |

| Paper 3 | Investigate how retailers affect value creation for a wholesaler who develops innovative products. | There are several possibilities to measure how well retailers perform. Innovative products may lose consumer perceived value, if information about the product is distorted by the retailers. |
5 ANALYSIS
The previous chapter presented the most important findings from the appended papers. The goal of this chapter is to analyze the findings, i.e. review them based on the theoretical framework, and answer the research questions. The analysis is structured in the same order as the presentation of the framework and will start with demand creation and SCM individually and continue with macro-coordinated management of demand creation and the supply chain. Finally the chapter will answer the research questions.

5.1 DEMAND CREATION
Demand creation incorporates the companies involved with activities focused at understanding, creating, and stimulating consumer demand. Internally the strategy is well coordinated with market intelligence and NPD. On the sourcing side of the supply chain the serving team in China is the only actor truly involved in demand creation. The manufacturers and the case company do collaborate when they decide on materials and hardware, but the manufacturers are not concerned with the activities necessary to understand, create, or stimulate consumer demand for the benefit of the entire supply chain. On the distribution side retailers seem to be involved in the demand creation processes to a varying degree. The skills to communicate and display the benefits of the products seem to be of essence. However, demand creation seems to be a one-way street from the case company, via the retailers, to the consumers. In order to better understand the joint efforts to increase perceived consumer value, Figure 2-1 needs to be revised and analyzed (Figure 5-1).

![Figure 5-1: Revised value gaps (Based on Parasuraman et al., 1985)](image)

Gap 1 is addressed and probably reduced with the NPD process, which is focused on understanding both implicit and explicit needs, i.e. gathering consumer insight. Gap 2 is addressed in and decreased by the guidelines for NPD, but may be increased by the restrictions in material choices. Gap 3 may increase due to lack of control over manufacturing facilities, but is reduced by the quality control personnel employed by the serving team in China. Gap 4 seems to be affected by the retailers’ ability to communicate the properties of the products to the consumers. They could both oversell and undersell the delivered value. The comparison with retailers A and B further highlights how soft values may induce this gap. Gap 5 was not included in Figure 2-1. The case to add gap 5 is due to the retailers’ comments on how increased price makes consumer more demanding on the quality, which
may lower the perceived value. Moreover, perceptions of value are subject to the consumers and should therefore not be expected to be equal to the value that is actually delivered. Gap 6 could be considered to be the main focus for the case company. By gathering consumer insight and managing demand creation and the supply chain the case company strives to increase consumer perceived value. Despite the importance of gap 6, the case company has no intentions to investigate the perceived value by consumers following a purchase, which could give an indication of the success of the new business strategy. Gaps 1 and 6 are related to consumer subjectivity. The case company has segmented its consumers based on psychographics, which may have a positive impact on value creation. However, the segmentation of consumers could be pursued even further to create differentiated strategies for mapping value gaps and devising demand creation supply chain strategies. The model clearly shows that the whole supply chain is involved in the creation, reduction, and increase of value gaps, which affects consumer perceived value and satisfaction. Thus, value creation is evidently a task for the whole supply chain and not a single entity within the chain.

5.2 Supply Chain Management
The supply chain includes the companies involved with activities focused at fulfilling consumer demand. The internal coordination between strategy and SCM is poor. Even though SCM has some input to demand creation, it is mainly a support function. In that sense, market intelligence and NPD could be said to dictate SCM.

The supply chain is global with sourcing from Asia focused on cost reduction and responsive and flexible distribution in, first and foremost, the Nordic countries. Both distances and the overall business strategy have impaired sourcing, and the sourcing structure seems to create rigidity and poor ability to respond to changes in demand. Several taxonomies to select supply chain were put forth in section 2.3.2, e.g. leagile approaches based on the Pareto rule, base and surge demand, and postponement. Postponement is already used with the distribution center as a natural decoupling point. Still, the leagile principles are not mutually exclusive and sourcing from China combined with sourcing from countries located closer to the consumption market may help to increase revenue and agility, while keeping the costs at a minimum level.

As stock keeping units increase more products are forced into the same sourcing configuration. The new products, which are the results of the new business strategy, may have different requirements on the sourcing structure compared with the products the company provided earlier. This constitutes a natural starting point for a differentiated supply chain strategy. Chinese sourcing is likely to provide the lowest purchasing cost, but the goal of a supply chain should not be to reduce costs per se, but to decrease costs while increasing revenue and profitability. As of today manufacturing is included in sourcing activities. If manufacturing is treated separately from sourcing and not as a packaged deal, it may become better aligned to fit the overall business goals.

5.3 Macro-Coordinated Management of Demand Creation and the Supply Chain
The primary notion of macro-coordinated management of demand creation and SCM is that the two management directions should be managed on a overlying level and be viewed as equally important in order to achieve maximum long-term profitability for the involved stakeholders. The case company has macro-management in the strategic market plan, but SCM has clearly been given a support role to demand creation. While it is said that the quest for operational efficiency may result in activities replacing the strategy (Porter, 1996), it could
be argued that the quest for innovative products at Alpha has resulted in revenue increasing activities replacing the strategy and shaping the business strategy on behalf of increased profitability. Thus it can be said that business strategy and demand creation dictate the rules for SCM, even though some supply chain capability constraints are taken into regard during NPD (Figure 5-2). The case company is clearly a company driven by demand creation, suffering several of the potential drawbacks of lack of coordination of demand creation and SCM; most notably the bad match between products and manufacturing, issues with inventory management, and inability of retailers to preserve and increase the innovative value of the products.

![Diagram: Connection between strategy, supply chain management, and demand creation management at the case company](image)

In order to truly understand the gaps discussed in Figure 5-1 the theoretical framework is necessary. The supply chain has been discussed in both Figure 1-3 and Figure 1-4. Gaps 2, 3, 4, and 5 are clearly affected by the ability of the supply chain partners to understand, create, and communicate the value of the product, i.e. demand creation. However, manufacturers and retailers are not included in the case company’s demand creation. Manufacturers have little, if any, contribution to the demand creation processes and the contribution from the retailers is found uneven. The revised gap model has been used to explain how information about the product value is distorted by partners in the supply chain, which excludes them from the demand creation and reduces their ability to fully exploit the postponement strategy used by the case company.

Alpha’s business strategy may be further understood, if the studied chain is broken down into its smallest parts, i.e. the links (Figure 5-3). Agents and potential consumers have a demand creation link, due to the consumer insight gathering process. Consumer insight is converted to product offerings during NPD, in which agents, designers, and Alpha are involved. Thus, they are linked with demand creation. The serving team in China is linked to Alpha through demand creation, as they play an important role when determining manufacturers’ capabilities and performing quality controls. Manufacturers have a demand creation link to the serving team since they provide information about their manufacturing capabilities. This link, however, is weak since it does not create, or increase consumer demand, but might put restrictions on what products that are possible to manufacture. Marketing and sales and branding are primarily carried out with advertisement to consumers and sales material that is
distributed to the stores. Retailers with low sales performance are most likely only supply chain partners, while collaborating retailers with high sales performance contribute to create and stimulate consumer demand and thus are part of demand creation.

Figure 5-3 illustrates how actors on both sides of Alpha are included in demand creation activities. Thus, demand creation processes need to consider the whole chain and not only a focal company or a dyad. It is also evident that different actors distort information in different processes prior to NPD or after NPD.

5.4 MANAGING VALUE AND LEVEL OF COLLABORATION

Several taxonomies for supply chain selection are presented in the frame of reference. However, they all fail to recognize the importance of configuring the supply chain to match how value is presented to the end consumer. Innovative products are said to require supply chains that are able to swiftly respond to erratic demand. Innovativeness is often a way to increase consumer perceived value and to be able to charge premium price for the product. If the value, however, is hard to detect for the consumer the product may only appear to be expensive and not value adding. As the retailer is responsible for consumer interactions the brand owner/retailer dyad is of interest.

Two dimensions needs to be considered: the level of collaboration between brand owner and retailer and the nature of the value offering. The level of collaboration is a continuous spectrum from no collaborative efforts to close collaboration or even ownership of both brand and retail. For simplicity however it is sufficient to use “low” and “high”. The nature of the value offering is also on a continuous spectrum from where the consumer is unable to identify the value of the product to where the consumer is able to identify the value immediately. “Obscure” and “obvious” are used to label this dimension. Collaboration in this research has been mentioned as retailers’ ability to convey information about the product to the consumer.
Efforts devoted to understanding and learning to communicate the value of the products is here considered to be collaborative.

![Diagram](image)

**Figure 5-4: Nature of the value offering and level of collaboration matrix**

If the level of collaboration with a retailer is low and the nature of the value offering is obvious the value of the product, as perceived by the consumer, is retained. The consumer is e.g. able to notice the low price or appreciate the choice of materials. If, on the other hand collaboration is high the value may also be increased since the retailer might be able to display matching products or present some value adding information about the product. If the level of collaboration is low and the nature of the value offering is obscure the value of the product, as perceived by the consumer, is likely reduced. Hidden ventilation in media furniture e.g. might increase the consumer price of a product, but if it is not displayed correctly the consumer will only see a steep price tag. If, on the other hand, collaboration is high the value is retained or increased since the retailer might be able to inform the consumer about how the product will add value, such as customization options, hidden features, or sustainable production methods. The only time when high collaboration is necessary to retain consumer perceived value is when the nature of the value is obscure (Figure 5-4).
5.5 Answering the Research Questions

This thesis set out to investigate the impacts and requirements of a consumer driven NPD on SCM by investigating the interaction between demand creation and supply chain management at a company with a consumer-focused business strategy. In order to address the principle research question three research questions were derived as sub questions. Hence, the research questions will be answered before answering the principle research question.

RQ1: How are NPD and SCM connected in a company with a consumer-focused business strategy?

The case company has included SCM in the strategic market plan. SCM has been given a support role to demand creation, which is guided by not only the strategic market plan, but also the product platform. The two management directions are strongly connected via NPD since NPD generates a lot of output, which relies on SCM for manufacturing, sourcing, and inventory management. Therein lies the connection between NPD and SCM with a consumer-focused strategy. High focus on consumers during NPD, especially when utilizing techniques such as empathic design, is likely to find new areas of product differentiation. This, in turn, resulted in not only more consumer products, but the products also had a higher innovation level.

Products with high innovative value should, according to theory, be matched with a responsive supply chain. Responsive supply chains may also be used to allow a greater number of consumer available products to be supplied. In this sense the consumer-focused business strategy is, with regards to the products created, likely to require a responsive supply chain that is able to support a large number of consumer products. Creating a responsive supply chain, however, might not always be possible. Thus, the limitations of the existing and potential supply chains need to be considered simultaneously with NPD. In essence, NPD and SCM needs to be managed on an overlying level, such as the business strategy, in order to reduce costs, increase revenue, and maximize profitability.

RQ2: How does a consumer-focused business strategy affect sourcing and inventory?

The case company has experienced some of the drawbacks of poor balance between demand creation and SCM and the evidence found in the form of sourcing and inventory problems is striking. The consumer-focused business strategy has increased the number of stock keeping units, which together with the decline in sales have revealed the bad combination of sourcing in China and a broad product portfolio. The leadtime seems to be manageable, but the Chinese production capabilities cause problems. The main issue is that the Chinese manufacturing industry is designed for large batches, while Alpha’s demanded volume for individual products has been reduced with the new business strategy. The mismatch has forced the manager of purchasing/logistics at Alpha to place orders quantities so large that they are forecasted to last for more than one year in inventory. Moreover, the consumer desired finish, pristine white lacquer, exacerbated the situation even more.

Needless to say, when devising a new business strategy the supply chain needs to be considered to ensure that the upstream capabilities are able to match the requirements of the business strategy. Leagile supply chain strategies provide some guidelines for how to create the match. With regards to the studied case postponement and differentiation based on the Pareto rule seem to be suitable. However, it is not yet established how well the Pareto rule is
applicable in the furniture industry where there are high demands on, e.g. consistency in color, and materials.

RQ3: How do retailers affect the value creation for a wholesaler who develops products with high innovative value?

This research has indicated that the output of the case company’s NPD is dependent on the performance of the retailers. In this sense it may be assumed that a consumer-focused business strategy that is integrated with the retailers is able to increase demand creation over the supply chain, which has the potential to increase revenue and potentially decrease Gap 4 and Gap 5 (Figure 5-1). With this view the question is especially interesting from a demand creation perspective since collaboration with retailers has an effect on the consumer-focused business strategy. The findings indicate that a retailer who understands the demand creation efforts of the case company may play a vital role for the success of the intra-organizational demand creation efforts.

PRQ: What are the impacts and requirements of a consumer-focused NPD on SCM?

The connection between demand creation and SCM is established in Section 2.3. SCM is connected with NPD and market intelligence, i.e. demand creation. The consumer-focused business strategy investigated in this research has clearly given demand creation precedence over SCM. The coordination between demand creation and SCM has become a situation where SCM is supposed to support demand creation, with little regards to SCM capabilities.

Clearly, the upstream side of the supply chain needs to be considered as a new business strategy is implemented. The capabilities in sourcing are vital in order to manage costs and capital tied up in inventory. Moreover, the manufacturers are important to consider in order to reduce the value gaps. On the downstream side the ability to integrate retailers in the demand creation seems important to reach the full potential of the products developed with innovative NPD methods and to fully utilize the potential of the supply chain configuration. The main impact of a consumer-focused NPD on SCM is that the supply chain may lose efficiency and effectiveness if its ability to support the new products is not considered. For the case company efficiency was decreased in manufacturing, and the retailers did not maximize effectiveness, as they did not understand the potential value of the products. The main requirement of a consumer-focused NPD on SCM is the importance to acknowledge that the partners in the supply chain play an important role to preserve the innovative value of the developed products and find to ways to make sure that demand creation is the efforts of the whole supply chain, not only a focal company.
5.6 SUMMARY OF THE RESEARCH QUESTIONS AND ANSWERS

The research questions and answers are summarized in Table 5-1. The principle research question has not been targeted in a specific paper. However, the findings from the appended papers have allowed the principle research question to be answered in this thesis.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td><strong>RQ1</strong></td>
<td>How are NPD and SCM connected in a company with a consumer-focused business strategy?</td>
</tr>
<tr>
<td><strong>RQ2</strong></td>
<td>How does a consumer-focused business strategy affect sourcing and inventory?</td>
</tr>
<tr>
<td><strong>RQ3</strong></td>
<td>How do retailers affect the value creation for a wholesaler who develops products with high innovative value?</td>
</tr>
<tr>
<td><strong>PRQ</strong></td>
<td>What are the impacts and requirements of a consumer-focused NPD on SCM?</td>
</tr>
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</table>
6 DISCUSSION
The previous chapter analyzed the findings and answered the research questions. The goal of this chapter is to discuss the research. The discussion is separated into three parts: general discussion, trustworthiness, and implications.

6.1 GENERAL DISCUSSION
This research started out as an investigation of consumer-focused NPD, but as the studied case company was investigated several areas of further research were revealed and the case was expanded from one single company to include 25 companies, covering a substantial part of the Swedish furniture wholesalers. The case study has to this date revealed far more findings than what is presented in this thesis. The questions, the purpose, the framework, the theory, the empirics, and the case have evolved during the research journey.

Even though the theoretical framework is presented in the beginning of the thesis, it has evolved during the research process. The framework has both been a tool to understand the studied phenomenon and is a result of the research. The theoretical framework has enabled interpretation of the findings and understanding the studied phenomenon from a chain perspective, as well as separating the demand creation processes from the supply chain processes.

6.2 TRUSTWORTHINESS
Lincoln and Guba (1985) argue that trustworthiness is the main issue that needs to be considered when evaluating qualitative research. Trustworthiness is based on the researcher’s ability to persuade the audiences. Since trustworthiness is related to the reader’s perception of the presented research it is individual to each reader and cannot be determined prior to reading the research. The trustworthiness section was placed at the end of the thesis to allow the reader to form an opinion of the research before presenting the efforts devoted to increasing the trustworthiness.

Four criteria for trustworthiness are proposed: credibility, transferability, dependability, and conformability. Credibility is considered most important and is divided into seven activities: prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, referential adequacy, and member checks. Research is not usually strong in all criteria, and some criteria may even be bypassed (Lincoln and Guba, 1985). The criteria are discussed with regards to this research starting with the seven activities of credibility.

6.2.1 CREDIBILITY
Prolonged engagement deals with being involved in the empirical setting long enough to understand the context in which the phenomenon is being studied and persistent observation deals with reaching sufficient depth in the research. The first interaction with the case company was in 2007 and the PhD studies were initiated in the summer of 2009. Hence, there has been an involvement with the empirical field for four years when writing this thesis. During the PhD studies there has been unlimited access to the case company and good access to other actors active in the Chinese and Swedish furniture industries. Several crossroads has appeared during the research, which is said to be a result of persistent observations.

Triangulation is the activity of crosschecking data to ensure a true picture. Flick (2009) suggests four types of triangulation: data, investigator, theory, and methodological. Further, Dubois and Gadde (2002) stress the importance of using multiple sources to reveal new aspects previously unknown to the researcher. Data triangulation has been used to crosscheck
data, but also to reveal new aspects of the studied phenomenon, investigator triangulation has been done with a senior colleague, who has experience with the case company, theories have been triangulated as the framework has evolved during the research, and methodological triangulation has been used as the same phenomena has been investigated using different approaches.

Peer debriefing is the activity of exposing the researcher and the research to a disinterested peer with the purpose of exploring aspects of the research that may otherwise remain implicit within the researcher’s mind. This has been done informally during the course of the research as activate attempts has been made to engage research colleagues with different research frameworks, theories, and approaches in discussions about the research. During the discussions there have both been opportunity to justify research actions and choices and insights to the research and the researcher that have impacted the continuation of the investigations.

Negative case analysis is to revise the hypothesis with hindsight. Since the purpose has not been to test hypothesis this activity has not been performed. However, throughout the research the reciprocation between the frame of reference, the empirical world, the case, and the theory has questioned the assumptions and findings, which has led to deeper insights and reformulated assumptions all along the research journey.

Referential adequacy is the activity of keeping some of the data raw to facilitate the findings to be revisited. The quantitative data used in the research is stored in each step of its treatment. Qualitative data have been stored in the form of manuscripts. Models that are based on the research setting (e.g. Figure 1-3, and Figure 1-4) have evolved from simple to complex models, which all have been shown to and updated with the help of informants at the case company. It is therefore hard to distinguish what is raw data, but all models are stored.

Member checks is the activity of allowing informants to review the data. As mentioned in the section above informants have played an important role in updating models. Moreover, the informants at the case company has continuously been presented with findings, engaged in discussions, and allowed and asked to review the data and findings and provide more data.

6.2.2 Transferability
Transferability is the ability to provide a thick description that allows someone interested to determine if a transfer of the findings is possible. In this single-case study it is related to if the findings are transferrable to other contexts. A rather extensive report on both the case company and the research have been provided. The research has not been striving for transferability on a statistical level, rather a theoretical level. The events that have been investigated are therefore possible to transfer to other contexts, but first and foremost to research focusing on value creation and the relation between demand creation and SCM.

6.2.3 Dependability
Dependability is related to examining the research process. In order to fulfill this criterion a rich description of the research approach is provided in Chapter 3. The research is presented in a structured way allowing the reader to follow each step of the reasoning process. Additionally, all the stored data and models acquired and made during the research are still available if anyone would feel the need to further probe the research process.
6.2.4 Confirmability

Confirmability is related to assessing the product of the research and the consistency between theory, framework, data, and findings. As mentioned several times before, the research process has been reciprocation between the frame of reference, the empirical world, the case, and theory. This has resulted in theory that matches the empirical findings. Several of the models that are developed or adjusted in the later parts of the thesis are presented in chapter 2, Frame of Reference. Unlike an academic paper the thesis also allows the researcher to give more thorough explanations, enabling the reader to assess the final product.

6.3 Implications

The main practical implication is that a new business strategy should not be implemented based solely on demand creation. Managers need to consider supply chain capabilities before adopting new demand creation processes. There are two main reasons: firstly to be able to support the new demand creation strategy, secondly to be able to increase the value creation through a symbiotic relationship between demand creation and value creation. The importance of the capabilities of the supply chain also addresses the importance for a focal company to consider value creation a joint effort by the supply chain, not a quest for an isolated entity. Despite involving external forces during NPD, the case company has failed to recognize the importance of production capabilities to produce the value expected by the consumers and the importance of retailers to inform the consumers of the value of the products. Depending on the product it is likely that the role of the supply chain partners will vary. If the product is aimed towards a consumer segment preferring low cost, it might be beneficial to form alliances where it is possible to minimize costs, while innovative products seem to rely on alliances where information distortion is minimized. The reasoning is congruent with previous research on supply chain taxonomy (Christopher, 2000; Christopher et al., 2006; Fisher, 1997; Mason-Jones et al., 2000B).

The main theoretical implication is that even though existing taxonomies for supply chain selection is a good starting point when matching strategy with supply chain, there is a need to also consider the supply chain’s potential to influence the consumer perceived value of a product. Information distortion in demand pull and demand push, and the revised value gaps model are two tools that may be beneficial to map and understand and theorize where consumer perceived value may be reduced, and guide how supply chains should be developed to increase consumer perceived value.

In order to reduce and manage value gaps and to increase the performance of the newly developed innovative products, three solutions have been discussed with the case company as the research has come to its end. The solutions are not considered mutually exclusive, rather complementary. The three solutions are increased branding, differentiated retailer strategy, and better information to retailers. Increased branding could result in consumers demanding the distributor’s products, which decreases the importance of the retailer being aware of the products’ benefits. Retailers, however, might not welcome this solution, as it diminishes their role in the supply chain. The solution is also contrary to how several stores nowadays are trying to promote their own brands, e.g. Clas Ohlson with CoTech, Ica with Ica Selection, and Stadium with SOC. A differentiated retailer strategy would select innovative products to only be sold at retailers who are able to communicate the value of the products to the end consumer. This solution carries a risk of lost sales, as retailers that do not understand the true value of the product still are likely to generate some sales on the products which might be necessary to reach desired volumes to better manage sourcing and inventory. Increased information to all retailers is possible with e.g. brochures, the Internet, and education. Still, it
is not likely that a distributor with 400 retailers is able to spread information to all retailers as good as necessary. Branding and information efforts may also be seen as attempts to change the nature of the value from obscure to obvious, which would decrease the need to collaborate with retailers in order to reduce value gaps.
7 CONCLUSION

The previous chapter discussed the research, its trustworthiness, and its implications. The goal of this chapter is to present the contributions of the research, for researchers as well as practitioners, and to present venues for future research.

7.1 CONTRIBUTIONS

The thesis has contributed to the understanding of how a consumer-focused NPD affects SCM. Consumer-focused NPD is likely to generate products with demand characteristics different from products developed using conventional methods, and thus require different supply chains. Ways to configure the supply chains are proposed by existing literature on supply chain taxonomies. However, as is evident in this research the products may have requirements that go beyond the supply chain’s ability to be responsive or cost-efficient. Manufacturing units also need to understand, or be able to cater to, consumer expectations, and turn consumer insight into product offerings. If not, consumer perceived value might be reduced. Likewise, if retailers, independent from the company designing the product are in charge of the consumer sales, it is of utmost importance that the retailers are able to understand the innovative value of the products. If so, they can contribute to value creation, by reducing information distortion, and informing the consumers of the value of the products.

The thesis has also contributed to theory by using the service quality model to understand how value gaps are related to innovative NPD. Since the company responsible for NPD does not undertake many of the performed tasks, the model has also been applied to and modified for a supply chain. A gap between delivered value and perceived value has been added to the model to stress the fact that the delivered value might not be the same as the value perceived by the consumer.

Besides using value gaps to understand value creation in supply chain the thesis has also included NPD methods focused at understanding implicit consumer needs. Thus, linkages between empathic design, consumption chain mapping, and SCM have been established. Moreover, the research has been able to present these theories in action, their relation to sourcing from China, their potential impacts on inventory management, and how they are dependent on several companies in the supply chain to maximize their effectiveness.

The “nature of the value offering and level of collaboration” matrix (Figure 5-4) is both a practical and theoretical contribution. For a practitioner it illustrates how product value is affected by the level of collaboration, and could therefore be used when devising or reviewing strategies. The theoretical contribution is an extension of already existing classification schemes for matching products with supply chains focusing on the retention of value in downstream alliances.

A practical contribution is the need for better performance measures in order to monitor and improve the performance of products. In the researched industry the retailers’ estimation of product success is arbitrary. Moreover, the distributors consider the number of display pieces at the retailer to be the most important area to improve. However, the research has highlighted that there are several measures that might be of importance, such as personal relations and subjectivity of the sales personnel. Prior to this research there was no data that showed sales performance in the furniture industry. The data is an empirical indication that demand
creation must be undertaken jointly with the whole supply chain to fulfill the potential of the gathered consumer insight.

7.2 Future Research

A differentiated approach to demand creation and supply chain management seems to be necessary, in order to reach the full potential of the consumer-focused business strategy. For the case company this would most certainly include sourcing from Europe, or increased in-house manufacturing capabilities. If more than one sourcing country is used it may induce problems with color matching and quality control, and if internal capabilities are increased it may require more employees. There are already several Swedish wholesalers, who source products from Sweden, the Baltic countries, and Poland; and studying their annual reports to a greater depth may reveal potential economical benefits of sourcing closer to the consumption market.

It is already indicated that the retailers play an important role. Beside the findings presented in this thesis several performance measures have been discussed with both the case company and retailers. A demand creation strategy including the retailers needs to consider the retailers’ incentives to collaborate, and how the collaboration should be undertaken. Retailers that collaborate with the case company form a strong alliance that seems to be a key to competitive advantage, and the same logic may be applied to manufacturers. Unique competences generating superior consumer value might be the output, if selected manufacturers and retailers are included in demand creation to create strategic alliances. The issue is also interesting to investigate in supply chains, where the same company has control over both wholesale, NPD, and retail.

One business that is similar to the furniture industry, but where companies control wholesale, NPD, and retail is clothes companies using distance selling. Nowadays distance selling is conducted using the Internet, but it has historically relied on catalogs. The space in the catalog might offer the same issue as the haggle for placements in the furniture industry. Focusing on distance selling has the potential to give insights to how obscure product value should be managed, or how the value can be made obvious. If research is conducted at large clothing companies, or companies with special demands on fabric quality, insights to manufacturing and sourcing management could be gained.

The consumer segmentation model used by the case company is also interesting for creating differentiated approaches to maximize perceived consumer value. The case company has only differentiated the design styles, but there are several additional differentiation opportunities, e.g. manufacturing location, leadtimes, level of customization, and retail methods and partners.

One topic not discussed at all in this thesis is how the supply chain and pricing model are related. Each actor in the supply chain is in it for its own gain. During the last years the prices have increased, while the demand seems to have decreased. However, it is well known within economics that increased prices result in decreased demanded quantity. The relation between the two is dependent on the price elasticity of demand. The pricing model for the supply chain, over which the case company has great influence, determines the increase in consumer price.
REFERENCES


