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PhD in Logistics and Supply Chain Management – XXIII Cycle

MANAGING EXCLUSIVITY AND AVAILABILITY OF FASHION PRODUCTS: A SUPPLY CHAIN PERSPECTIVE

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Executive Summary

This research starts from the statement that, given a certain industry, a company should choose the right and proper supply chain to operate successfully in that business. Differences from industry to industry underline the need for a company to make the right supply chain decisions, related specifically to SC configuration and management (Stonebraker and Afifi, 2004). Differences within customers needs in different market segments can determine different company priorities within its supply chain key factors and, hence, the need to make coherent supply chain strategy decisions.

Rooted in a deep analysis of supply chain related literature (Chapter 1) and an extended analysis of fashion related literature, fashion market and existing fashion supply chain models (Chapter 2), the aim of this research is to provide a support to fashion companies in choosing the appropriate supply chain strategy according to the fashion exclusivity content or fashion availability content of products they produce.

Fashionable products, due to their intrinsic nature, are characterized by unpredictable demand. Hence, specific supply chains are faced with the situation where they have to accept uncertainty but need to develop a strategy that enables them to still match supply and demand (Christopher and Towill, 2001). Moreover, research shows that fashion products can vary substantially one from another in terms of life-cycle duration, variety, innovative content, materials, occasions of use and so on. Due to these reasons, this thesis presents several fashion supply chain approaches developed so far by researchers, namely physically efficient vs. market response, quick response (QR), fast fashion, postponement, lean, agile, and "leagile" (Fisher, 1997; Childerhouse and Towill, 2000; Waddington, 2002; Christopher et al., 2004; Chopra and Meindl, 2007). These approaches are mainly based on the analysis of a set of several different operations and logistics criteria, such as demand predictability, forecasting, lead times (manufacturing and delivery), replenishment, inventory, suppliers' selection and management, product life cycle, and product variety. However nowadays, referring particularly to fashion products, in order to formulate a coherent and aligned supply chain strategy for fashion companies, it is necessary to enlarge the set of criteria analyzed, because an analysis based exclusively on operations and

logistics criteria gives a partial picture. Generally speaking, the emotional factors got more and more importance, as today customers are looking for goods characterized by reliable performance, quality, stylish details, and, in some cases, they want also to be involved into a complete experience of shopping. So, in order to be able to formulate a fashion supply chain strategy based on a wider perspective, other elements have to be researched through marketing literature analysis. Particularly, within this research thesis a literature review is conducted among luxury products' academic contributions and studies. The choice of exploring luxury marketing literature is based on the fact that luxury and fashion markets show major similarities in their evolution path (Crane, 1997; Fernie et al., 1997; Nueno and Quelch, 1998; Jones and Hayes, 2002; Priest, 2005; Hayes and Jones, 2006; Okonkwo, 2007; Thomas, 2008), thus allowing a consistent comparison. Particularly, according to Caniato et al. (2009), it is possible to identify a set of attributes (from one to five) and factors (from six to eight) that characterize luxury products:

1. products premium quality;
2. exclusivity;
3. lifestyle;
4. design and style;
5. uniqueness;
6. brand global reputation;
7. craftsmanship;
8. association with a country of origin.

These identified attributes and factors, both referred to luxury products, could be brought back to two main products' categories, identifying the trade-off between luxury "exclusivity" and luxury "availability" (Catry, 2003; Dalton, 2005). The similarities in the evolution path between luxury and fashion products, may allow to borrow the set of key factors and the segmentation between "exclusivity" and "availability", used for luxury products, and to apply them to identify and categorize fashion ones.

The introduction and adoption of a new segmentation is due to the fact that both supply chain and fashion literatures developed so far do not take into consideration the supply

chain strategies that could be adopted by a company, considering how the customer perceives the product, its *allure* and the mix of its attributes and factors. In other words, how the company should develop and align its supply chain strategy based on the fashion exclusivity or fashion availability of its products. So, the research aim is pursued through two specific objectives defined in terms of two propositions (Chapter 3):

P1. In the fashion industry the SC model applied by the focal company depends on four areas of competences: design activities, sourcing/purchasing activities, manufacturing activities, distribution activities.

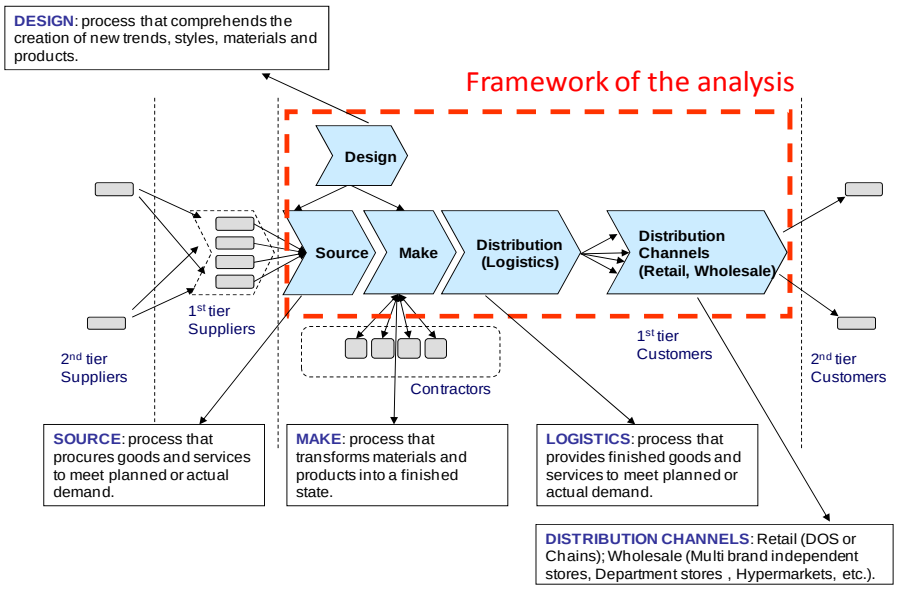
P2. The formulation of a supply chain strategy, which is the result of how design, sourcing, manufacturing and distribution activities are structured and managed, depends on the fashion "exclusivity" content or fashion "availability" content of products the focal company produces.

Hence, the first scope of this research is to point out, through a detailed literature review, that supply chain models developed so far are not comprehensive and, due to the peculiarities of fashion products, cannot be applied without a change in perspective. Then, the main activities performed by a fashion company within its supply chain are investigated through an in-depth analysis of a single case study (P1). Moreover, the in-depth case analysis is used to build the research framework and to identify the set of key drivers that will be used to run the multiple cases analysis. In fact, finally, a specific supply chain management strategy framework will be sharpened through a multiple case studies analysis (P2).

Chapter 4 describes the in-depth analysis of the supply chain business model applied by Zara, a clothing manufacturing and retail company operating worldwide. The analysis has been conducted through company visits and interviews done during the semester spent at the Zaragoza Logistic Center (August-December 2008), within the PhD program. Moreover, company annual reports (from 2006 to 2009), company web site, cases and articles (Ferdows et al., 2004; Ghemawat and Nueno, 2006; Mcafee, Dessain and Sjoman,

2007) has been study since 2006, both for research projects as well as teaching activities. Moreover, another reason that justifies the choice of Zara as single-case study refers to the fact that this case is a representative one and allows capturing and describing the characteristics of other firms operating in the same industry (Yin, 2004). In fact Zara, which originally was a manufacturing company, had the ability over time to "control what happens to its product until the customer buys it and has developed a super-responsive supply chain" (Ferdows et al., 2004). Finally, as Yin argues (2004) this "single-case study can be used as a pilot case that is the first of a multiple-case study".

Through the in-depth analysis of Zara cases, it's possible to conclude that the supply chain model applied by a fashion focal company could be represented and described through the analysis of four main areas (P1). Particularly, these four areas of interest are: design activities, sourcing/purchasing activities, manufacturing activities, distribution activities (logistics and distribution channels). Starting from this result (P1), paragraph 4.2 highlights the main aspects and peculiarities that characterize SC activities run in a fashion company. Moreover, through this case analysis a general framework of investigation is designed (see following figure), providing a specific description of the research domain and its key drivers.



Source: elaboration by the author.

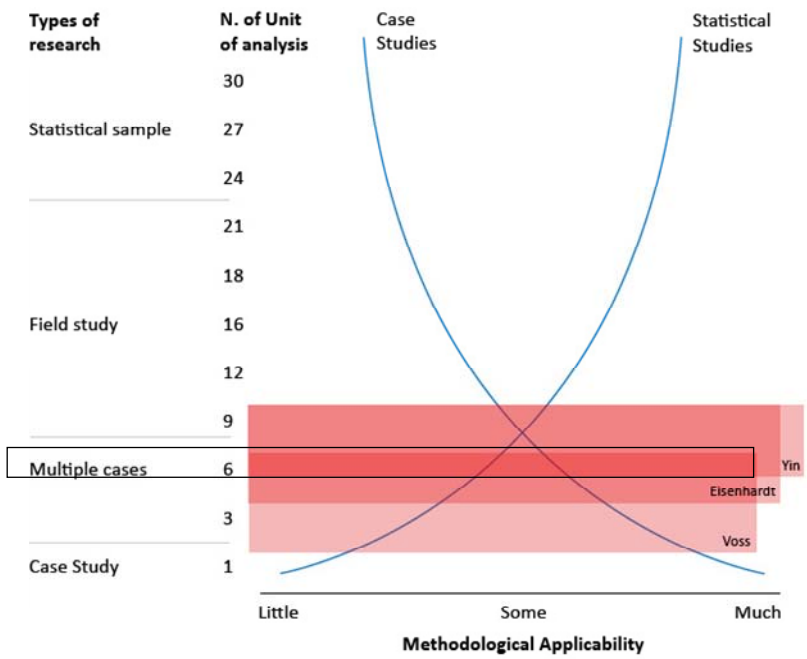
To better explain this conceptual framework, it was developed a list of key drivers that allow the analysis of the supply chain strategy and structure adopted by different fashion companies. These key drivers, listed as following, were held constant during the study and were investigated in a set of cases.

Upstream and downstream supply chain key drivers

Design	**Sourcing**	**Manufacturing**	**Logistics and Distribution channels**
"Trend setter" or "trend follower" strategic approach.	Make or buy mix approach.	Make to order vs. make to stock approach.	Polarized vs. decentralized distribution center.
Degree of exclusivity (style, brand image).	Purchasing to stock vs. purchasing to order approach.	Automation vs. specialized craftsmanship.	Retail vs. wholesale approach
Design lead times.	Types and quality of raw materials.	Location of the manufacturing activities.	Store location.
	Sourcing lead times.	Manufacturing lead times.	Service level.
IT intensity			

Source: elaboration by the author.

In order to choose the number of cases to be analyzed and studied in the research project, literature on operations case studies methodology has been reviewed. Based on literature analysis (see following figure) six cases has been investigated.



Source: adapted from Meredith (1998).

According to Brun and Castelli (2008), the sample of companies involved in the research is non-randomly selected indeed a theoretical sample is built. In fact, according to Eisenhardt (1989), theoretical sampling can be more effective in order to have a sample that represents different types of companies. Moreover, as suggested by Brun and Castelli (2008), as regards the criteria for sample selection, the approach used by Moor et al. (2000) has been adopted in this research. The approach indicates the following characteristics for identifying companies for case study in the fashion industry:

- Company must have an international profile in the fashion industry.
- Their brands have to be established in the fashion business for at least two years.
- They have to market their own label merchandise.
- They have to do it through stores bearing the designer's name or an associated name and/or within other stores, within two or more countries.

The sample includes both large and small/medium firms. The companies were selected in order to cover the two segments proposed in the thesis, namely "exclusive" fashion and "available" fashion products. In order to analyze different contexts, a broad variety of products was considered, including textile, apparel, footwear and accessories (eyewear and hand bags). The choice of a heterogeneous sample is due to the purpose of exploring different choices in terms of SC strategy and management in both segments, exclusive and available. Moreover the replication technique was used in the selection phase (Yin, 2004) in order to obtain contrasting results but for predictable reasons (theoretical replication).
Information were collected in the six firms using semi-structured interviews to company managers, company visits, published case studies, company web sites, financial reports, articles and other documentary analysis.
The following table shows the sample used for case studies in proposition number two.

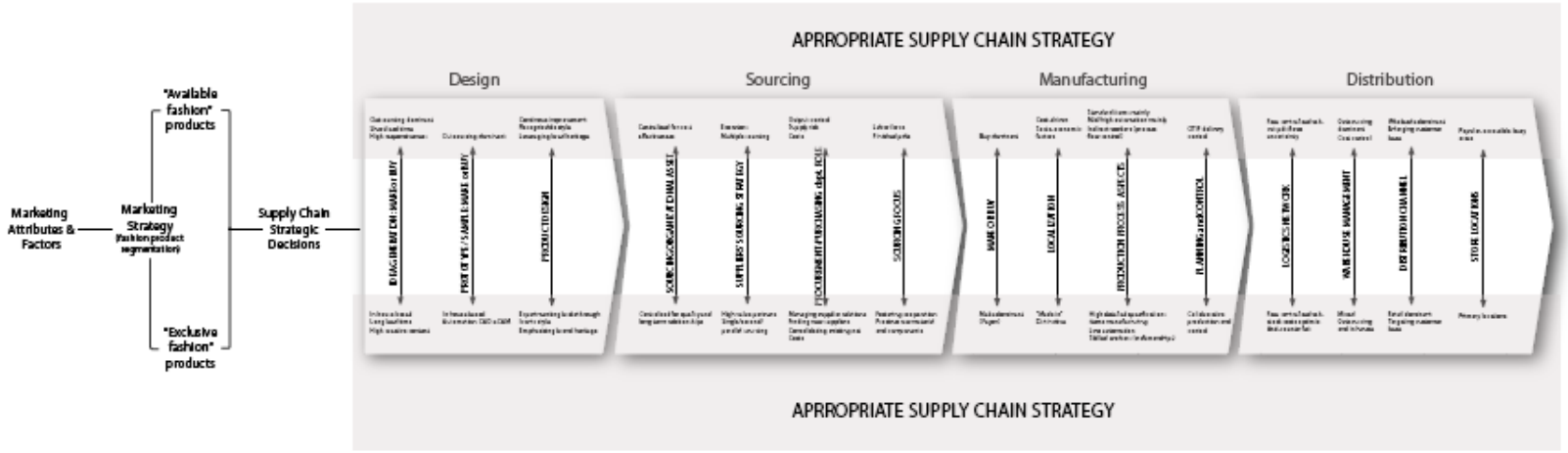
Company name	**Main Fashion Products**	**Fashion type**	**Products segment analyzed in the case**	**Employees**	**Turnover (mln)**
Loro Piana	Textile and Apparel	Exclusive	Fabrics, men's and women's clothing	2,228	394 €
Luxottica Group	Eyewear	Exclusive	Sunglasses "Ray Ban"	60,767	5,094 €
Gucci Division	Leather goods, apparel, footwear	Exclusive	Leather goods (hand bags)	>7,000	2,266 €
Basicnet	Apparel, footwear and accessories for sport	Available	Sportswear "Robe di Kappa" e "K-way"	344	154 €
Polo Ralph Lauren Corporation	Apparel	Available	Apparel "Polo" by Ralph Lauren	17,000	5,018 $
Adidas Group	Apparel, footwear and accessories for sport	Available	Footwear "adidas"	39,596	10,361 €

Source: elaboration by the author. Data source: Bureau Van Dijk Electronic Publishing – AIDA, 2009.

The analysis conducted through multiple case studies shows that supply chain strategy should be tailored in order to pursue objectives that substantially differ from one segment to another (available vs. exclusive) (P2). Particularly, a set of SC strategic decisions could be identified for each area of interest. Finally, a framework has been designed in order to measure the coherency between the SC strategic decisions made by a fashion company and the segment its products belong to.

The following figure shows the model that will be deeply analyzed in Chapter 6.

Supply chain strategy framework.



Source: elaboration by the author.

Chapter 1

The relevance of Supply Chain Management

1.1 Supply Chain Management in the academic literature

According to Harland (1999) supply chain (SC) can be considered as an extension and an evolution in terms of competitive goals, structure and infrastructure of the frameworks that characterized the Manufacturing and Operations Strategy theory developed by Skinner (1969), Hayes and Wheelwright (1985).

The definition of "supply chain" seems to be more common across authors than the definition of "supply chain management" (Cooper and Ellram 1993; La Londe and Masters 1994; Lambert, Stock, and Ellram 1998). Particularly, La Londe and Masters (1994) proposed that a supply chain is a set of firms that pass materials forward. Normally, several independent firms are involved in manufacturing a product and placing it in the hands of the end user in a supply chain: raw material and component producers, product assemblers, wholesalers, retailer merchants and transportation companies are all members of a supply chain. According to Christopher (1992) a supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services delivered to the ultimate consumer. Moreover, Mentzer et al. (2001) define a supply chain as "a set of three or more entities (organizations or individuals) directly involved in the upstream or downstream flows of products, services, finances and/or information from a source to a customer". This definition can be broadened by choosing the number and kind of firms we include. A direct supply chain consists of a focal company (Lambert et al., 1998), a supplier and a customer. An extended supply chain adds the supplier's supplier and the customer's customer to the chain. An ultimate supply chain, finally, includes further supplier and customers (until the

end customer), as well as other firms linked to the supply chain (such as third-party logistics providers, insurers, carriers, financial companies, etc.).

Based on the definition of SC it is possible to define what SC management is. According to Jones and Riley (1985) "supply chain management deals with the total flow of materials from suppliers through end users". Houlihan (1988) notes that "supply chain management calls for, and in the end depends on, strategic decision making. "Supply is a shared objective of practically every function in the chain and is of particular strategic significance because of its impact on overall costs and market share... [with SC management] a new approach to systems is required: integration rather than interfacing". Stevens (1989) argues that "the objective of managing the supply chain is to synchronize the requirements of the customer with the flow of materials from suppliers in order to effect a balance between what are often seen as conflicting goals of high customer service, low inventory management, and low unit cost." Moreover, according to Monczka, Trent, and Handfield (1998) supply chain management is a concept, "whose primary objective is to integrate and manage the sourcing, flow, and control of materials using a total systems perspective across multiple functions and multiple tiers of suppliers." SC management can also be defined as "the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customer and other stakeholder (Cooper et al, 1997) and its purpose is to "remove communication barriers and eliminate redundancies" through coordinating, monitoring and controlling processes (Kaufman, 1997). Mentzer et al. (2001) define it as "the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole". As a matter of fact, SC performs two different types of functions: a physical one and a market mediation function (Fisher, 1997). A SC's physical function is readily apparent and includes converting raw materials into parts, components, and eventually finished goods, and transporting all of them from one point in the SC to the next. Less visible, but equally important, is the market mediation. Its purpose is ensuring that the variety of products reaching the marketplace matches what consumers want to buy. That's

why the strategic nature of adopting a supply chain wide perspective, on the one hand provides significant potential benefit, and on the other requires trading partners to think and act strategically (Power, 2005). For any specific organization the main goal of SC management is the creation of revenues in order to survive and, if possible, increase market share. In order to create revenues a company and all SC actors must provide products and services to customers thereby generating sales income. Therefore the main goal of SC management must be to satisfy final customer needs and requirements (Childerhouse and Towill, 2000).

While a supply chain consists of a number of actors and members (such as suppliers, manufacturers, distributors and customers), its effective management requires integration and sharing of information and material flow through these partners from source to user (Samaranayake, 2005). The integration of supply chains has been described by Clancy as "attempting to elevate the linkages within each component of the chain, (to facilitate) better decision making [and] to get all the pieces of the chain to interact in a more efficient way [and thus] create supply chain visibility [and] identify bottlenecks (Clancy, cited in Putzger, 1998, p. 55).

Over the last twenty-five years, a view that recognizes that the route to competitive advantage lies through the supply chain has emerged (Christopher and Towill, 2002). Indeed, it has been suggested that "supply chains compete, not companies" (Christopher, 1992). There is a wide agreement on the nature and the effects of the major economic trends of the last two decades: consumers' needs evolution – customers require a higher number of innovative and customized products in small quantities, with high quality and high service level and in an unpredictable way, markets' globalization and high level of outsourced activities.

In this time of changes and increasing competition, SC management emerges as fundamental for a company to remain competitive in a context where most activities are outsourced and the interaction of multiple actors is critical to ensure the delivery of products and services to the customers (Stevens, 1989). Because of the complexity of today supply chains, the way in which relationships between organizations in a supply network are structured and managed can make the difference between profit and loss (Christopher

and Towill, 2002). These relationships among different actors of a SC are characterized by a different level of information sharing. Yu et al. (2001) distinguish three levels of control of information in a supplier-retailer dyad. The first, decentralized control, is the situation where the only information conveyed by the retailer to the supplier is its order. Both partners make their inventory decisions independently from one another. In the second case, coordinated control, the retailer sends the order but also shares data about final customer demand. Thus the supplier has more information available to make the inventory decisions. In the third level, centralized control, the supplier is directly linked to the retailer and to final customer demand through an EDI system. The supplier can also take over the retailer's inventory decisions through VMI (vendor-managed inventory). All inventory decisions will be based on final customer demand. According to Yu et al. (2001), moving from level one to two will bring major benefits for the supplier by reducing its inventory levels and costs. Moving further to level three will increase these benefits, while at the same time also reducing the retailer's inventory levels and costs (because of VMI). All these improvements are Pareto-efficient, i.e. no further improvement for one partner can be achieved without reducing the benefits of the other partner. Thus, overall the supply chain is most effective when all supply chain partners can immediately access information about final demand and inventory decisions can be taken collectively (or "centrally"). Even limited information sharing is beneficial according to Yu et al. (2001).

1.2 One supply chain doesn't fit all needs

Modern day marketplaces are highly varied and despite the attention given to new technologies and to the need of improving SC efficiency and responsiveness, in many cases SC performances are not so high and failures in SC management are still not uncommon in today's industries (O'Brien and Li, 1999).

Fisher (1997) argues that this phenomenon is due to the mismatch between product types and SC strategies. As a result of the research, Fisher developed a framework that helps managers to understand the nature of the demand for their products and devises the supply chain that can best satisfy that demand. Based on several different aspects, for example product life cycle, demand predictability, product variety, and market standards for lead time and services, products can be classified into two main categories: "functional products" or "innovative products". Functional products have small demand variance and low profit margin. They satisfy basic need, which do not change much over time, they have long life cycle and are characterized by a predictable and stable demand. On the other hand, innovative products can guarantee high profit, have short life cycles, great variety and unpredictable demand. Then, SC strategies are classified as "physically efficient" if their processes are focused on satisfying a predictable demand in an efficient way and at the lowest cost, and "market-responsive" if their processes aim at providing quick response to unpredictable demand. For example, Christmas tree decorations have a very seasonal consumer demand, while lap-top computers have very short product life cycles coupled with high levels of innovation. But in both cases responsive supply chains are necessary in order to react to demand fluctuations.

Within the same industry products can have different characteristics and can need different SC approaches. Let's consider, for instance, the food industry. Generic food types, such as pasta or cookies, have long product life cycles and a relatively stable demand. In this case a more efficient SC should be implemented. On the contrary, different types of food products, such as milk or dairy products, are still characterized by a relatively stable demand but need a reactive and quick SC due to their limited life cycles and their perishable contents. Within the apparel industry, we can compare two different products:

black socks and ski jackets. Black socks are functional products, with long life-cycle duration, low variety, low margins and reasonably predictable demand therefore forecasting errors are low and a the SC can focus on increasing efficiency levels. In comparison ski jackets are innovative products, with a very short product life cycle, high variety, greater margins and high demand unpredictability therefore SC should focus on the ability to satisfy quickly all different customers' needs.

So, as said, customer requirements are diverse for different types of products and range enormously from one market sector to another.

Particularly, companies that supply functional products are free to focus mainly on minimizing physical costs thanks to the fact that a predictable demand allows the match between supply and demand. Moreover, these companies can adapt and implement manufacturing-resource-planning software to align the ordering, production and delivery of supplies. This enables the entire SC to minimize inventory and maximize production efficiency.

On the contrary, unpredictable demand increases the risk of shortages or excess supplies, as well as short product life cycles increase the risk of obsolescence and the cost of excess supplies. Thus, the main goal of market-responsive SC is to respond quickly to unpredictable and unstable demand in order to minimize stockouts, forced markdowns and obsolete inventory. In a market-responsive SC, the critical decision is no longer related to costs minimization, but is about where in the chain to position available production capacity and inventory in order to react against uncertainty.

Fisher's conclusion provides a significant framework for establishing suitable SC management strategy under particular operational environment.

However, to sort different products into categories related to appropriate supply chain management strategies, companies have also to face production planning problems and have to make quantitative operational decisions. That's why Li and O'Brien (2001) investigate, through a multiple objective optimization model, the impacts that some operational parameters (such as value adding capacity, demand uncertainty, and material costs) have on the manufacturing and SC strategies. Their research shows that when demand uncertainty is low, a "physically efficient" model based on a "make to stock"

approach performs better. On the other hand, as soon as demand uncertainty increases a "market responsive" process, based on "make-to-order" approach, as well as a "physically responsive" process, based on a "make-from-stock" approach, perform better. Through the result of such analysis, it's clear that none of the three typical SC strategies performs the best at all times. Moreover, products characteristics and priorities change during products' life cycles go through. During each stage of a product life cycle (introduction, growth, maturity, saturation and decline) customer requirements dynamically change. As a consequence, supply chain strategies must be dynamically matched so as to maximize companies' competitiveness (Aitken et al., 2003).

Given the increasing demand for product variety and according to a market-oriented view, companies do not face a single-demand pattern but cope at the same time with a set of market demands (Heikkila, 2002; Holmstrom et al., 2000; Lee, 2002). Hence, companies should reasonably apply different SC strategies in order to satisfy different demand patterns (Fisher, 1997; Sharifi and Zhang, 1999; Lee, 2002). Such differences mainly emerge in terms of target performances of the SC, which therefore affect the related SC decisions, e.g. in terms of productive capacity allocation, inventory policies, geographic dislocation of suppliers and points of sale, positioning of the decoupling point (Brun and Fahmy Salama, 2004) and the ease of synchronizing the various processes along the SC (Brun and Castelli, 2008). Furthermore they should be considered when defining whether the most suitable SC management strategy is efficiency oriented or it should pursue a high level of reactivity and flexibility (Fisher, 1997; Li and O'Brien, 2001).

It is clear that all products have different customer requirements and therefore cannot be serviced effectively by a single SC paradigm. In all cases SCs must be integrated and operate in a seamless manner (Towill, 1997), but also must be tailored to specific consumer requirement. In conclusion, globalization of SC, customers' requirements, products' different nature imply in terms of SC that is not possible to serve everybody with everything via a single all-embracing SC strategy because in supply chains "one size does not fit all" (Fuller et al., 1993; Shewchuck, 1998). Supply must be matched to demand in order to maximize customer service and satisfaction and hence engineer global supply chains that maximize marketplace competitiveness.

1.3 Lean versus Agile Supply Chain

Supply chain serving different markets should be managed in a different way. Is it better to design a supply chain that emphasizes efficiency or that emphasizes responsiveness and flexibility? There is a trade-off between efficacy (high responsiveness) and efficiency (low costs). The different focus on costs and responsiveness gives a different SC strategic orientation. Supply chains range from those that focus mostly on being responsive to those that focus on a goal of producing and supplying at the lowest possible cost.

As analyzed in the previous paragraph, Fisher highlighted the importance of engineering supply chains to match customer requirements and he identified two fundamental types of supply chains strategy, responsive and physically efficient. "Via close examination it becomes clear that responsive strategy is akin to agility whilst lean is very similar to his proposed physically efficient strategy" (Waddington, 2002).

Naylor et al., (1999) define leanness as "the development of a value stream to eliminate all waste, including time, and to ensure a level schedule". Abernathy et al., (2000/1) developed a lean approach of the apparel industry based on the need for quick product replenishment rates. Regarding the transportation of products, it is vital to meet time restrictions and order accuracy. Systems, such as electronic data interchanging, bar coding and shipment marking are useful tools which support the above mentioned efforts.

Chopra and Meindl (2007) argue that lean or efficient supply chains are appropriate for more stable functional products and services. Efficient supply chain policies include keeping inventories low, especially in the downstream part of the network. The chain is managed to make sure that products flow as quickly as possible down the chain to replenish the few stocks kept downstream. Information must flow quickly up and down the chain from retail back to the manufacturer. In this way operations will have a higher amount of time to do all the activities efficiently. Lean supply chains have been lengthy with long lead-times and hence, of necessity, have been forecast-driven. On the contrary, agile supply chains are shorter and seek to be demand-driven because the idea of agility in the context of supply chain management focuses around responsiveness (Christopher et al., 2004).

According to Childerhouse and Towill (2000) agile supply chain approaches enable quicker variety and volume changes. Companies are able to successfully meet customer needs by responding quickly in potential market variations. This characterizes agile supply chains as market driven, being based on real time information flow among all the participants.

According to Christopher et al. (2004), lean supply chains are forecast-driven and that implies that they are inventory-based, by contrast agile supply chains are more likely to be information-based. Information technology enhances visibility across the whole pipeline and leads to efficient inventory management. In the case of processes such as product development, where there is a need for more actors in the pipeline to collaborate, information technology is a critical factor (Bruce and Daly, 2007).

Chopra and Meindl (2007) argue agile or responsive supply chains are appropriate for less predictable and more innovative products and services. The inventory in the network will be deployed as closely as possible to the customers. Fast throughput from the upstream parts of the chain will still be needed to replenish downstream stocks that are needed to ensure high levels of availability to end customers.

	Lean Supply Chain	Agile Supply Chain
Primary goal	Supply demand at the lowest cost. Cost reduction is the prime company driver.	Respond quickly to demand. Lead time is aggressively reduced even if the costs are significant.
Product design strategy	Maximize performance at a minimum product cost.	Create modularity to foster product differentiation.
Pricing strategy	Lower margins because price is a prime customer driver.	Higher margins as price is not a prime customer driver.
Manufacturing strategy	Lower costs through high utilization.	Maintain flexibility to meet unexpected demand.
Inventory strategy	Minimize inventory to lower cost.	Maintain buffer inventory to meet unexpected demand.
Supplier strategy	Select based on cost and quality.	Supplier select based on speed, flexibility, and quality.

Source: Adapted from “Supply Chain Management”, Chopra and Meindl, 2007

Creating strategic fit is all about creating a supply chain strategy that best meets the customer demand and needs and best achieves the Company performance objectives. To achieve strategic fit, a firm must tailor its supply chain to best meet the needs of different customer segments. To retain strategic fit, supply chain strategy must be adjusted over the life cycle of a product and as the competitive landscape changes.

Chapter 2
Defining Fashion

2.1 Fashion in the academic literature

The concept of fashion has been studied by several social disciplines, from philosophy to sociology, from history to management. Each of them was dedicated to a particular aspect. From a marketing perspective, for example, the reason for taking into account fashion is to understand how a brand can achieve a "premium" status (Shocker and Srinavasan, 1979) and to get into the mind of fashion consumers in order to understand their behaviour (Dubois et al., 2005). That's why marketing researches were run applying a multidisciplinary approach, aimed at understanding the role of historical, social and economic factors that influence customers' minds. From a style point of view, fashion comes out when men and women clothing begin to diverge significantly, and their shapes being transformed increasingly and rapidly. It is shared the idea of a birth of fashion in Europe roughly at the turn of the fourteenth and fifteenth century. Since the VIX century, with the emergence of bourgeoisie all across Europe, takes hold the concept of fashion as part of people's lives. With the industrial revolution, then, fashion came to the meaning which is still has in the modern society. The modern industry of fashion goods has its origins in the XIX century in Europe when, thanks to the industrial revolution, some entrepreneurs established companies aimed at creating exceptional products that represented the elitist lifestyle of the time. Due to the limited local potential growth, these companies had to expand their sales outside of the country of origin in order to reach a large customer base. This put the basis for the present-day global fashion companies (Antoni et al., 2004). Starting from the seventies, a boom in travelling took place, the fashion products' offer expanded and the distribution network grew. The eighties saw a growing exposure of fashion brands. While across the past centuries and the first half of the XX century the fashion market was properly a niche with limited access, a trend towards

"massification" was observed in recent years, both in terms of growing demand and an expansion from traditional markets (EU and US) to emerging markets, and in terms of extension of the product range towards more accessible items. Many authors agree that fashion does not actually identify a certain category of products but rather a conceptual and symbolic dimension. The ambiguous nature of the term fashion emerges when looking for a definition. The term fashion can be translated in several ways and it's hard to provide a unanimous definition of fashion, as there is not an agreed and objective interpretation of it. In the English dictionary it is referred to as the "style that is popular at a particular time, generally in personal appearance and especially in things such as clothes, hair and makeup" (Cambridge dictionary). An Italian dictionary defines fashion as "the more or less changeable usage that, deriving from the prevailing taste, is imposed on habits, ways of living, and forms of dress" (Garzanti, 1993). Devoto (1995) argues that "fashion is a universal principle, one of the elements of civilization and social custom. It involves not only the body but all the means of expression available to people". Finally, according to Wikipedia, the free online encyclopaedia, fashion refers to style of dress – but also can include cuisine, literature, art, architecture, and general comportment – that are popular in a culture at any given time. Such styles may change quickly, and fashion in the more colloquial sense refers to the latest version of these styles".

Anyway the meaning of fashion is not so clear. In the Oxford English Dictionary there are nine meanings of fashion that is considered both as a noun and as a verb. Fashion means "style, trend" but also "the manner of" and this second meaning is very close to the French expression *façon* that derives from the Latin *facere*.

French authors also argue that it is difficult to compel the word fashion in a definition. Lang (2001), argues that "fashion cannot be defined due to its variety and its inconstancy". Subject to the ambiguity that characterizes the word fashion, I'll try to identify some aspects of fashion in which there can be a certain share. Sproles (1979), argues that "fashion can be considered as a social process which creates new styles accepted by people". Fashion can also be characterized as the process of creating and promoting the most up-to-date trends. According to Christopher, Lowson and Peck, (2004), "fashion is a broad term that typically encompasses any product or market where there is the element of

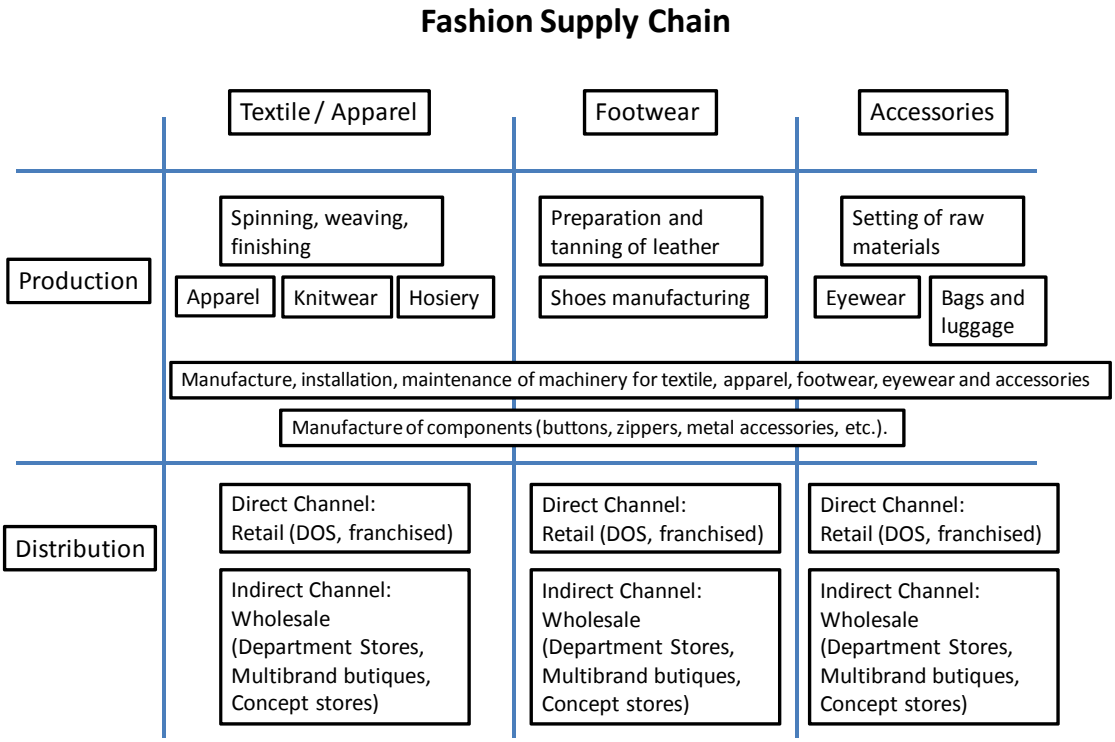
style that is likely to be short lived". However, some authors claim that there is not really any difference between fashion and style as "fashion that has no style it is always fashion" (Jackson, 2007).

Moreover, the main aspects of fashion are the need of change and innovation, the taste for the new and the abandonment of traditions. Wilson (2003) says that "fashion is the dress whose main feature is the constant change of style". According to Davis (1993), the element of rapid change is what best defines fashion and according to Konig (1988) "fashion is revealed as a structured channel to accept innovation".

In the past, the fashion industry was often regarded as coinciding with the apparel sector, which indeed is its main component (Priest, 2005). Nowadays fashion has become a cross-sector concept, which is applicable not only to the clothing industry but also to leather goods, shoes and accessories (Brun et al., 2008), as well as to perfumes, beauty care products, automobiles, mobile phones, watches, and even food (Hines, 2007; Jackson, 2007). Generally speaking, this thesis will consider fashion products (apparel, leather goods and accessories) as result of the process of creating and promoting the most up-to-date trends; and will refer to fashion products as products characterized by short lifecycle, high volatility, low predictability and high impulse purchasing (Christopher et al., 2004).

2.2 Italian fashion market

In Italy, companies operating in the fashion business are located all over the country and are organized in a logical chain of activities and therefore tend to cover all stages of product life: manufacturing, services, and trade. Within the fashion industry there are three main sub-sectors: textiles (fibers, yarns, fabrics) and clothing (underwear and outer garments and knitwear), footwear (leather, other materials) and accessories (belts, handbags, eyewear).



Source: elaboration by the author.

According to the Federation of Textile and Fashion – Italian Fashion System (www.sistemamodaitalia.com, May 2010), the turnover of the fashion industry in Italy in 2009 was 56,5 billion euro (-15% compared to 66,5 billion euro in 2008). This is the result of a moment of great discontinuity of the global economy and markets. It should also be said that the average decline in sales of 16.5% is not representative of the whole sector that

has had some big differences between the upstream industry (textiles) with a drop in sales in the order of 30% and over, and the downstream (apparel) that has held up better. Even trade with foreign countries have declined significantly, from 27 billion euro to 22 billion euro (-19.7%). Both the Textile and Apparel-Fashion are facing a very serious decline in exports, respectively equal to -23.5% and -17.5%.

Also import data for 2009 are negative, showing a variation of less intensity compared to exports, but still close to -11%. Particularly, the textile industry registered a result of -21.2%, while the Fashion Clothing is equal to 5.3%. The combined effect of trade on output and input has resulted in a significant compression of the sector trade balance, which remains largely positive, but drops to around 6.4 billion euro, marking a change in trend on an annual basis -35.6 %. The annual average intra-EU exports decreased to 17.5%. France and Germany confirmed that are the first two markets of the Italian textile-fashion. The decline in exports to France amounted to -13.3%, while to Germany to -15.4%. Decrease of more than 20% have, however, concerned the direct sales in Spain (-23.7%) and the United Kingdom (-21.9%). With regard to extra-EU, exports to Russia and the United States (both with declines of -31.7%), and to Hong Kong (-23.1%) collapsed. Even restricting the analysis to only items of fashion clothing, the dynamics are just as heavy: in Russia there has been a -31.6% for the United States a -28.6%, while Hong Kong's losses show a -15.4%. On the contrary, exports to China are not giving particular concern: although negative, are suggesting a substantial stability of Italian exports. Italian sales amounted to 370 million euro, in fact, have arrested the decline to -5.5%. This value, however, is paying all the difficulties in textile products, since in contrast, exports of fashion clothing rose by 1.4%.

Regarding the footwear industry, Italy is first shoes producer in the EU, takes the eighth place among world shoes producer and the third place among shoes exporters. Italy is anyway recognized as worldwide undisputed leader of top and luxury shoes with high fashion content producer.

Despite a utterly disappointing financial year 2009, this records shows how the Italian shoes industry is both extremely important for the Italian economy, and a pillar in the Fashion System. The success of the industry is tightly connected to a lively

entrepreneurship and a strong supply chain environment (raw materials, components, accessories, machinery, designers and tanneries). The high placement on international markets is mainly due to the higher innovation ratio and quality content of Italian products. Moreover, since only 7% on added value is generated abroad, Italian shoes are a symbol of Made in Italy branding. The industry has its strength point and distinguishing features in the creative talent of entrepreneurs and designers and their ability to innovate traditional processes. Shoes workers show outstanding craftsmanship also thanks to vocational schools; raw materials, accessories and components are technologically and stylistically advanced. The size and regional distribution of firms ensures flexibility. Understanding the favourable position, the shoes industry in Italy was affected by the effects of the world economic crisis. Orders as well as production and export volumes have suffered a sharp loss, with inevitable consequences on firms' mortality and the job market. The number of active firms has fallen to 6.028 (-3.8%); industry employees have been reduced to 82.907 (-3.5% with a 3000 units net negative balance). Internal consumption has only suffered a -1.2% loss. National shoes production has fallen from 225 to 198 million pairs, losing 12.1%, realizing €6.5 billion revenues. Production for export counts 29.5 million pairs less in 2009 with a total of 192.5. Among foreign markets, EU market has suffered a 11% shrinkage. USA and Russia markets have shown a major slow down with a value downturn of -26,2% and 35.5% respectively. Although tangible signs of trend reversal still are to come, several indicators show a loss rate slow down in the fall between 2009 and 2010 and December 2009 has shown the first positive sign before sales in the whole year. Despite the severe crisis that has characterized the industry, fashion in Italy is one of the leading manufacturing sectors in terms of business, employees and exports. It is also a sector with a high propensity towards foreign markets, which contributes to spread the "Made in Italy" worldwide. The fashion industry in Italy, as well as an old tradition, has a role of great importance for the Italian production system that's why in this thesis will be analyzed and studied from a supply chain point of view.

2.3 Fashion products' variety, lead times and supply chain approaches

After a general overview of the industry, this paragraph will present the main factors that characterize fashion products from a supply chain management perspective, namely variety and lead times. Moving on with the SC perspective, the paragraph will continue describing different SC approaches, developed so far, and adoptable by fashion companies.

As previously said, the main attributes of fashion products market are short product life cycle, high volatility, and unpredictable market. Moreover, people buying fashion products have high impulse purchasing attitudes. In fact, according to Christopher et al. (1997), a determinant factor in the fashion industry is on-shelf availability because consumer's buying decisions are made in the stores. Finally, fashion products present high seasonality characteristics and the sale period of an article ranges from months to weeks. Due to all these reasons fashion companies offer has to have a high degree of newness and attractiveness, has to be frequent – new products are continuously launched between the two main seasonal collections – and has to be characterized by a wide and deep variety. More precisely, variety refers to the number of products codes in terms of style, fabric, color and size that the prospective fashionable articles would have. So to evaluate variety, several aspects need to be considered: the total number of articles, the number of base models and their variations, the types of fabrics and the corresponding design/color variations and, finally, the sizes (Sciuccati and Varacca Capello, 1999). Moreover, each model as well as each model/fabric combination goes with a long list of elements needed in order to make the final article. Particularly, this list includes stylistic accessories (i.e., labels, buttons, linings, thread for external stitching, etc.), and technical accessories (i.e., adhesives, anchoring, shoulder pads, thread for internal stitching, etc.). These two elements together expand and increase variety.

Due to the fragmented nature of the market each collection presents a great variety to fulfill the different customer segmentations. So the collection complexity derives from decisions regarding its variety and its innovative content. Introducing innovation in a proposed collection necessarily implicates introducing new elements of complexity to manage, for instance new production methods, tests on materials, new relationships with new suppliers

and so on. Fashion companies should be able to balance innovation, in terms of novelty and exclusivity, and variety, in terms of satisfy customer demand. Companies should be aware of the degree of complexity they are capable of handling without renouncing to source for a certain degree of operational efficiency in processes related to product development, production, sales and products delivery.

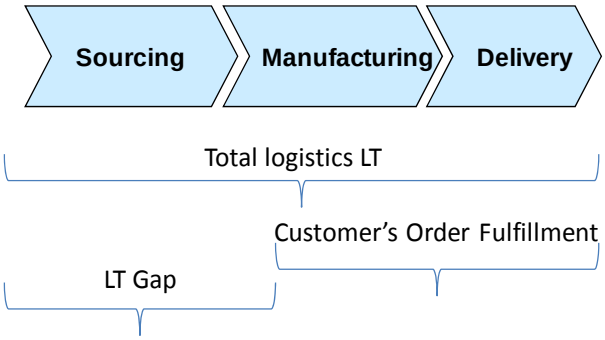
The on-shelf availability, crucial factor according to Christopher et al. because consumer's buying decisions are made in the stores (1997), implies not only a high products' variety (styles, colors, sizes) but also that products will be physically at the store, that is that supply has to meet and match demand! But, as previously investigated, demand of fashion products is highly volatile. There are several influential factors causing changes in demand and increase of volatility (i.e., weather, music icons, movies, etc.). As consequence, high volatile demand leads to a higher risk of inaccurate forecasts. According to Christopher and Peck (1997), the way to cope with uncertainty is no longer to improve the quality of forecasts. Instead, it's necessary to focus on-lead time reduction. In fact, shorter lead times implicate that the forecasting horizon will be shorter and consequently the risk of error will be lower. In the fashion industry, there are three lead times (Christopher and Peck, 1997): time-to-market, time-to-serve and time-to-react.

The so called time-to-market can be well defined by asking "How long does it take the business to recognize a market opportunity, to translate it into a product or service, and bring it to market?" (Christopher and Peck, 1997). Time-to-market refers to the speed of identifying future trends and transforming them into clothes. Manufacturing concepts move towards smaller production batches, more frequent and greater use of technologies such as CAD, EDI and bar coding (Christopher et al., 2003). Successful companies, through the use of advanced technology aim at reducing (by up to 70%) their product development time (Christopher et al., 1997; Gutgeld et al., 1995). Great examples of companies which have managed to reduce this lead time are Zara and New Look, needing only three or four weeks from designing a product until launching it to the stores (Hines, 2007; Christopher et al., 1997).

Secondly, time-to-serve: "How long does it take the business to capture a customer's order and deliver the product to the retail customer's satisfaction?" (Christopher and Peck, 1997).

Time-to-serve refers to the time needed from placing an order until it is delivered to the stores. Often, with the aim of achieving cost efficiencies manufacturing occurs in large volumes and the distribution in terms of consolidated orders. Furthermore, especially in offshore situations, a great deal of time is needed for preparing the relevant documentation. The underlying problem is that with manufacturing and shipping cost aiming at reducing the orders take place far in advance. However, the overall cost of the supply chain in terms of inventory holding in the whole pipeline, the risk of product obsolescence and related mark downs, is considered to be more important (Christopher et al., 1997).

Finally, time-to-react: "How long does it take the business to adjust the output of the business in response to volatile demand? Can the tap be turned on or off quickly?" (Christopher and Peck, 1997). This lead time is deemed to be the ability of a fashion company to capture changes in trends and respond quickly to demand requirements. Visibility of real demand across the whole chain and efficient information flow is essential for the demand driven companies. The volatile nature of the industry, being totally forecast driven, can hide many risks such as causing imbalanced inventory levels (Christopher et al., 1997). The above-mentioned information-sharing across all the units of the supply chain enables the filling of the lead-time gap. Lead-time gap refers to the fact the time that the customers could wait for a product is shorter than the time needed for sourcing, making and delivering the product (Christopher et al., 1997).



Source: adapted from Christopher and Peck, 1997.

The challenge to logistics management is to find ways to reduce, and ideally to close the gap.

The two factors presented so far, that are variety and lead times, have a strong impact on SC management because they influence some core SC activities such as operations and logistics. Based on the unavoidable constrains that characterized the fashion industry and products, such as volatility, short life cycles, demand uncertainty, time pressure and continuous products' innovation, it's interesting to understand which SC management approaches have been developed so far in order to face these challenges. In fact, over the past decades, academics and practitioners developed a number of supply chain management approaches that have been adopted by fashion companies, both manufacturers and retailers. In order to provide an overall picture about the main SC approaches developed and implemented so far, quick response (QR), fast fashion, postponement (de-coupling point), lean, agile, and "leagile" approaches will be further down analyzed.

Quick Response (QR)

Domestic manufacturers facing threats from low cost overseas manufactures have developed their activities under the umbrella of "quick response" systems with the aim of enhancing competitive advantage (Barnes and Lea-Greenwood, 2006; Birtwistle et al., 2003; Perry and Sohal, 2000). The definition of Quick Response according to Hunter et al., (2002) is the following: "A state responsiveness and flexibility in which an organization seeks to provide a highly diverse range of products and services to a customer/consumer in the exact quantity, variety and quality, and at the right time, place and price as dictated by real time customer/consumer demand. QR provides the ability to make demand information driven decisions at the last possible moment in time ensuring that diversity of offering is maximized and lead-times, expenditure, cost and inventory minimized. QR places an emphasis upon flexibility and product velocity and dynamic marketplace. QR encompasses an operations strategy, structure, culture and set of operational procedures aimed at integrating enterprises in a mutual network through rapid information transfer and profitable exchange of activity" (Hunter et al., 2002).

QR in total application involves on-line electronic communication of sales data from retailers to merchandise vendors, with the vendors promptly supplying retailers the merchandise needed to return the inventory in stores to levels previously determined co-operatively by the retailer and the vendor (Fiorito et al., 1995).

Consumers initiate the QR process as they communicate their needs and wants to the store through their purchases. Merchandise information, such as size, style, color and brand are collected through scanning bar-codes. This information is sent to the vendor via electronic data interchange (EDI) rather than the typical process of remitting a purchase order. These sales data are compared with the inventory model for the store. Production is ordered for the specific items needed to restore the inventory to the model's requirements. Notification of the expected shipping data is transmitted to the shipper and the retailer. Production orders are then transmitted to the plant where the goods are produced. The merchandise is packed and shipped to the retailer. The cycle is complete when floor-ready merchandise arrives at the store. The linkages to effect QR require extensive changes in working relationships between retailers and vendors, as well as systems changes in the links in the chain of distribution from manufacturers to consumers.

QR enables the companies to reduce inventory levels and minimize forecast errors. In a quick response system there are strong relationships in terms of collaboration and trust among all the parts of the supply chain with the aim of reducing process times. Due to the fact that QR is based primary to the demand rather than forecasts, the final configuration of the product is delayed until closer to the delivery and when more accurate information about the actual demand is available. This required an efficient partnership between the supplier and the buyer (Bruce and Daly, 2007; Hines, 2007; Birtwistle et al., 2003; Hunter et al., 2002). According to Birtwistle et al., (2006), through a QR strategy suppliers can achieve an improved and faster communication (electronic communication systems), access to sales information, shorter lead times, small batches, improved planning systems, frequent deliveries, track of merchandise, reduction of stock holding and consequently increase their profitability and competitive advantage. On the other hand, retailers can make fewer buying mistakes, reduce stock holding, track the merchandise, increased stock turn, improve cash flow, improve customer service and as a result improved their profitability and competitive

advantage. Moreover, according to Ghemawat and Nueno, (2006), thanks to the adoption of QR approaches, the development of the clothing samples could be reduced from 3-4 months to 4 hours and the operations related to the design could be reduced from 4-6 weeks to 4-6 days. The use of information technology and systems such as CAD/CAM, which are presented later, support the reduction of the time needed for developing the samples, designing and producing the clothes.

Fast Fashion

The concept of fast fashion has been developed over the last ten years based on QR principals. Recently firms such as Zara and H&M which have adopted the fast fashion approach have enhanced competitive advantages (Hines, 2007; Bruce and Daly, 2007; Barnes and Lea-Greenwood, 2006). Zara's lead times are estimated at around fifteen days and H&M and Mango have minimized their lead times to approximately three weeks. Topshop, in order to be able to compete with Zara, has reduced its lead time from nine to six weeks (Hayes and Jones, 2006; Barrie, 2004). Insights from the fashion industry indicate that fast fashion is mostly a term used by retailers whilst manufacturers refer to QR (Hines, 2007). Others claim that whilst QR concepts were developed due to increased competition from low wage overseas countries, "fast fashion" has emerged from the increased demand requirements for fast response and large product varieties (Barnes and Lea-Greenwood, 2006). The main similarity between fast fashion and QR is based on the effort of compressing the operation cycles as much as possible (Hines, 2007; Barnes and Lea-Greenwood, 2006). Regarding QR in the manufacturing field, the aim is to implement an efficient production approach by reducing the production cycle and being able to deliver the products faster to the market. Fast fashion was mainly referred to the efforts of retailers to operate at both efficient and effective levels. Efficiency is presented in terms of time compression whilst effectiveness is related to shelf availability of fashion product, with the aim of meeting demand requirements successfully (Hines, 2007). However, the major difference between the two concepts was derived from the marketing focus part of the fast fashion. In the light of fast fashion the retailers aim to encourage customers to visit stores more often by providing the latest trends faster in the market, at affordable prices and more

frequently (Hines, 2007; Barnes and Lea-Greenwood, 2006). The main characteristic of fast fashion is that the production volumes are lower than traditional ones and there is no replenishment. In doing so, the customer is urged to purchase an item in order not to miss the latest fashion trend and is encouraged into repeat purchasing frequently. In addition, retailers reduce the possibility of obsolescence. The overall goal of speed is further enabled by avoiding the use of specialized fabrics which are considered by the industry and especially by retailers as time-consuming in terms of sourcing and production processes (Hines, 2007).

Traditional supply chain approaches are more effective in stable market conditions, characterized by high predictability (Hines, 2007). As the market becomes more dynamic in terms of volatility and the production more complex (for instance offshore production-longer lead times, tariffs, special fabric purchases, additional design content) QR or fast fashion strategies are required. The major differences between traditional and fast fashion retailing are based on several features. In traditional retailing the focus is on efficiency which is achieved through managing higher volumes at the lowest possible cost; whilst in fast fashion the retailing focus is on effective response to demand, through lower volumes and the use of information technology. In fast fashion, retailers aim at shorter lead times and there is no replenishment with the aim of offering new assortments more frequently. Traditional retailers are based on forecasts prior to the selling season whilst fast fashion retailers are based on forecasts close to the selling season. The latter is enabled by the information flow from the stores back to the suppliers. For traditional retailers the lead times are longer: 12-16 weeks to get the fabric, 6-10 weeks for garment production, 2-3 weeks for shipping. For fast fashion retailers 15 days are enough for covering all the cycle (from production to the shipment to the sale points).

Postponement

The concept of the decoupling point is based on keeping inventory in modular or generic form and to complete the configuration of the final product when accurate information of the demand is known. Some fashion manufacturers and retailers redesign their production processes, particularly for those products that presented high demand variability, using this

approach. The product is held in generic form of un-dyed units and transformed as finished product when precise information of the fashion trends is available. Zara and Benetton are great examples of companies that adopt such strategy (Meichtry, 2007; Christopher and Peck, 2003; Naylor et al., 1999). Benetton, following the strategy of "piece dyeing" and exchanging information in terms of colors, styles and sizes from the retail store back to the manufacturing, was able to respond quickly and achieve delivery times of seven days (Hines, 2007). "Piece dyeing" is a process by which garments, such as the denim jeans, were produced in a raw color material and then went through a dying process. Benetton, by adopting a postponement approach, operated in more efficient and effective levels.

The advantages of this postponement are based on developing flexibility of transferring products from surplus to deficit areas and on increasing customer levels by offering what is required by keeping stable the cost associated with inventory handling (Sheffi, 2005; Christopher and Towill, 2001; Mason-Jones et al., 2000).

Lean Supply Chain

McKee and Ross, (2005) state that a lean supply chain management strategy in the fashion industry is able to develop the essential factors that could lead to a change towards an operational model characterized as more simple, efficient and responsive. Lean supply chain management refers to the extraction of all the "waste" activities, enabling effective information upstream and product flow downstream. In the light of that, the value to the end customer and supply chain partner's profitability would be increased. Lean approaches in combination with RFID technologies are the enablers for demand-driven supply chains. IT is the main component of lean supply chains which is the "wheel" for achieving synchronization and collaboration across all the actors in terms of inventory management and product development, logistics delivery capabilities and real-time information.

Agile Supply Chain

According to Christopher et al. (2004), "by their very nature, fashion markets are volatile and difficult to predict, hence the need for agility". Harrison et al. (1999), highlight a set of

characteristics referred on agile supply chains. Particularly, agile supply chains are market sensitive, because they are closely connected to end-user trends; network-based, because the supply chain gains flexibility by using the strengths of specialist partners; virtual, because sharing information across all supply chain players is needed; process aligned, due to the fact that there is a high degree of process interconnectivity between the network members. In order to bring into a play these four key dimensions and to create an agile supply chain, organizations competing in fashion industries can adopt several of practical approaches. To enhance market sensitivity, for example, the company can daily analyze point-of-sale data in order to determine replenishment requirements to make the product available. To guarantee the alignment of processes companies can adopt web-based software that enables different entities to be connected even though their internal systems may be quite different. Finally, suppliers and retailers can co-manage their inventory. It means that supplier and the customer jointly agree on the desired stock levels that need to be maintained in the retailer's operation. The customer feedback sales data is sent on a regular basis to the supplier who then uses that information to plan replenishments.
All these practices allow supply chain players to be focused on real demand and hence to be responsive to market needs

Leagile supply chain

Hybrid strategies that combine both agile and lean concepts are presented in the fashion industry. This adaptive strategy is based on the divorce between "base" and "surge" demand by placing the de-coupling point in a way that responds efficiently to volatile demand whilst efficiently planning base demand (Christopher and Towill, 2001; Mason-Jones et al., 2000). The difference between the two types of demand is based on the fact that base demand can be forecasted via historical demand data. Some fashion companies combine lean pipeline offshore in low cost countries and agile pipeline domestically, close to the market (Bruce and Daly, 2007; Gutgeld and Beyer, 1995). In the latter case the manufacturing unit cost is higher than in producing locally but the supply chain benefits are greater (Christopher and Towill, 2001; Mason-Jones et al., 2000).

2.4 Defining a new segmentation: Exclusivity vs. Availability

As previously analyzed sometimes demand uncertainty is impossible to remove due to the types of product involved. As seen, if products are highly fashionable, by their intrinsic nature, their demand will be unpredictable. Hence, specific supply chains are faced with the situation where they have to accept uncertainty but need to develop a strategy that enables them to still match supply and demand (Christopher and Towill, 2001). Moreover, research showed that, within the same industry, products can vary substantially in terms of life-cycle duration, variety, innovative content, materials, and occasions of use and so on. Due to this reasons, different SC approaches have been presented, namely quick response (QR), fast fashion, postponement, lean, agile, and "leagile". These approaches are mainly based on the analysis of a set of several different operations and logistics criteria, such as demand predictability, forecasting, lead times (manufacturing and delivery), replenishment, inventory, suppliers' selection and management, product life cycle, and product variety. However nowadays, referring particularly to fashion products, in order to formulate a coherent and aligned SC strategy for fashion companies, it is necessary to enlarge the set of criteria analyzed, because an analysis based exclusively on operations and logistics criteria gives a partial picture. In fact, in the XX century, also thanks to the industrial revolution, the fashion business grew and changed, the customer base became broader as well the reputation for exceptional quality evolved in well-established fashion brands. So, today there are new elements, such as brand image and characterization, which have become relevant for fashion products. Generally speaking, the emotional factors got more and more importance, as today customers are looking for goods characterized by reliable performance, quality, stylish details, and, in some cases, they want also to be involved into a complete experience of shopping.

So, in order to be able to formulate a fashion SC strategy based on a wider perspective, which will not take into consideration only the operations and logistics criteria, other elements must be researched through marketing literature analysis. Particularly, the literature review will be conducted among luxury products' academic contributions and studies.

The choice of exploring luxury marketing literature is based on the fact that luxury and fashion markets show major similarities thus allowing a consistent comparison. Moreover, these similarities may allow borrowing luxury products key factors to fashion products.

The similarities between luxury and fashion markets can be synthesized in two main arguments. The first one is that, according to Okonkwo (2007) and Thomas (2008), historically, the term luxury referred to rare and scarce products (Nueno and Quelch, 1998) available only to a few people. On the contrary, through the last years, luxury became much more attainable, goods and services once reserved to an *élite* became more available to a broader public. According to Crane (1997), the same pattern seems to take place also for fashion products. In fact, the fashion industry experienced a paradigmatic evolution from tailor made clothes, to haute couture through ready-to-wear to the current availability of industrial apparel. This evolution shows a passage from extremely exclusive products to less expensive and less rare ones. Moreover, Fernie et al. (1997) observed that many fashion companies decided to produce and distribute both the "haute couture" products and "diffusion lines" to be able to increase their customers' base.

The second reason refers to the fact that nowadays, in developed countries, middle-class household with growing incomes have begun shopping for brands that were previously seen as out of reach (Catry, 2003). The purchasing decision is, therefore, influenced by aspiration, the sense of what is deserved and how the customers want to be perceived (Priest, 2005). According to Hayes and Jones (2006), the same pattern seems to take place also for the fashion products. In fact, they suggest that increasing incomes, particularly among women, are the key to increased economic activity and purchase determinants in the fashion market (clothing, shoes and accessories). As a result clothing and fashion purchase decisions are based on "want" rather than "need" (Jones and Hayes, 2002).

As said, thanks to the similarities between luxury and fashion products evolution paths, I suggest to borrow a set of key factors and to adopt it for fashion ones. Particularly, according to Caniato et al. (2009), these key factors have been pointed out by marketing researchers as critical success factors that companies should consider for operating in the luxury market. I re-classified them into attributes and factors.

Specifically, attributes are:

- products premium quality, both in terms of compliance with the specifications and in terms of superior material quality (Nueno and Quelch, 1998; Vigneron and Johnson, 1999; Kapferer, 2001; Antoni et al., 2004; Hanna, 2004; Altagamma, 2008; Caniato et al., 2009);
- exclusivity, pursued through the use of naturally scarce materials, limited editions, limited production runs, selective distribution and sometimes a creation of a waiting list (Vigneron and Johnson, 1999; Phau and Prendergast, 2000; Kapferer, 2001; O'Cass and Frost, 2002; Catry, 2003; Hanna, 2004; Caniato et al., 2009);
- lifestyle, which can be recreated in everyday life by possessing special luxury and fashion products (Nueno and Quelch, 1998; Phau and Prendergast, 2000; Reddy and Terblanche, 2005; Caniato et al., 2009);
- design and style, that make the product recognizable in terms of brand even without seeing the label (Catry, 2003; Hanna, 2004; Caniato et al., 2009);
- uniqueness, related to particular raw material, metal components, fibers, shapes, etc. (Nueno and Quelch, 1998; Lamming et al., 2000; Catry, 2003; Caniato et al., 2009).

Luxury products are also related to several factors influencing company business model:

- brand global reputation (Nueno and Quelch, 1998; Phau and Prendergast, 2000; O'Cass and Frost, 2002; Antoni et al., 2004; Caniato et al., 2009);
- craftsmanship (Catry, 2003; Antoni et al., 2004; Hanna, 2004; Caniato et al., 2009);
- association with a country of origin (Nueno and Quelch, 1998; Catry, 2003; Okonkwo, 2007; Caniato et al., 2009).

In my understanding, all attributes and factors can be referred without distinction to luxury and fashion products. What is interesting is that each of them can vary in intensity from product to product depending on its characteristics. Based on this consideration, it is possible to identify two main products' categories, highlighting the trade-off between luxury "exclusivity" and luxury "availability" (Catry, 2003; Dalton, 2005) and borrow this segmentation to fashion products. In conclusion, this research thesis aims at exploring the possibility of defining two new SC strategies for companies working in the fashion

industry, particularly operating in the fashion exclusivity segment or in the fashion availability one. Understanding how these key factors change, shifting from exclusive to available fashion products, is crucial to define different requirements and, hence, to configure and manage the right supply chain. In fact, literature explored so far highlights that differences within customer demand in different market segments can determine different company goals and objectives and, hence, an adoption of a different SC strategy. Both SC and fashion literatures developed so far didn't take into consideration the SC strategies that could be adopted by a company, considering how the customer perceives the product, its *allure* and the mix of its key factors. In other words, the company should develop and align its SC strategy based on the fashion exclusivity or fashion availability of its products. So, this thesis aims at understanding two main key questions:

- On a general basis, how is SC configured in the fashion industry?
- How do SC strategies change depending on the fashion "exclusivity" content or fashion "availability" content of products the focal company produces?

Chapter 3

Research Objectives and Methodology

3.1 Research objectives

With the new century, the fashion system has experienced a dramatic evolution. First, the fashion context is becoming more and more global in geographical scope: evolution is increasingly affecting Italian firms as well as French and American ones. New players are coming on the field (i.e. luxury groups into fashion), new market segments are being created (i.e. upper bridge), entry barriers are getting higher (higher investments in advertising and retail), and new formulas are developing in retailing (experiential shopping is becoming the new communication tool) (Corbellini et al., 2009). In an industry which today is global, there is no longer one single country leader: British, French, Italian, Japanese, Belgian and soon Chinese designers are all legitimated to make their statements. Consumers are mixing and matching different designers, different occasions of use and different price ranges.

In the fashion industry, the increased competitive pressure, especially from the Eastern European countries and from the Far East, requires companies to seek all possible areas of improvement, exploiting their strengths. These areas of improvement could be sought and identified not only within the single company but also outside, among the stakeholders - suppliers, customers, distributors - and among the interrelationships with them. Given the characteristics and the structure of the fashion system, inter-companies strategies and SC management can be a source of competitive advantage for single companies as well as for the entire fashion production and distribution system. Researchers who dealt with the fashion industry gave a very scarce attention to SC management, preferring to focus their research activities on other research fields (i.e., brand management, retail management, etc.). Moreover, as previously analyzed, authors dealing with SC management and SC

strategy did not explicitly take into account the specificities related to "exclusive" fashion products and "available" fashion products. So a gap can be pointed out between fashion-related literature and SC-related literature so far developed.

According to the general research context, that is supply chain management and fashion industry analysis, it is now necessary to define specific research propositions for investigating the chance to define a specific SC strategy correlated to the proposed fashion products segmentation (exclusivity vs. availability). Particularly, the research objectives presented hereby were defined in terms of two propositions:

P1. In the fashion industry the SC model applied by the focal company depends on four areas of competences: design activities, sourcing/purchasing activities, manufacturing activities, distribution activities.

P2. The formulation of a SC strategy, which is the result of how design, sourcing, manufacturing and distribution activities are structured and managed, depends on the fashion "exclusivity" content or fashion "availability" content of products the focal company produces.

Regarding the second research proposition, it means that companies producing and selling exclusive fashion products will formulate and adopt a certain SC strategy, which will be different from the one developed and implemented by companies producing and selling available fashion products. So, each focal company supply chain strategy will vary according to the specific fashion segment (exclusive vs. available) the fashion product belongs to.

As previously analyzed, the same SC approach cannot be appropriated in all situations (Fisher, 1997): customer and market orientation is needed (Schnetzler et al., 2007). Particularly, according to Frohlich and Dixon (2001), market orientation means orientation towards a certain set of competitive capabilities. Differences within customer demand in different market segments can determine different priorities for a company and, consequently, an implementation of a different supply chain. Hence, the first scope of this

research is to point out, through a detailed literature review, that SC models developed so far are not comprehensive and, due to the peculiarities of fashion products, cannot be applied without a change in perspective. Then, the main activities performed by a fashion company within its supply chain are investigated through an in-depth analysis of a single case study (P1). Moreover, the in-depth case analysis is used to build the research framework and to identify the set of key drivers that will be used to run the multiple cases analysis. In fact, finally, a specific supply chain management strategy will be sharpened through a multiple case studies analysis (P2).

3.2 Research methodology

Given the research objectives, beside literature review and analysis of secondary information, case study methodology was identified as the most suitable methodology in order to pursue the research objectives. Particularly, the two methodologies were applied as reported in the following table.

Research objectives and selected corresponding methodologies.

Research Phase	**Research Objective**	**Chosen Methodology**
Preliminary Phase – Exploration - Overview of Supply Chain Management theory (Chapter 1). - Overview of the fashion industry and its market (Chapter 2). - Development of a new research idea and framework (new fashion market segmentation) (Paragraph 2.4).		- Literature review. - Analysis of market reports, financial reports, news and other secondary information sources.
First Phase - Define domain and variables of the research (Voss, 2009).	Proposition 1	- Literature review. - In-depth single case analysis (Chapter 4).
Second Phase - Logical deductions and development of a new SC strategy (Chapter 6).	Proposition 2	- Literature review. - Theory building through multiple case studies (Chapter 5).

Source: elaboration by the author.

3.3 Literature review

The available international literature was studied with particular attention to two research fields, as documented in Chapters 1 and 2. The literature dealing with supply chain management was studied in order to understand the state of the art in this research field. The literature dealing with fashion was analyzed in order to understand the products peculiarities and the market characteristics and competitive drivers.

The academic contributions regarding these two fields were constantly analyzed and controlled along the entire research period, in order to build an updated framework of the state of the art. A careful and deep international literature review both referred to SC management and to fashion management, allowed to identify and analyze the main current research streams on these issues and some possible future developments in order to support the research objectives. In addition, one more literature field was analyzed, namely the one dealing with supply chain management in the fashion industry. The result of this close examination showed the scarce suitability of available SC models to the fashion industry segmentation based on a wide and complex set of attributes and factors.

SC strategies and approaches developed so far ("physically efficient" SC vs. "market-responsive" SC, as well as "lean" SC vs. "agile" SC, etc.) have been mainly based on a set of several different criteria, for example product life cycle, demand predictability, product variety, and market standards for lead time and services. However nowadays, referring particularly to fashion products, these criteria are not enough. As previously said, the emotional factors got more and more importance, as today customers are looking for goods characterized by reliable performance, quality, stylish details, and, in some cases, they want also to be involved into a complete experience of shopping. Base on these considerations, and given all the peculiarities and the specificities that characterized the fashion industry, SC management strategy and models developed so far cannot be applied *tout court* to fashion products. Hence, it is necessary to start building a purposely made SC model through a theory building multiple case studies approach. Before this step, a SC model will be built through an in-depth case analysis in order to identify and interpret the SC structure of companies operating in the fashion industry.

3.4 Case study research

Most of the research conducted in the field of operations management is based on rationalist research methods, primarily statistical survey analysis and mathematical modeling. Rationalist research implies that the knowledge exists independently of the research. One major characteristic of rationalist research is the belief that the phenomenon being studied exists "out there", independent of the research context or beliefs and assumptions of the researcher (Klein and Lyytinen, 1985; Guba, 1990). Another major characteristic of rationalist research is the goal of determining the distributions of a set of pre-specified variables in the population or verifying a set of pre-specified relationships (Meredith, 1998). Researches founded on quantitative analysis, surveys, experiments or simulations have been the dominant way of thinking in the field until now. However, since "… the explanation of quantitative findings and the construction of theory based on those findings will ultimately have to be based on qualitative understanding" (Meredith, 1998), case research is very important for operations management field (Voss, 2007).

Compared to the rationalist approach, case study research takes the opposite view: in its context knowledge can only be achieved given the "perceptual framework" (Meredith, 1998) of the researcher, i.e. the existence of knowledge is not independent from the researcher but is very much linked to the existing knowledge, beliefs, assumptions or values of the researcher. The goal of the researcher is to gain as complete an overview as possible on the organization or system being studied and thus to try to understand comprehensively the phenomena that are analyzed. Thus in case study research, understanding is not "out there" in the rationalist sense. Rather, the understanding that is achieved is only meaningful within a framework of researcher's assumptions, beliefs, and perspective (Meredith, 1998).

Case research has consistently been one of the most powerful research methods in operations management, particularly in the development of a new theory (Voss, 2009).

Pure case research, that is research based on analysis of a limited number of cases, is widely used in Europe (Drejer et al., 1998). Nowadays there is also an increasing number of

case research based papers in USA. Barratt et al. (2007) list over 180 papers published in four top US operations management journals that use case research.

There are several advantages of the case study approach compared to the rationalist approach (Benbasat et al., 1987; Meredith, 1998). First, observing real-case phenomena instead of simulated, surveyed or experimented phenomena increases the relevance of the findings: it analyses what is going on in practice instead of in academia's ivory tower. Secondly, the case study approach allows one to study the reasons behind certain actions – something impossible in the rationalist approach since the potential causalities are elaborated a priori. This allows case study to have a deeper understanding of the phenomena, which rationalist research does not permit due also to the impossibility to go into the detail of each individual that is part of the sample. Thirdly, the case study approach is useful when no previous theory exists to explain a phenomenon – the case study can thus have an exploratory character. Eisenhardt (1989), McCutcheon and Meredith (1993) and Yin (2004) identify other advantages of the case method such as the richness of its explanations and its potential for testing hypotheses in wee-described, specific situations. There are also drawbacks to the case study method: it is time-consuming, it requires the use of multiple methods (from historical data, documents, charts to interviews and personal observation), there is no possibility of control, and traditionally there can be a lack of rigor by the researcher (Voss, 2009).

According to many authors, (Croom, 2009; Voss, 2009; Yin, 2004; McCutcheon and Meredith, 1993) it is possible to identify four types of case study research, as showed in the next table.

Purpose	*Research question*	*Research structure*
Exploration Uncovered areas for research and theory development.	Is there something interesting enough to justify research?	In-depth case studies. Unfocused , longitudinal field study.
Theory building Identify/describe key variables. Identify linkages between variables. Identify "why" these relationships exist.	What are the key variables? What are the patterns or linkages between variables? Why should these relationships exist?	Few focused case studies. In-depth field studies. Multi-site case studies. Best-in-class case studies.
Theory testing Test the theories developed in the previous stages.	Are the theories we have generated able to survive the test of empirical data? Did we get the behavior that was predicted by the theory or did we observe another unanticipated behavior?	Experiment. Quasi-experiment. Multiple case studies. Large scale sample of population.
Theory extension/refinement To better structure the theories in light of the observed results.	How generalizable is the theory? Where does the theory apply?	Experiment. Quasi-experiment. Case studies. Large scale sample of population.

Source: Voss, 2009.

First, case study research for exploration is used to develop ideas and research questions. Secondly, case study research can be conducted for theory building, its purpose is to refine and sharpen the constructs of a theory and usually it takes the form of multiple case studies (Mukherjee et al., 2000). Particularly, when multiple settings are investigated to help extend the generalizability of the results, the research is called a multiple case study (Meredith, 1998). Thirdly, case study research for theory testing (explanatory approach) it can, for instance, apply existing theory to a setting not previously considered, or disprove existing theory on the basis of a single case. It can also be used to test several contradictory theories at the same time to find out which one is the most relevant given a certain amount of parameters. Finally, case study approach can be adopted for theory extension or refinement. It is used as a follow-up to survey-based research in an attempt to examine more deeply and validate previous empirical data and results. Richardt and Cook (1997), tend to believe that the rationalist methods are most appropriate for testing or verifying existing theory, while the interpretive methods, such as case studies, are best for generating or extending theory.

This research thesis aims at developing a new theory, namely that SC strategy formulation depends on fashion "exclusivity" or fashion "availability" of products made by the focal company (P2), through a multiple cases study. According to Voss (2009), in theory-building research, a prior view of the general constructs object of the research is needed. Miles and Huberman (1994) suggest doing this through construction of a conceptual framework that underlines the research. Such a framework explains the main key drivers that are to be studied. Building a conceptual framework forces to think carefully and selectively about the variables to be included in the research (Voss, 2009). In order to build the general research domain, this thesis will analyze the SC model applied by a focal company operating in the fashion industry (P1) through an in-depth single case analysis.

Chapter 4
Research Framework

4.1 Fashion supply chain structure: an interpretative scheme

As seen in the previous chapter, constructs are the "theoretical concepts" and "variables" that can be considered relevant for a case-based research (Forza, 2010). Before starting a case-based research, as well as a survey, the researcher has to establish a conceptual model (Wacker, 1998). In order to build the general research framework for this research an in-depth single case analysis has been done. The in-depth analysis will also allow to investigate which are the areas of competences belonging to a fashion company supply chain (P1). The in-depth analysis is related to the SC business model applied by Zara, a clothing manufacturing and retail company operating worldwide. According to Yin (2004), the main reason that justifies the choice of this single-case study refers to the fact that this case is a representative one and allows capturing and describing the characteristics of other firms operating in the same industry. In fact Zara, which originally was a manufacturing company, had the ability over time to "control what happens to its product until the customer buys it,…, and has developed a super-responsive supply chain" (Ferdows et al., 2004). Zara supply chain is one of the most important company success factor and it is the result of an important lesson learned in 1975 by the founder and president, Amacio Ortega, who states that "to be successful you need to have five fingers touching the factory and five touching the customer" (Ferdows et al., 2004). That means that it is strategic for a company to design and implement a SC able at the same time to increase company efficiency and effectiveness and to keep control on its products until they are sold.

Moreover, as Yin argues (2004) this "single-case study can be used as a pilot case that is the first of a multiple-case study". In fact, through this case analysis a general framework of investigation will be designed, providing a specific description of the research domain and

its key drivers. This general framework will be then applied further in the research in order to analyze other cases. The main sources used to run this in-depth analysis were company visits and interviews, company annual reports (2008, 2009), company web site, cases and articles (Ferdows et al., 2004; Ghemawat and Nueno, 2006; Mcafee, Dessain and Sjoman, 2007). Particularly, during the semester spent at the Zaragoza Logistic Center (August-December 2008), within the PhD program, company visits and interviews have been conducted at the Zara distribution center in Zaragoza.

The story and the structure of Inditex

Inditex (Industria de Diseño Textil) of Spain is Inditex is one of the world's largest fashion retailers that design, manufacture, and sell apparel, footwear and accessories for women, men and children through eight chains around the world: Zara, Pull & Bear, Massimo Dutti, Bershka, Stradivarius, Oysho, Zara Home and Uterqüe – boasting 4.780 stores in 77 countries (www.inditex.com). Inditex financials are showed below (the Inditex financial year is from 1st February to 31st January of the following year).

Fiscal Year	**2009**	**2008**	**09/08**
Net sales	11,084 millions of Euros	10,407 millions of Euros	7%
Net profit	1,314 millions of Euros	1,253 millions of Euros	5%
Nº of stores	4,607	4,264	343
Nº of countries	74	73	1
Sales outside of Spain	68%	66%	
Employees	92,301	89,112	3,189

Source: Company website (www.inditex.com).

Between 1963 and 1974, Amancio Ortega Gaona, chairman and founder of Inditex, begins his career as a clothing manufacturer, founding in 1963 Confecciones Goa to manufacture products such as housecoats. The business grows steadily over the decade until Ortega owns several factories, which distribute their merchandise to other European countries. In 1975, the first Zara store is opened on a street in downtown La Coruña, in Spain. From the beginning Zara positioned itself as a store selling "medium quality fashion clothing at affordable prices" (Ghemawat and Nueno, 2006). In 1976, Ortega Gaona operations encompassed just four factories and two stores but it was already clear that what other buyers ordered from his factories was different from what his store data told him customers wanted (Ghemawat and Nueno, 2006). Between 1976 and 1984 Zara's approach to fashion is well received by the public, which prompts the retailer to extend its network of stores to major Spanish cities. In 1988 Zara opens its first store outside of Spain in Oporto (Portugal) and then the Group begins welcoming shoppers in the United States and France with stores in New York (1989) and Paris (1990). In 1991 retailer Pull & Bear is founded, and Inditex buys 65% of the Massimo Dutti Group that will be totally acquired in 1996. In 1998 Bershka, a retailer aimed at young women and teen girls, is launched and in 1999 Inditex acquires Stradivarius, the Group's fifth retailer. In 2000 Inditex headquarters moves to a new building in Arteixo (La Coruña, Spain). Inditex is headquartered in and has most of its upstream assets concentrated in the region of Galicia on the northwestern tip of Spain. Galicia has a very strong tradition in the apparel industry. This heritage is dated back to the Renaissance, when Galician were tailors to the aristocracy and Galicia region was home to thousands of small apparel workshops. Unfortunately, despite its heritage, the geographical position of the region is critical for Inditex. In fact, in 2006 the CEO José Maria Castellano said "Galicia is in the corner of Europe from the perspective of transport costs, which are very important to us given our business model" (Ghemawat and Nueno, 2006).

In 2002 Zara breaks ground on its new distribution hub in Zaragoza (Spain) and in 2004 the Group unveils store number 2,000 (in Hong Kong), expanding its global footprint to 56 countries in Europe, the Americas, Asia and Africa and celebrating the launch of its first stores in Morocco, Estonia, Latvia, Romania, Hungary, Lithuania and Panama. In 2007 Zara Home introduces Inditex's first on-line store and two new Spanish distribution hubs

begin operating in Meco (Madrid) and Onzonilla (León). In 2008 a retailer specializing in accessories and other fashion extras called Uterqüe is launched. In 2009 the 4,000-store milestone is already reached and Inditex signs a joint venture with the Tata Group to open stores in India beginning in 2010. The Group debuts its first stores in Syria, while the concepts Stradivarius, Bershka and Pull & Bear open its first stores in China. A new distribution centre begins operating in Palafolls (Barcelona), next to the existing logistics platform in Tordera.

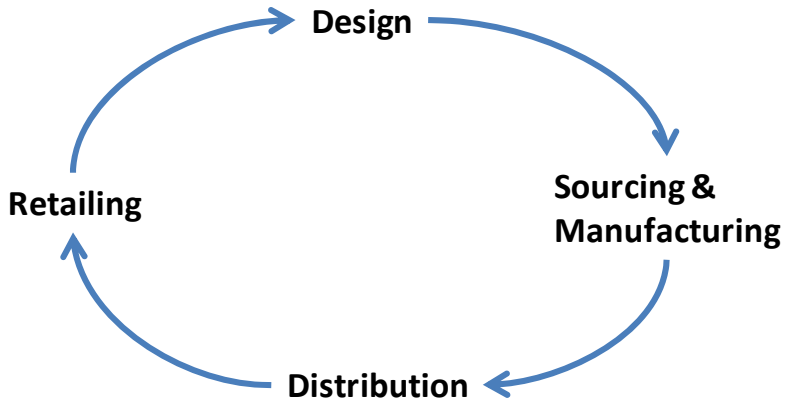
The eight retailing chains are organized as separated business units within an overall structure that also included six business support areas (raw materials, manufacturing, logistics, real estate, expansion and international) and nine corporate departments of responsibility. Each of the chains operates independently and is responsible for its own strategy, product design, sourcing and manufacturing, distribution, image, personnel and financial results, while the group sets the whole strategic vision, coordinates the activities of the concepts stores and provides them with administrative and general services. Corporate managers see the role of the corporate center as a "strategic controller" involved in setting the corporate strategy, approving the business strategies of each individual chains and controlling their performances (Ghemawat and Nueno, 2006).

Zara's business model and supply chain strategy

Zara is the largest and most internationalized of Inditex's chains. At the end of 2009, it operated 1.444 stores in the countries around the world, with a turnover (2008) of 6.8 billion Euros and an EBIT (2008) of 1.4 billion Euros.

According to Ghemawat and Nueno (2006) Zara's business model and supply strategy can be represented through the analysis of four distinctive areas that is design, sourcing & manufacturing, distribution and retailing. The two authors represent the relationship between these four areas of interest through a circle, meaning that the main processes characterizing Zara's business system and supply chain approach have no end and non beginning. It's a sort of virtuous circle, in which each step is strictly linked to the other. The

following figure represents Zara business model and each area of interest will be deeply discussed further in this paragraph.



Source: Ghemawat and Nueno, 2006.

Design at Zara

Zara creates two basic collections each year that are phased in through the fall/winter and spring/summer seasons, starting in July and January respectively. Zara also brings out new items continuously throughout the year, including both changes to existing garments (old item with new shape or new color) as well as entirely new creations. On average during one year Zara introduces approximately 11.000 new items (Mcafee, Dessain and Sjoman, 2007). Zara has a team of about 200 designers, and has three design centers – consisting of designers, sourcing specialists and product development personnel – one each for men's, women's and children's apparel. The design organization is very flat and focused on careful interpretation of catwalk trends suitable for the mass market. The process of adapting to trends gives as a result that, on average, several dozen items are designed each day, but design centers approve only few of them (about one-third). As showed in the following figure, after the approval the designers come out with the design specifications and the technical brief determining which fabrics offer the best combination of fashion and price.

Source: Capell, 2004.

At that point, the procurement and operations managers provide inputs regarding capacity and manufacturing costs. With all the teams working in tandem the prototypes are ready in a few hours. Once the team comes out with the prototype, designers use CAD – computer aided design – to enhance the color and textures and to make the sample. After the sampling approval, the fabric is sent for cutting and the item goes into production.

Sourcing at Zara

As the collection comes together, the sourcing personnel identify production requirements, deciding first of all whether an item will be insourced or outsourced. Moreover, the sourcing team sets a timeline to ensure that the initial collection will arrive in stores at the start of the selling season. Zara sources fabric, components, other inputs and finished products from external suppliers with the help of the purchasing offices in Barcelona and Hong Kong, as well as the sourcing personnel at the headquarters. Europe has historically dominated Zara's sourcing patterns even if recently sourcing from the Far East, particularly China, expanded substantially. About half of the fabric purchased by Zara is kept in stock and is undyed in order to facilitate an updating during the season and ensure high flexibility. Dyeing, pattering and finishing activities of grey fabric are run by Comditel, a fully owned subsidiary of Inditex, which deals with more than 200 external suppliers of fabrics and other raw materials. Comditel supplies finished fabric to external as well as in-house manufacturers.

Manufacturing at Zara

About 40% of finished garments are manufactured internally, and two-third of the 60% remained is sourced from Europe and North Africa while one-third from Asia. Particularly, more basic items that are more price-sensitive than time-sensitive are likely to be outsourced to Asia. Zara counts 20 fully owned factories, 18 of them located in and around Zara's headquarters in Arteixo. Zara's factories are heavily automated, specialized by garment type and focused on the capital-intensive part of the production process, pattern design and cutting activities. Referring to the cutting, several layers of fabric are laid out on cutting tables, vacuum sealed and cut by machines, based on a computer layout of the sample pieces (CAM). As showed in the following figure, the layout is prepared and optimized via computer (CAD) in order to minimize the waste.

Source: Capell, 2004.

The cut pieces are then distributed for sewing among 450 small workshops located in Galicia and Northern Portugal. These independent workshops perform the labor-intensive, scale-intensive activity of sewing. The sewn garments are sent back from the workshops to Zara's manufacturing complex, where they are checked for quality and ironed (see following figure).

Source: Capell, 2004.

As showed in the following figure, garments are then tagged; it means that labels for each country are attached. Zara used to rely on store managers to do this activity once the product reached the store. But management realized labeling all garments and applying security alarms at the factory saved both time and money. The less time management spends on tasks such as tagging merchandise, the more time it can spend selling.

Source: Capell, 2004.

After garments are tagged, are then folded or bagged and sent to the distribution centers. Garments are ready within a week or two. With the fabric in stock, Zara is ready with the final product, including designing, pattern making and cutting within ten days.

Distribution at Zara

Once tagged, the garments are sent to Zara's distribution center in Arteixo, in Zaragoza or in Palafolls (Barcelona). As showed in the following figure, at the distribution center all merchandise is allocated first by country, then by individual store using a moving carousel of hanging rails.

Source: Capell, 2004.

Although more than 60,000 items move in and out of the center each hour, only few workers are needed to monitor the process. The distribution center is automated and has two levels: one is the section where folded garments are packed into cardboard boxes; the other is the one where the garments are placed on hangers.

More than 2.6 million items move through the distribution center each week, and most spend little more than a few hours at the center. Using electronic bar codes, each shop's orders are carefully placed onto the appropriate moving rail, ensuring each store gets exactly the right shipment (see following figure).

Source: Capell, 2004.

Twice a week the garments are shipped out of the distribution center to the stores via third-party delivery services. Approximately 75% of Zara's merchandise by weight is sent through trucks in the center and the South of Europe. The remaining 25% is shipped mainly by air in North Europe and the rest of the world. The European stores receive the consignments within 24 to 36 hours; the ones located outside Europe within 24-48 hours. Zara is able to achieve accuracy level of 98.9% in its shipments.

Retailing at Zara

Zara's stores are located in prime locations across the world. Zara believes that these locations themselves provide the required advertising. The company in fact spends very little on advertising – about 0.3% of its total revenues compared to 3%-4% on average for most specialty retailers.

All of Zara's stores are uniform in outlay, including lighting, fixture, windows display and arrangement of garments. At the company's headquarters there are 25 full length display windows. These windows have display platforms and variable light, which helps Zara in determining how the display unit would look on bright days, on cloudy days and during the night. A team of window designers works to arrive at the look of the windows at each of their stores. The window presentation designs are then sent to the stores and most of Zara's stores across the world sport those designs.

All Zara stores has identical handhelds – also known as personal digital assistant (PDA) – that are used primarily for ordering and transmitting information to headquarters. In fact, as soon as a product is sent to the stores, Zara will know if the new design is going to succeed or not, based on immediate feedbacks from the sales force and store managers. Products that do not sell as expected are immediately discontinued.

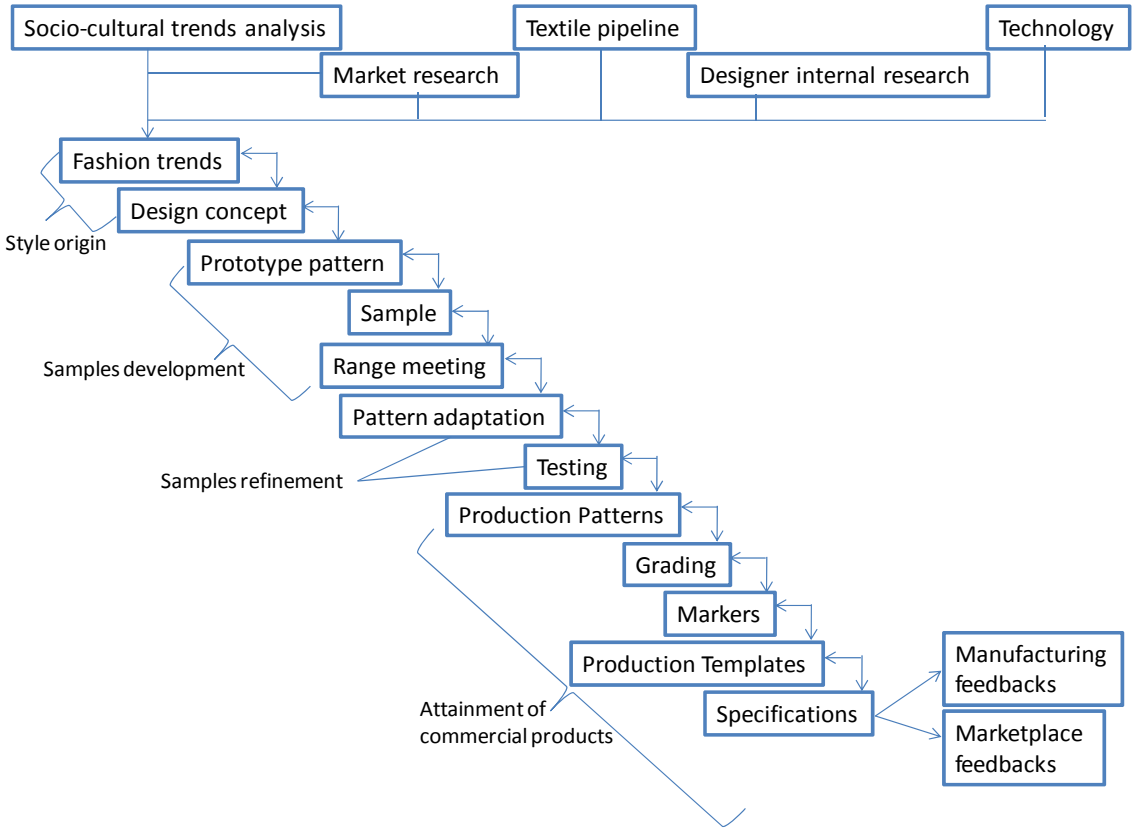
The sharing of information among all the actors in Zara's Supply Chain allows to reduce stock at minimum, to stop the production of not sold items and more important to keep producing new styles, designs and products as demanded by stores.

4.2 Main evidences and results

Through the in-depth analysis of Zara cases, it's possible to conclude that the supply chain model applied by a fashion focal company could be represented and described through the analysis of four main areas (P1). Particularly, these four areas of interest are: design activities, sourcing/purchasing activities, manufacturing activities, distribution activities (logistics and distribution channels). Starting from this result (P1) a deeper analysis of each single area will be carried out in order to highlight the main aspects and peculiarities that characterized the SC activities run in a fashion company.

Design

The design process generally includes all the steps involved from the generation of ideas and concepts to prototype development of the end products (Secor, 1992). It is a multidisciplinary science that requires teamwork and collaboration between various company functions. In the apparel industry, for example, the design phase is preliminary to the product manufacturing one. In fact, based on the design, patterns are developed in order to cut the fabric which will be then assembled to create a garment. All these activities require a close collaboration between design, marketing and sales and operations. The following figure shows the flow of processes related to the apparel products design and development.



Source: adapted from Carr and Pomeroy (1992).

As it can be seen looking at the above figure, identified fashion trends are the first input for a concept design. Fashion trends can be set by many heterogeneous sources. Starting from socio-cultural trends, these are long-term trends influencing not only fashion but also other social areas, such as arts, music, or architecture. According to Corbellini et al. (2009), these trends "shape the landscape of the collective imagination upon which companies can position themselves conceptually when it comes to defining their brands and products". Market research refers to many activities that a fashion company can do such as gathering socio-cultural data, trend analysis, competitor's analysis, attendance to fashion shows or fairs and so on. Referring to text pipeline, traditionally the process of fashion trend developing and forecasting, in terms of looks, colors and looks, has been run by specific well-defined players and institutions. For example, the Bureau de Style, based in France, which identifies emerging general trends likely to have an impact on textile industry; fiber

producers, that interpret the suggestions coming from the Bureau de Style; and, finally, product Fairs for semi finished goods (yarns and textiles), such as Pitti, Unica, Interstoff and Premièr Vision. Generally speaking, nearly two years go by from the conception of fibers and colors trends to the collection presentation in store windows (except the pre-collection).

Moreover, technologies can also be an inspiration source if we think about all the innovations recently carried out in fiber and fabric sectors as well as in finished products (i.e., Goretex, Lycra, Tactel, etc.).

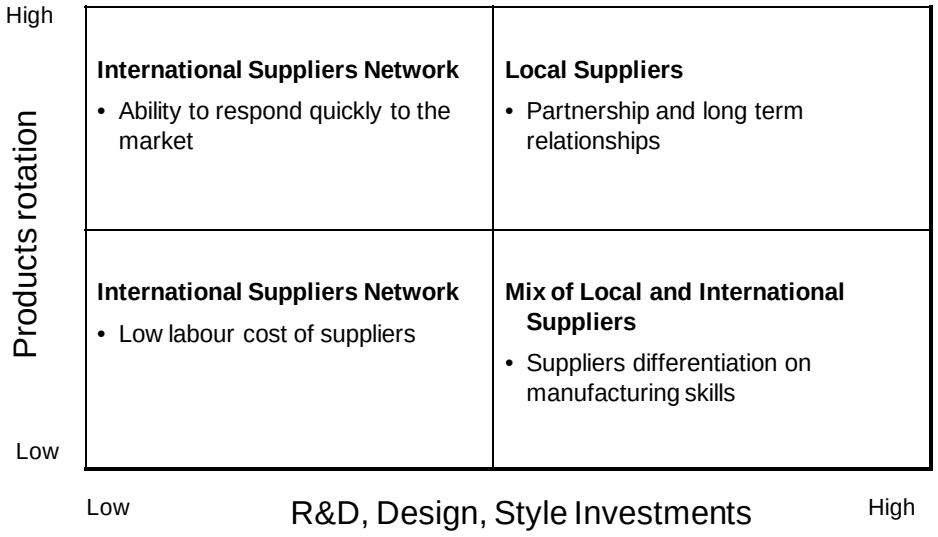
Fashion companies receive many suggestions from the outside, but might find inspirations also within the company. Designers follow routes that are not classifiable. Sources of inspiration come from the past, arts, architecture, nature, travelling and so on. This amount of experiences, fillings and emotions are then interpreted by designers that create then a style and trend. As the fashion trends are identified, the design concept is then created. Consequently, prototype patterns and samples are developed, discussed and tested and finally approved for enabling the internal decisions of production. The master production patterns are then transformed in several patterns with different sizes (grading activity), maintaining a perfect proportion with the original patterns. Finally specification are given with production templates in order to describe from a technical point of view what and how has to be done.

Due to the short lifecycle of the fashion garments reduction in the time required for the design is achieved by using technologies such as Computer Aided Design (CAD). CAD systems contribute to a decrease of time in developing the patterns and provides electronic storage of the design which facilitates the later adjustments and transmissions (Barnes and Lea-Greenwood, 2006; Waddell, 2006; Easey, 2002). The reduction of the time related to the design supports the rearrangement of the collections and the rationalization of the "bills-of material" needed in the manufacturing operations (Forza et al., 2000).

Sourcing

Generally speaking, sourcing is the set of decisions that have to be made to source goods and services, these activities have a long-term time horizon, comprehend a set of strategic and structural choices and are characterized by several different trade-offs (Slack et al., 2008). The first trade-off can be related to the "make or buy" decisions, another trade-off can be whether to source from a single supplier or from a portfolio of suppliers and another one can refer to the location of the supplier to source from.

Regarding this last trade-off, the apparel industry is considered to be one of the first industries that developed global manufacturing activities across both developed and developing countries. In the dilemma between sourcing in either a local or global base there are several trades-offs which should be examined. The following figure describes different sourcing strategies which involve either global or local sourcing, according to products rotation and products fashion contents (in term of style, R&D and design).



Source: Adapted from Cietta, 2008, La rivoluzione del Fast Fashion

As the matrix shows, products with low rotation and low requirements of innovation investments can be made by a network of international suppliers. In this case company main goal is to take advantage from the low labor cost of suppliers involved in the network. Opposite solution can be adopted in case of high product rotation and high investments in

design and R&D. In this case the company focuses on a long term availability of products and craftsmanship as well as on the ability to serve promptly the market. Due to these reasons, suppliers are closer to the focal company with which partnerships and long term contracts are made. The remaining two quadrants show that according to the company main goal the sourcing strategy should be focused on suppliers' differentiation on technical skills or on suppliers' speed.

Generally speaking, the answer to the above dilemma is derived from the strategy that each company has adopted and the objectives that it aimed to achieve (Hines, 2007; Chopra and Meindl, 2007). In case that cost efficiency is the main concern for a fashion company, off-shoring in low cost overseas manufacturers such as Sri Lanka and China offers significant reductions in manufacturing cost. However, there are several fashion companies that chose their production location closer to the European market such as Turkey and Eastern Europe due to the time delivery efficiencies. For example, whilst the shipping time from China to UK is around 22 days, from Turkey it is only 5 days. This distance reduction enable fashion companies to respond quickly to demand changes and improve their position against retailers by embracing "fast fashion" concepts, pushing latest trend products in the market quickly and successfully anticipating seasonality issues (Bruce and Daly, 2007; Rigby, 2005). Off-shoring in low cost overseas countries can also imply "hidden costs" which should be considered. According to Christopher et al. (2004), "hidden costs are those that are not typically anticipated by the buying organization, but almost always occur". Quality problems, urgent air freight deliveries due to the distance between the suppliers and the served market, general delays and bureaucracy matters during the transportation of the products are some important examples of such hidden costs (McKee and Ross, 2005; Christopher et al., 2004; Hines,2007). Due to the distances, long lead times have been inevitable and inventory levels in the whole pipeline increased with the risk of high obsolesce which could result in lost sales, final markdowns or even an excess of waste stock (Bruce and Daly, 2007; Sternfels and Ritter, 2004). Apart from the "hidden cost" there are also "inflexible costs" to be considered (Jacobs, 2006; Christopher and Peck 2003; Hunter et al., 2002). The use of distant suppliers that might lack flexibility and responsiveness to market changes and fail to meet demand efficiently, could contribute to

the overall supply chain cost. Therefore there is vital need to examine and quantify these two types of cost before choosing offshore sourcing as a business strategy in the fashion industry (Christopher et al., 2004; Stratton and Warburton, 2003).

Local sourcing has provided a set of significant advantages that might counterbalance the cost advantages of low wage countries (Cietta, 2008). In the case that the strategy of a fashion firm is focused on high customer service, the decision of local sourcing has contributed to the overall success of a company in anticipating and keeping abreast of customer requirements. Proximity to the market has enabled companies to catch the current fashion trends and respond quickly to potential demand change. Due to the volatile nature of the fashion industry, being flexible in adjusting to market trends, reducing lead times and achieving faster deliveries has enhanced companies' competitive position (Hines, 2007).

Purchasing

The fashion buying cycle is based on a standard calendar of international trade fairs, fabric events and catwalk shows, based on two main seasonal ranges (Barnes and Lea-Greenwood, 2006). In the traditional fashion, the buying cycle occurs one year before a season and the orders are placed about six months in advance of the new season. Therefore buying has been led by forecasts based on historical data from previous sales which present similarities in both volume and product mix. Nevertheless, relying on historical and out-of-date historical data increases the risk of inaccurate forecasts. Furthermore, scheduling so far in advance might lead to inaccuracy of the trends. Some styles might proved popular fast sales whilst others might need important mark-downs to be refined so that new styles can be merchandised (Bruce and Daly, 2007). Buyers, in order to minimize the risk derived by the forecast, specify the final product characteristics as closely to the season when efficient information for the demand can be reached (Birtwistle et al., 2006). Furthermore, they request only around 60% of the production to be done in high volumes, and for the very fast fashionable items in lower batches, they work with European producers (Dvorak and Van Paasschen, 1996). For instance, Zara's 20% of planned purchases occur six months in advance of the season, 30% by the start of the season and the balance of 50% during the season (Birtwistle et al., 2003). Furthermore, in many cases some retailers use "testing"

stores with the aim of predicting more efficiently which articles would be “best-selling”. For example, the summer collection could be tested in advance in warmer climates (Fisher et al., 2000; Dvorak and Van Paasschen, 1996; Gutgeld and Beyer, 1995). Whilst Limited is a company that follow the above strategy, Coin, an Italian department stores chain, uses “focus groups” in order to conduct the “test” (Gutgeld and Beyer, 1995). The testing strategy in combination with the continuous “tracing” of the sales enable the identification of “non successful” articles and the quick rejection of them, and a “push” to the market of the more successful “refined” ones via the use of “quick logistics” (Fisher et al., 2000; Dvorak and Van Paasschen, 1996). Zara, for instance, uses feedback from the stores to achieve successful product developments in terms of global production. Then local retailers decide if they would continue to replenish the successful lines or reverse the slow moving ones to the logistic centers from which the articles are addressed to different areas (Barrie, 2004). However, products produced in Far East countries are usually difficult to be remanufactured whilst being still in fashion. Thus many retail companies use a mixed manufacturing base. “Low cost basic lines that can be ordered three months in advance from the Far East; seasonal fashionable lines supplied in approximately three weeks from East European or North Africa suppliers at reasonable costs and re-makes of best selling lines or fashion lines in short runs at a high cost under a week from British manufactures” (Birtwistle et al., 2003, p. 120). Zara, as an example, sources basic lines, which are around 20%, from Asia and the balance of 80% is sourced from Europe (Barrie, 2004). In the fashion industry, whose environment is characterized as highly turbulent and time is considered to be significant in meeting demand requirements, companies are trying to reduce their lead times (Barnes and Lea-Greenwood, 2006). Consequently, companies such as Tesco, Next and New Look prefer supplying their fast moving fashion items from countries that are closer to UK, such as Turkey from which the shipping time is 5 days compared to China’s 22 days, as mentioned before (Bruce and Daly, 2007, Barnes and Lea-Greenwood, 2006; MacCarthy et al., 2005; Rigby, 2005;). Furthermore, firms are moving towards developing more frequent collections of lower product volumes (Barnes and Lea-Greenwood, 2006). Buyers purchasing activities could occur every six weeks or even more frequently, i.e. on a weekly basis, in order to be more flexible towards market changes and

push products faster in the stores (Barnes and Lea-Greenwood, 2006; Bruce and Daly, 2007). Finally, the buying teams work closely with the merchandisers and cloth technologists to develop budget analysis, product ranges and sources (Bruce and Daly, 2007).

Manufacturing

According to Waddell (2006), "…manufacture is the process whereby the design is translated into a marketplace garment when it is cut, assembled, finished and delivered. This process can be either crafted by hand or mass-production". There are several ways under which the manufacturing firms could operate.

In fashion manufacturing operations, computer aided design and manufacturing (CAD and CAM) are tools used in designing and manufacturing clothes and accessories (i.e. shoes, bags, etc.) to control several automated processes. These systems are considered to be expensive but highly efficient in dealing with great throughputs of items and achieving shorter lead times (Waddell, 2006; Hayes and Jones, 2006; Adewole, 2005). By using technological tools such as CAD and CAM, product changes are faster and there is the ability to develop more quickly new market-driven designs (Abecassis-Moedas, 2006; Barnes and Lea-Greenwood, 2006; Christopher et al., 2004; Hunter et al., 2002; Yan and Fiorito, 2002). CAM enables a design to be both developed and adjusted quickly. According to Hunter et al. (2002), "transmission of the design to a potential customer and feed-back on the ideas involved, allow weeks to be cut from the old method of design, manufacture of a sample and walking it around the buyers". For instance, in the case of the color, a specific software combined with CAD/CAM systems could support the related decisions. Instead of developing several prototypes, a computer based trial of the color could be performed. After the related color decisions are made, use of CAM could allow the cutting of the units in a simple and accurate way. Moreover, through the use of computer systems any changes needed from one model or size to another could be done within seconds (Hunter et al., 2002).

After the product has been designed, the next operations activity is the cutting one. In the garment manufacturing process the cutting is the only part of clothing manufacturing which

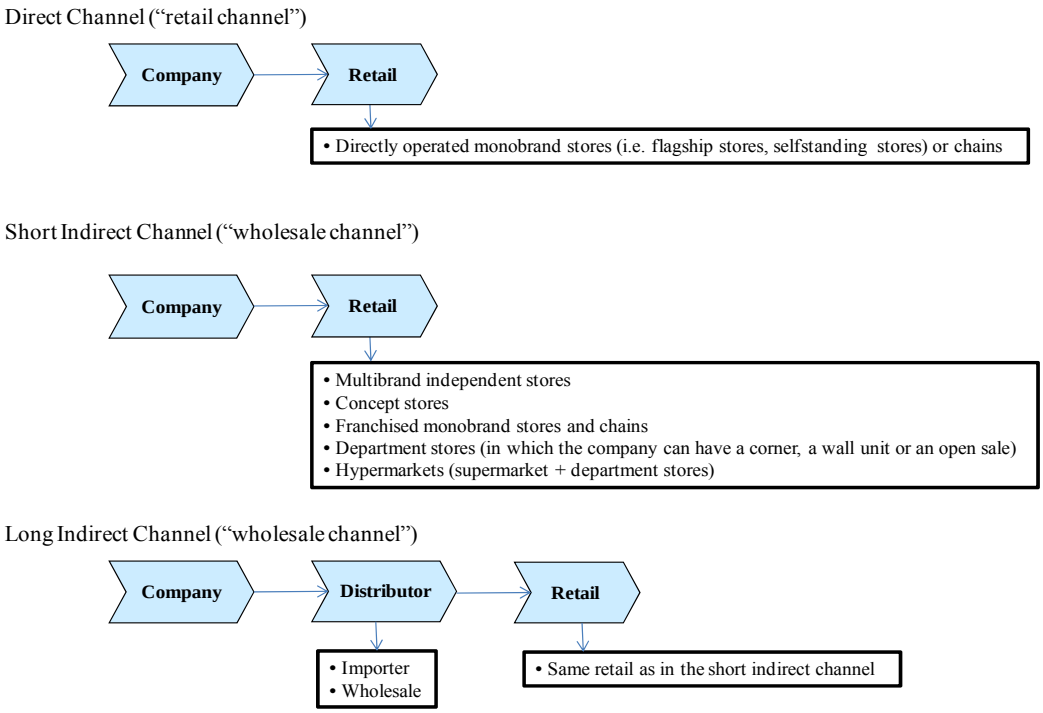
has been effectively automated. The adoption of fully automated cutting activities in the production offers significant time savings (Hayes and Jones, 2006; Waddell, 2006). Although automated cutting activities are increasing efficiency and reducing time, in some cases cutting activities are done manually especially in case of precious and rare materials (crocodile, alligator, ostrich, lace, etc.). After the raw material is cut, all the pieces are assembled. Assembling activities can be carried out through a modular manufacturing approach. Although modular manufacturing was firstly used in the automotive industry, implementation of this concept has been adopted in the apparel industry. By grouping closely dependent production operations, such as sewing, has led to a reduction in the assembly procedure from nine days to two. New modular sewing machines and unit production systems have provided time savings, reduced the need for labor and increased productivity up to 15% (Hayes and Jones, 2006; Smith and Weil, 2005; Forza et al., 2000; Lin et al., 1994). Last, but not least, the final stages of the manufacturing procedure are the labeling, packaging and shipping of garments in warehouses. After that, the products are transferred to the retailers' warehouses. Automation systems and electronic processes in both stockholding points have enabled time compression in terms of retailers' placement orders and in-store product availability. In some cases the manufacturer's job might include price tags, hanging preparation and direct delivery to the shops (Waddell, 2006; Caputo and Palumbo, 2005). However, retailers' request not to keep stock has been translated into smaller production batches and more frequent deliveries which have increased the pressure on manufacturers (Cammet, 2006; Abecassis et al., 2000).

Logistics and Distribution Channels

In terms of different distribution channels, it is possible define two of these:

- a direct distribution channel, generally called "retail channel", that creates an immediate relation between the company and the end customers without any commercial intermediation.
- an indirect distribution channel, generally called "wholesale channel", that can be long or short and might include several different actors.

The following figure illustrates the different channels.



Source: elaboration by the author.

After the analysis of the different distribution channels, retail logistics activities will be described. Nowadays, many retailers require just-in-time deliveries due to the fact that thank to this approach better stock management can be achieved (Barnes and Lea-Greenwood, 2006; Easey, 2002). Deliveries of new seasonal lines are postponed as late as possible, allowing less response time. Thus, response to customers' demand is achieved whilst carrying the least possible inventory (Barnes and Lea-Greenwood, 2006; Easey, 2002; Hunter et al., 2002). In the light of the above, efficient collaboration between retailer and supplier on issues such as inventory management, product development and logistics, is fundamental. Efficient information on customers' needs and exchange of this information back to all the actors in the supply chain is essential. In fact, the transport systems and distribution centers alone without accurate information would lead to a failure of the logistics objective of "delivering the right product to the right place at the right time" (Abernathy et al., 1999; Dvorak and Van Paasschen, 1996). The effort of getting the right

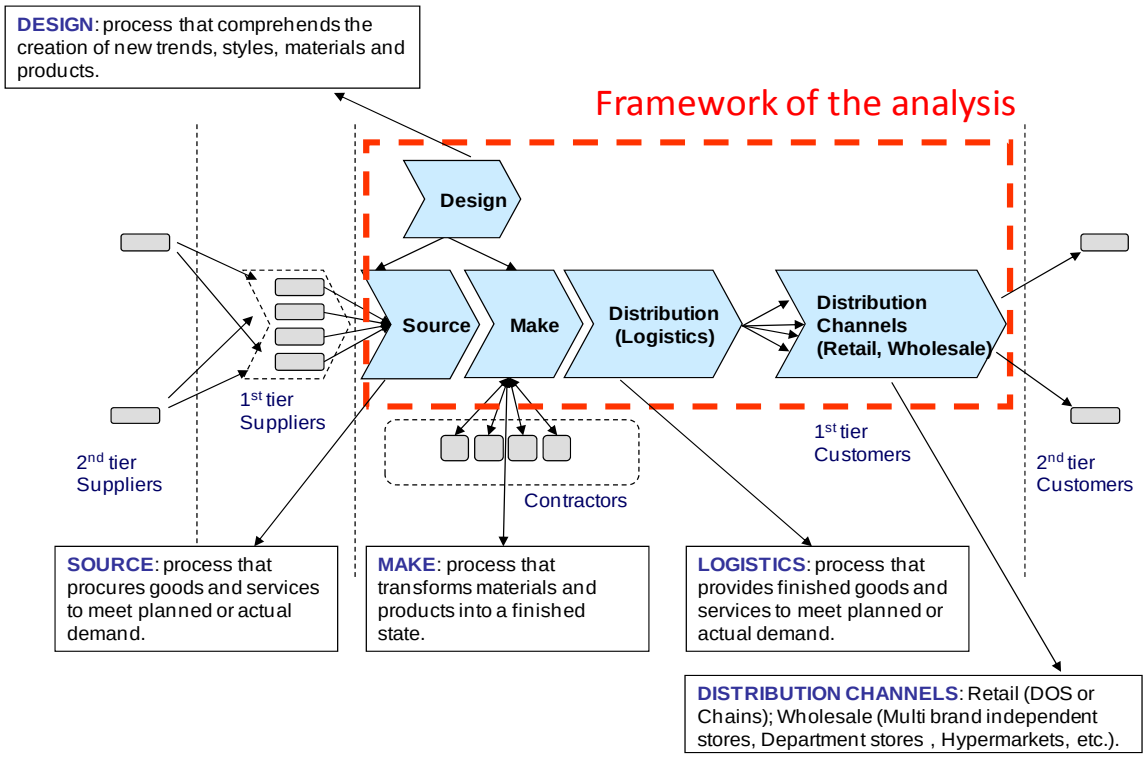
product, in the right time, in the right place is more complicated, challenging and core to fashion industry, largely due to its volatile nature (Bruce and Daly, 2007; Fisher et al., 2000). Therefore, there has been a shifting from the traditional distribution model of "warehouse-ready" to "floor-ready merchandise". Pre-fixed labeling, bar coding which enables product identification, barcode container shipping, hangers, security tags, pressing and packaging allow direct delivery and faster stores' replenishment (Wright, 2007; Cammet, 2006; Sheridan et al., 2006; Smith and Weil, 2005; Hunter et al., 2002; Abernathy et al., 1999; Dvorak and Van Paasschen, 1996). The above techniques enable most popular products' lines cross docking in the distribution centers, where products are received and sent to stores without being stored and unpacked. Then staff in the store has only to remove packaging (Sheridan et al., 2006; Speer, 2005; Birtwistle et al., 2003). In terms of distribution operations many companies use the "direct-to-store" approach. In this case the products, in order to reach the marketplace quickly, are shipped directly from factory to store bypassing distribution centers (DC). In general, the overall objectives of retailers, in order to speed time-to-market, are to achieve DC space utilization, receive and dispatch orders quickly, constantly monitor shipments and prepare designated shipments to each store's orders (Wright, 2007; Speer, 2005; Abernathy et al., 1999). Some fashion companies use pre-packed marked containers for each store from the sourcing location, usually overseas, to achieve direct delivery to stores (Hoffman, 2006). In terms of transportation many companies use air freight for more speed to the market, when needed (Hoffman, 2006). This occurs either due to several delays, especially in terms of offshore manufacturing, or because some articles sell quicker than what predicted. The overall cost might be higher but lost sales are thus avoided (Dvorak and Van Paasschen, 1996). For basic clothes, distribution aims at avoiding expensive transportation such as air freight due to cost constraints in relation to products value margin. Their demand is more predictable so their distribution can be more balanced. However, whilst the fashion items struggle towards the quickly changing trends, retailers of basic articles focus on ensuring that there is availability of size, design and color. The shipping amount for each store is predetermined and the vehicles deliver to distribution centers. Every store begins with a standard amount of products, based on previous sales. Regional warehouses are usually

kept close to the stores to facilitate efficient replenishment and provide safety stock. The overall aim in these operations is cost efficiencies (Dvorak and Van Paasschen, 1996). Moreover, use of IT systems for constant products tracking, EDI systems for efficient communication between supplier and retailer, appropriate factory layouts, distribution centers equipped with automated sorting and conveyors, are important factors in all the above "speedy" logistics efforts. Both parties collaborate to develop successful managerial and technological approaches (Cammet, 2006; Smith and Weil, 2005; Hunter et al., 2002; Abecassis et al., 2000; Abernathy et al., 1999).

Finally, there are several distribution companies providing high quality services to fashion suppliers and retailers. Many retail companies outsource their distribution activities to third party logistics (3PLs). Services range from storage and delivery of products to value adding services such as pressing garments (Hoffman, 2006; Speer, 2005; Easey, 2002).

4.3 The case-analysis framework

After the results of the analysis of the main characteristics of the design, sourcing, manufacturing and distribution activities have been presented, the following figure sums-up the general framework of the research in terms of domain.



Source: elaboration by the author.

To better explain this conceptual framework, it will be developed a list of key drivers that allow the analysis of the supply chain strategy and structure adopted by different fashion companies. These key drivers, listed as following, will be further researched and analyzed in a set of cases.

Upstream and downstream supply chain key drivers

Design	**Sourcing**	**Manufacturing**	**Logistics and Distribution channels**
"Trend setter" or "trend follower" strategic approach.	Make or buy mix approach.	Make to order vs. make to stock approach.	Polarized vs. decentralized distribution center.
Degree of exclusivity (style, brand image).	Purchasing to stock vs. purchasing to order approach.	Automation vs. specialized craftsmanship.	Retail vs. wholesale approach
Design lead times.	Types and quality of raw materials.	Location of the manufacturing activities.	Store location.
	Sourcing lead times.	Manufacturing lead times.	Service level.
IT intensity			

Source: elaboration by the author.

These key drivers, characterizing each area of interest, will be held constant during the study and will be investigated in a set of cases, presented in the next chapter.

Chapter 5
Case Studies Discussion

In the previous chapter, as the general framework of investigation has been highlighted, a deep analysis of each area of interest, in terms of the design, sourcing, manufacturing and distribution activities, has been run. After that, a conceptual model of analysis, in terms of key drivers, has been then designed. In this chapter, these key drivers be studied and carried out through the analysis of a set of multiple cases.

5.1 Cases analysis

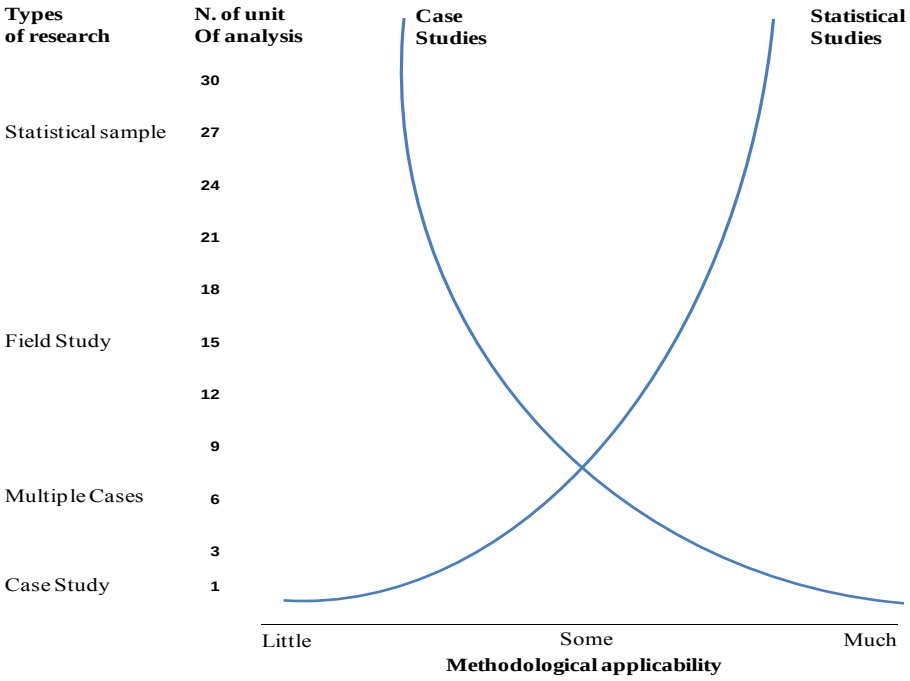
As previously explained, a single in-depth case study research was initially used in order to explore the SC business model applied by a fashion company (P1) and to build the research framework to state the conditions under which a particular phenomenon is likely to be found (Yin, 2004).

The case studies research was then selected within various methodologies to carry out the empirical analysis due to the fact that the second objective of the research is to investigate a specific issue, which is SC strategy for exclusive and available fashion products, with a theory building purpose (Mukherjee et al., 2000; Yin, 2004).

In order to choose the number of cases to be analyzed and studied in the research project, literature on operations case studies methodology has been reviewed.

According to Eisenhardt (1989), while there is no ideal number of cases, a number between four and ten cases usually serves the purpose. With fewer than four cases, it is often difficult to generate theory with much complexity, and its empirical grounding is likely to be unconvincing. With more than ten cases, it quickly becomes difficult to cope with the complexity and volume of the data.

Moreover, McCutcheon and Meredith, (1993), argue that according to a certain number of units being investigated, it will better to adopt a rationalist statistical methodology or a case/field research method. Next figure plots the number of units of analysis in the research study against the applicability of the statistical method and the case/field study method (Meredith, 1998).



Source: adapted from Meredith (1998).

As indicated in the graph, single case study, with its extensive qualitative description and in-depth analysis, is the most applicable method for completely new and exploratory investigations. On the contrary, due to the sample numerical scarcity, statistical methodology is inappropriate. Moving up on the curve Meredith introduces "the multiple cases study of perhaps two to eight situations". Increasing the number of units from eight further into the low teens (13/14) brings to a situation where both statistical and field methods are equally applicable. Further increasing the number of units into the high teens or lower twenties results in a full-fledged field study plus statistical analysis. In this

situation, considerably less qualitative description may be involved, but more statistical measures of variables can be documented. Finally, at the upper twenties and thirties, extensive description is nearly impossible. On the contrary statistical analyses and statistical inferences can be made.

According to Yin (2004), in multiple-case studies design the range of case studies is from six to ten cases. Finally, Voss et al. (2002) argues that "for a given set of variable resources, the fewer the case study, the greater the opportunity for depth of observation".

In order to investigate the research proposition for objective number two, that is to investigate the impact of design, sourcing/purchasing, manufacturing and distribution activities on SC strategy formulation for focal companies producing "exclusive" fashion or "available" fashion products, multiple case study approach, involving a sample of six fashion companies, was adopted. As previously explained, the aim of this part of the research is to understand if supply chain strategies vary according to the fashion exclusivity or fashion availability of products the focal companies produce and/or distribute.

According to Eisenhardt (1989), Meredith (1998), Voss (2002), and Yin (2004) this number of cases can be considered sufficient to give an accurate account in an empirical research, considering that the purpose is mainly theory building.

According to Brunand and Castelli (2008), the sample of companies involved in the research is non-randomly selected indeed a theoretical sample is built. In fact, according to Eisenhardt (1989), theoretical sampling can be more effective in order to have a sample that represents different types of companies. As suggested by Brun and Castelli (2008), as regards the criteria for sample selection, the approach used by Moor et al. (2000) has been adopted in this research. The approach indicates the following characteristics for identifying companies for case study in the fashion industry:

- Company must have an international profile in the fashion industry.
- Their brands have to be established in the fashion business for at least two years.
- They have to market their own label merchandise.
- They have to do it through stores bearing the designer's name or an associated name and/or within other stores, within two or more countries.

The sample includes both large and small/medium firms. The companies were selected in order to cover the two segments proposed in the thesis, namely "exclusive" fashion and "available" fashion. In order to analyze different contexts, a broad variety of products was considered, including textile, apparel, footwear and accessories (eyewear and hand bags). The choice of a heterogeneous sample is due to the purpose of exploring different choices in terms of SC strategy and management in both segments, exclusive and available. Moreover the replication technique was used in the selection phase (Yin, 2004) in order to obtain contrasting results but for anticipated reasons (theoretical replication). Information were collected in the six firms using semi-structured interviews, published case studies, company web sites, financial reports, articles and other documentary analysis.
The following table shows the sample used for case studies in proposition number two.

Company name	**Main Fashion Products**	**Fashion type**	**Products segment analyzed in the case**	**Employees**	**Turnover (mln)**
Loro Piana	Textile and Apparel	Exclusive	Fabrics, men's and women's clothing	2,228	394 €
Luxottica Group	Eyewear	Exclusive	Sunglasses "Ray Ban"	60,767	5,094 €
Gucci Division	Leather goods, apparel, footwear	Exclusive	Leather goods (hand bags)	>7,000	2,266 €
Basicnet	Apparel, footwear and accessories for sport	Available	Sportswear "Robe di Kappa" e "K-way"	344	154 €
Polo Ralph Lauren Corporation	Apparel	Available	Apparel "Polo" by Ralph Lauren	17,000	5,018 $
Adidas Group	Apparel, footwear and accessories for sport	Available	Footwear "adidas"	39,596	10,361 €

Source: elaboration by the author. Data source: Bureau Van Dijk Electronic Publishing – AIDA, 2009.

The following paragraphs will report the analysis of each case.

5.2 Loro Piana Group Case

Company history and profile

Loro Piana is the world's foremost cashmere manufacturer and the largest single buyer of finest wools. Originally from Triverio in Italy the Loro Piana family started as merchants of wool fabrics at the beginning of the 19th century. In the second half of the century, with the beginning of the industrialization, Pietro Loro Piana established the company in Valsesia and founded the Lanificio Fratelli Lora e Compagnia, followed by Lanificio di Quarona di Zignone & C. The current company, Ing. Loro Piana & C., was established in 1924 in Quarona (Valsesia) again by Pietro Loro Piana, great believer in both technological and product innovation, and is the Group's corporate headquarters today. In the post-war period (40's) Franco Loro Piana, nephew of the company founder Pietro, took over the running of the company with his great knowledge of cashmere allowing the company to rapidly enter the international high fashion markets and to be known as a supplier of fine fabrics for the *haute couture* industry. Under his guidance the company rapidly entered the international markets such as Europe, America and Japan exporting selected wools and fine fibers, such as cashmere. The 80's represent a milestone of the company's evolution, due to the opening of Loro Piana subsidiaries in the US and Japan and the launch of its first finished products line. From the eighties on the company has been organized into two divisions: Textile and Luxury Goods. In 1993 Loro Piana opened its first directly operated store (DOS) in New York followed by two more in Milan and Venice in 1998. In 2009, Loro Piana Group turnover was 394 million Euros (Loro Piana internal documentation, 2010).

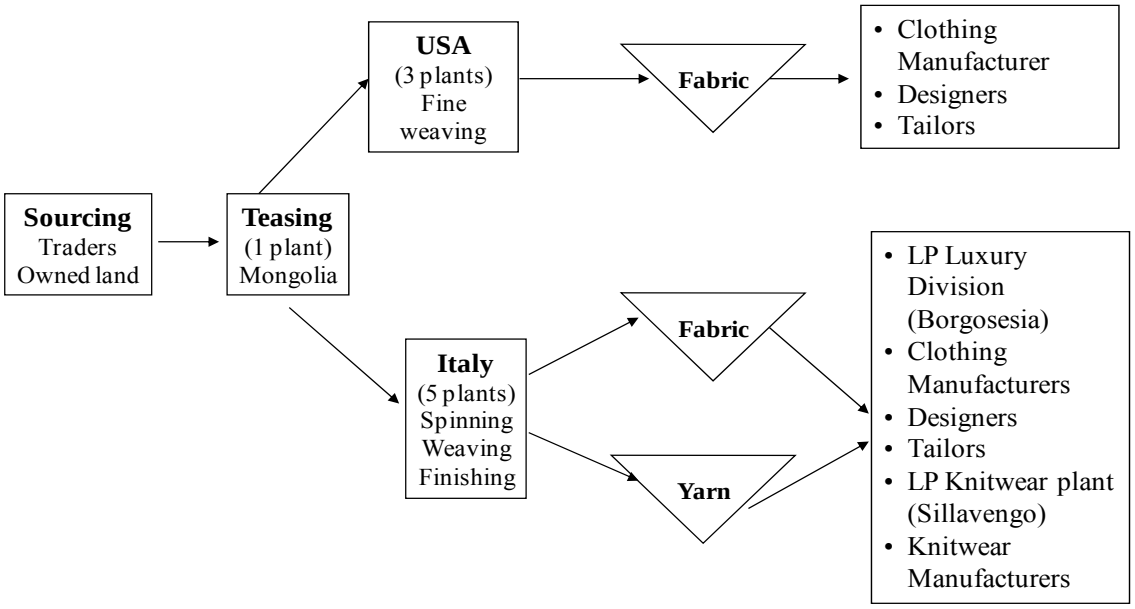
As showed in the next figure, this case will be focused on Loro Piana fabrics, men's and women's clothing.

Source: thesis writer from company website.

Supply chain structure and approaches

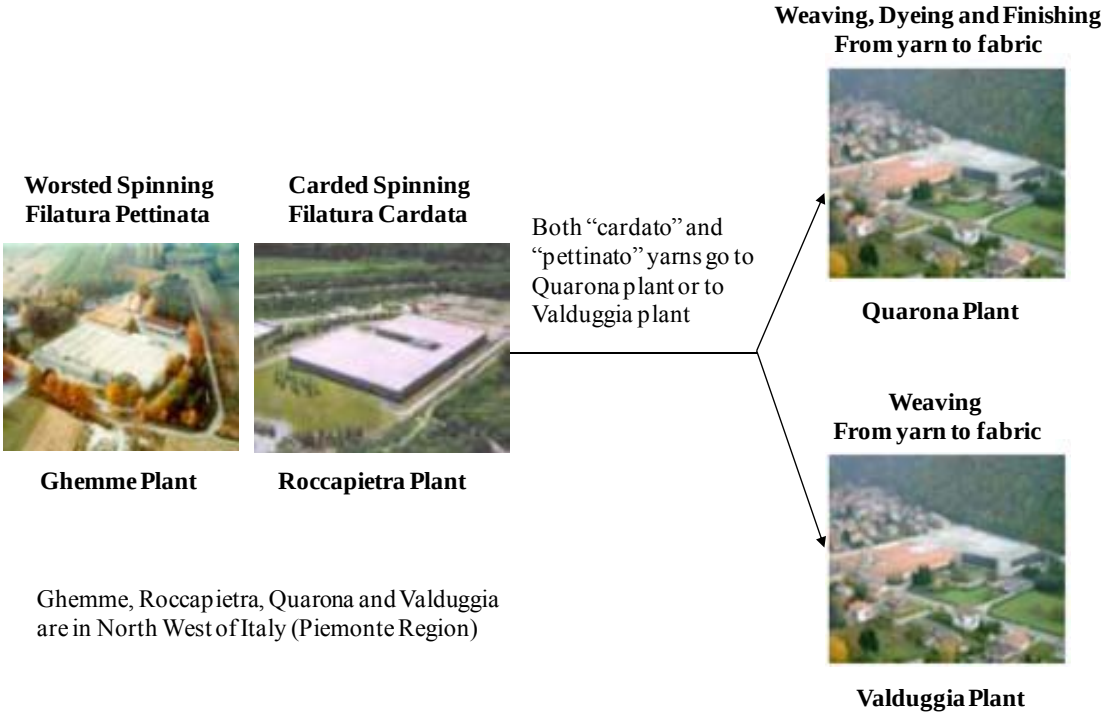
Loro Piana Group has two business divisions: the textile division and the luxury goods one. The textile division is made up by three business units: fabrics, yarns and interiors. The first one produces fabrics for men's and women's formal and informal clothing. Fabrics are designed for Loro Piana Luxury Goods Division and also are sold to world's top manufacturers, designers and tailors. The second one provides yarns that are supplied to the Loro Piana Luxury Goods Division, to designers and to knitwear manufacturers. This BU provides through controlled suppliers more than 100 colors immediately available and technical support to customer's mills. The last one provides exclusive fabrics that are available for architects, interior decorators and final Loro Piana clients.

The textile division supply chain is showed below.



Source: elaboration by the author.

The sourcing activities in terms of purchasing of strategic items (wool, cashmere, etc.) are made directly by the property and are centralized. In order to guarantee the high quality of the raw material Loro Piana has established direct relationships and partnerships with traders in key markets: Peru for vicuña, China and Mongolia for cashmere, Australia and New Zealand for extra-fine wools (i.e. merino wool). Moreover, Loro Piana opened an owned factory in Mongolia dedicated to the collection, the removal of coarse fibers, the washing and the teasing of cashmere. After several finicky quality controls the lots of raw materials are sent to the eight owned plants for the manufacturing activities. Particularly, the following figure shows the activities run in the Italian plants.



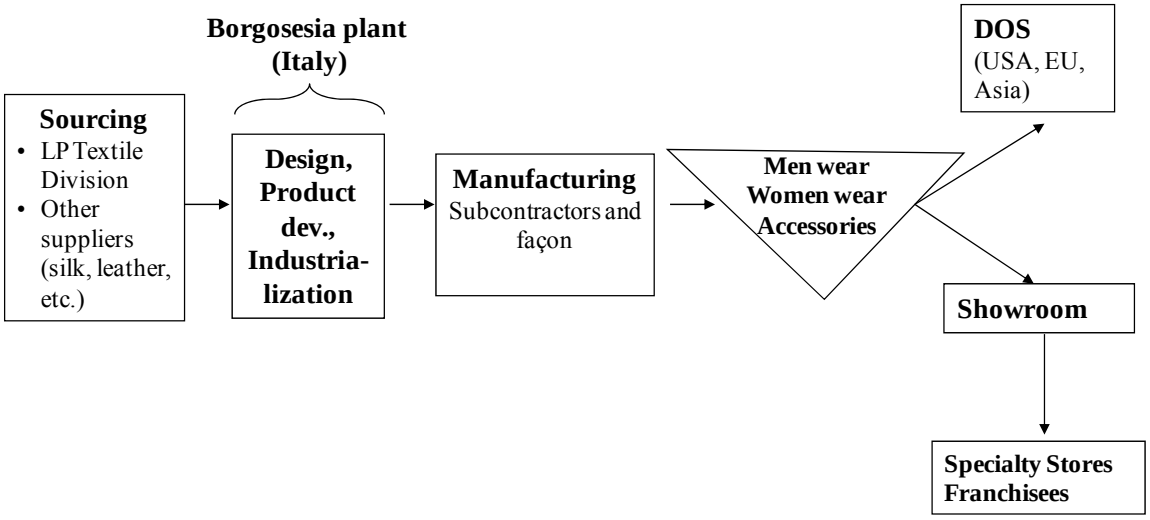
Source: elaboration by the author.

Seventy-five per cent of yarns production is made on forecast (make to stock approach), while the remaining 25% is produced on specific orders. On the contrary, weaving and finishing activities, that means fabrics production, are usually made considering specific customers' orders. Finally, the "custom made service" line, due to the high speed of delivery required, the manufacturing approach adopted is the make to stock one. The custom made service line represents around the 30-40% of the entire fabrics production of the textile division.

The plants are high technology machineries equipped even if some key roles, such as design, quality control, darning and finishing require skilled and experienced workers.

The company has three automated warehouses in Roccapietra (raw materials for spinning), Quarona (raw materials for weaving), Valduggia (raw materials for weaving and for knitting); a manual warehouse at Quarona for finished fabrics; and a manual one at Valduggia for fabrics and yarns used in the custom made service.

Fabrics and yarns are then sold to several customers, such as the Loro Piana luxury goods division, the Loro Piana knitwear plant, as well as independent clothing manufacturers, tailors and designers. Particularly, Loro Piana Luxury Goods division develops, designs and manufactures men's and women's clothing, sportswear, knitwear, home furnishing, accessories, at Loro Piana facilities and through skilled external contractors. The luxury goods division supply chain is showed below.



Source: elaboration by the author.

In terms of sourcing, the main supplier is Loro Piana textile division that provides raw materials expressly made for exclusive high quality garments. Regarding the design process, both Loro Piana Textile Division and Luxury Goods Division are extremely focused on developing new materials and garments that ensure an immediate and unequivocal identification of the style and the brand. The Textile division invests also in R&D activities, developing patented fibers, such as the "Loro Piana Baby Cashmere", the "Pecora Nera" ("black sheep"), the Loro Piana "The Wave" and many others. The Luxury Goods division on also focuses on exclusivity, research, innovation, and above all quality to produce luxury garments and accessories. The creative process at Loro Piana follows a sequence of refinement steps. It starts with the "idea" of the product, supported by sketches or drafts. This idea is then reviewed and selected to become part of a new collection. The

next phase is the preparation of the first styles and samples and, in the end, of the product as such. After the final approval, the manufacturing activities are outsourced in Italy. A network of skilled subcontractors, that work mainly for Loro Piana, cut the fabrics and assemble the final garments that are then carefully checked and controlled by Loro Piana. To avoid a waste of time in searching data, to avoid data duplication and the proliferation of unstructured documents and information, Loro Piana adopted a product data management solution that allows the company to manage the product from the idea to delivery. The solution enables Loro Piana to manage production and sample technical worksheets and to easily customize them for different categories of articles and styles. The technical worksheet header contains identifiers for the style and additional data such as colors and sizes. Furthermore, a configurable list of frames provides a description of all construction and process aspects (including top-stitching, assembly, accessories). The solution generates the codes for raw materials and finished products and then migrates them to the corporate ERP. All product-related data are stored and structured into a database, that is able to record the whole company design and production portfolio. The solution operates on a network system, where different users can access the product data according to their specific profiles. Thanks to the recording of all product-related data and constructional aspects, the solution has contributed to an improved job progress management, establishing a more controlled, visible and secure process, from prototype creation to production.

Finally, in terms of distribution channel, 90% of Loro Piana products are distributed through the retail channel, while the remaining 10% is distributed through selected and exclusive department stores and multi brand stores. Nowadays Loro Piana owns 133 outstanding stores located in exclusive and primary locations worldwide. These direct operated stores distribute luxury sportswear and leisurewear for men, women and children, knitwear, accessories, home collection, bags, shoes and small leather goods. The company is also one of the most important providers of the most complete made-to-measure services available on the market.

5.3 Luxottica case

Company history and profile

Luxottica is a leader in the design, manufacture and distribution of fashion, luxury, sport and performance eyewear. Luxottica Group was founded by Leonardo Del Vecchio in 1961, when he set up "Luxottica di Del Vecchio e C. S.A.S.", which in 1964 became a joint-stock company organized under the laws of Italy under the name of Luxottica S.p.A. Having started out as a small workshop, the Company operated until the end of the 1960s as a contract producer of dies, metal components and semi-finished goods for the optical industry. Leonardo Del Vecchio gradually widened the range of processes until he had an integrated manufacturing structure capable of producing a finished pair of glasses. In 1971, Luxottica's first collection of prescription eyewear was presented at Milan's MIDO (an international optics trade fair), thus marking Luxottica's transition from contract manufacturer to independent producer.

In 1990, Luxottica listed its American Depositary Shares ("ADSs") on the New York Stock Exchange. In 2000, Luxottica's stock was listed on Borsa Italiana's electronic share market (MTA) and has been in Italy's MIB 30 index (today FTSE MIB) since 2003.

Throughout its history, Luxottica has invested in its products. The acquisition of La Meccanoptica Leonardo in 1981, the owner of the Sferofl ex brand and an important flexible hinge patent, enabled the Company to enhance the image and quality of its products and increase its market share. Beginning in the late 1980s, eyeglasses, previously perceived as mere sight-correcting instruments, began to evolve into "eyewear". Continual aesthetic focus on everyday objects and interest on the part of fashion designers in the emerging accessories industry led Luxottica, in 1988, to embark on its first collaboration with the fashion industry, by entering into a licensing agreement with Giorgio Armani. The Company followed up that initial experience (the Armani license terminated in 2003) with numerous others, gradually building the current world-class brand portfolio featuring names like Bvlgari (1996), Salvatore Ferragamo (1998), Chanel (1999), Prada and Versace (2003), Donna Karan (2005), Dolce & Gabbana and Burberry (2006), Polo Ralph Lauren (2007), Tiffany (2008), Stella McCartney and Tory Burch (2009).

As for house brands, the Company slowly expanded in the sun business by buying Vogue (1990), Persol (1995), Ray-Ban (1999) and Oakley (2007).

In 1999, Luxottica acquired Ray-Ban, one of the world's best-known sunglass brand. Through this acquisition, the Company obtained crystal sunglass lens technology and the associated manufacturing capacity, and upgraded its portfolio with brands like Arnette, REVO and Killer Loop. After the acquisition of Ray-Ban, Luxottica engaged in powerful advertising campaigns to re-launch the brand and restore its prestige, which had waned in the 1990s.

In 2007, Luxottica acquired California-based Oakley, a leading sport and performance brand, for US$ 2.1 billion. Oakley, a brand known and appreciated worldwide, owned the Oliver Peoples brand and a license to manufacture and distribute the Paul Smith brand, as well as its own retail network of over 160 stores.

In 2009, Luxottica net sales were 5.1 billion Euros (Luxottica Annual Report, 2010).

As showed in the next figure, this case will be focused on Ray Ban sunglasses.

Source: elaboration by the author from company website.

Supply chain structure and approaches

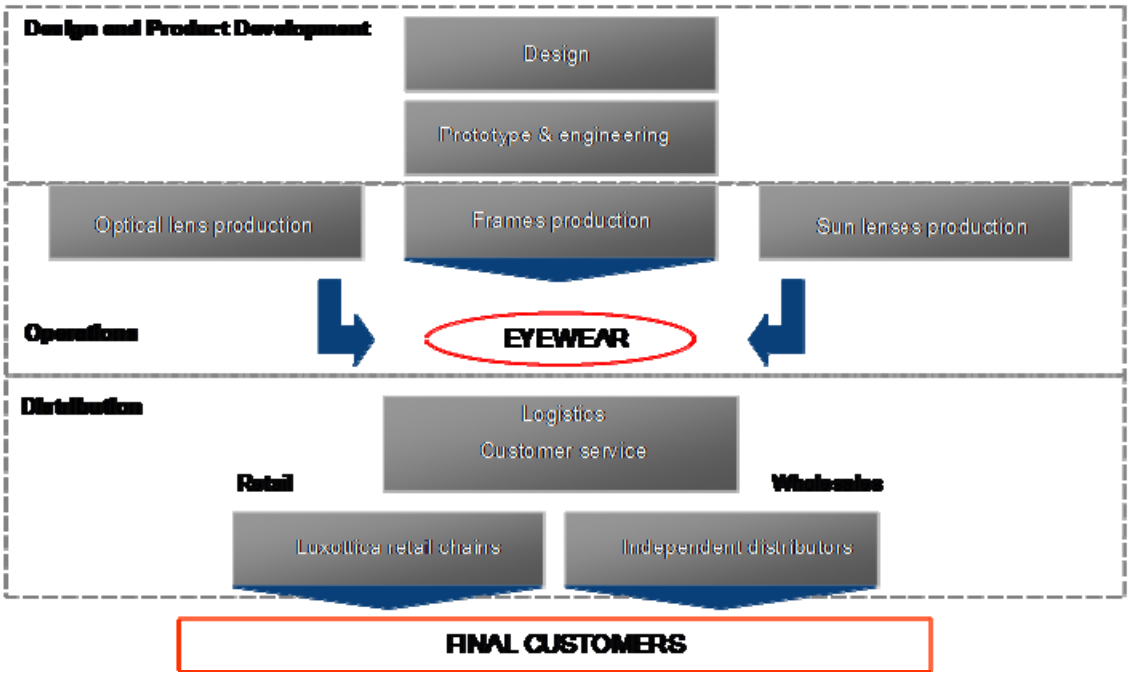
Emphasis on product design and the continuous development of new styles is key to success. Each year, Luxottica adds approximately 2,300 new styles to its eyewear collections. Luxottica's in-house designers oversee the entire concept phase of the creative process, culminating in the creation of the model. At this point, the prototype makers transform designs into one-off pieces, crafted by hand with meticulous precision.

Once the prototypes or style concepts are developed in the initial phase of design, they are passed on to the product department, which uses 3D software to analyze the steps necessary to bring the prototype to mass production.

Three main manufacturing technologies are involved: metal, acetate slabs and plastic (injection molding). At this point in the cycle, the tooling shop puts together equipment needed to make the components for the new model. The first specimens obtained are assembled and undergo a series of tests required by internal quality control procedures.

The next steps are production and quality certification of sales samples of the new models. These samples are subjected to a sequence of tests to ascertain the quality of what has been engineered so far. The final step is the production of an initial significant batch using definitive tooling certified by an external standards organization, in a pilot facility accurately representing the Luxottica plant chosen to mass produce the new model to meet the needs of production planning. Speed and effectiveness in coordinating the various phases enhance overall efficiency. Communication and interaction between people and departments is key to achieving a constant stream of new solutions and a creative process that generates unique products.

Different phases of Luxottica supply chain are showed below.



Source: elaboration by the author on company document.

Regarding the manufacturing activities, as showed in the following table, Luxottica's manufacturing system has two main platforms: Italy and China. Alongside these, the Foothill Ranch facility in California (US) manufactures high performance sunglasses and prescription frames and lenses and assembles most of Oakley's eyewear products, while Oakley's second manufacturing centre in Dayton, Nevada (US), produces the frames used in its X Metal® (a proprietary alloy) eyewear products. Lastly, there is a small plant in India, serving the local market.

Plant	Type of production	Employees	Square meters	Date of incorporationor joining of Group
AGORDO (Belluno)	Integrates the entire production process for metal glasses and injection molded plastic glasses	3,281	82,000	Agordo was Luxottica's plant, incorporated on 27th April 1961.
Sedico, production (Belluno)	Milling of acetate slabs	1,400	31,000	Production started up on 26th August 1985
Sedico, logistics (Belluno)	Group distribution center	458	37,000	2001
Cencenighe (Belluno)	Small metallic parts for all Group plants	341	6,000	Site acquired in 1987
Pederobba (Treviso)	Injected molded nylon and propionate glasses	595	15,000	Site acquired in 1999 (Ray-Ban)
Rovereto (Trento)	Metal glasses	708	22,000	1981
Lauriano (Torino)	Crystal and plastic (polycarbonate and nylon) sun lenses; Persol frames from slabs	558	34,000	Acquired in 1995 along with Persol and extended in 1999 with Ray-Ban.
Guangdong		4,600	53,000	1997
Gabobu Town			80,000	2006
Foothill Ranch (California)	Oakley brand eyewear is produced and assembled			2006
Dayton (Nevada)	Frames used in X Metal (a proprietary alloy) eyewear			2006

Source: elaboration by the author on company document.

Luxottica has seven manufacturing facilities in Italy: six in north-eastern Italy, the area in which most of the country's optical industry is based, and one near Turin. All of these facilities are highly automated, which has made it possible to maintain a high level of production without significant capital outlay. Over the years, the Group has consolidated its manufacturing processes by concentrating a specific production technology in each of the Italian facilities. This consolidation has enabled Luxottica to improve both the productivity and quality of manufacturing operations.

Plastic frames are made in the Agordo, Sedico, Pederobba and Lauriano facilities, while metal frames are produced in Agordo and Rovereto. Certain metal frame parts are produced in the Cencenighe plant. The Lauriano facility also makes crystal and polycarbonate lenses for sunglasses. The Dongguan plants, in China's Guangdong province, make both plastic and metal frames.

In 2009, approximately 46% of the frames manufactured by Luxottica were metal-based, and the remaining was plastic. The manufacturing process for both metal and plastic frames begins with the fabrication of precision tooling based on prototypes developed by in-house designers and engineers. The Group seeks to use its manufacturing capacity to reduce the lead time for product development and thereby adapt quickly to market trends and contain production costs, as well as maintain smaller and more efficient production runs so as to better respond to the varying needs of different markets.

Luxottica engages in research and development activities relating to its manufacturing processes on an ongoing basis. As a result of such activities, Luxottica has invested and will continue to invest in automation and in innovative technologies, thus increasing efficiency while improving quality. In addition, Luxottica utilizes third-party manufacturers to produce Oakley apparel, footwear, watches and certain accessories.

In terms of logistics, the Group's distribution system is globally integrated and supplied by a centralized manufacturing programming platform. The network linking the logistics and sales centers to the production facilities in Italy and China also provides daily monitoring of global sales performance and inventory levels so that manufacturing resources can be programmed and warehouse stocks re-allocated to meet local market demand.

This integrated system serves both the retail and wholesale businesses and is one of the most efficient and advanced logistics system in the industry, with 23 distribution centers worldwide, of which 10 are in the Americas, 8 are in the Asia-Pacific region and 5 are in the rest of the world.

There are 3 main distribution centers (hubs) in strategic locations serving the major markets: Sedico in Europe, Atlanta in the Americas and Dongguan in the Asia-Pacific region. They operate as centralized facilities, offering customers a highly automated order management system that reduces delivery times and keeps stock levels low.

The Sedico hub was opened in 2001 and updated with a new automated system in 2006. It currently manages over 24,000 orders per day, including eyeglasses and spare parts. Sedico ships over 145,000 units daily to customers in Europe, the Middle East and Africa and to the Group's distribution centers in the rest of the world, from which they are then shipped to local customers. The Sedico hub enabled Luxottica to close the local warehouses

throughout Europe that characterized the previous distribution system, improving the speed and efficiency of the distribution, as well as eliminating unnecessary overhead. During 2009, the information system SAP was implemented in the Sedico distribution center. The new system has allowed Luxottica to efficiently control and allocate customers' orders. First opened in 1996, the Atlanta facility consolidated over the years several retail North American based facilities into single state-of-the-art distribution center located in one of the major airport hubs of the United States. This facility has a highly advanced cross-belt sorting system that can move up to 140,000 frames per day. In late 2009, the facility, which was originally a retail-only distribution center, started serving both Luxottica's retail and wholesale businesses in the North American market.

In terms of distribution channels, in the early 1970s, the Company sold its frames exclusively through wholesalers, who sold products to independent stores and distributors. In 1974, after five years of sustained development of its manufacturing capacity, Mr. Del Vecchio understood the importance of a strategy of vertical integration, with the goal of distributing frames directly onto the market. The first step was the acquisition of Scarrone S.p.A., which had marketed the Company's products since 1971 and which brought with it vital knowledge of the Italian market. International expansion began in the 1980s with the acquisition of independent distributors, the opening of branches and the forming of joint-ventures in key international markets. Having started with the opening of the first commercial subsidiary in Germany in 1981, the Company's international wholesale development continued with the acquisition of Avant-Garde Optics Inc., a wholesale distributor in the US market, in the mid-1980s, and the acquisition of Mirari in Japan, in the 1990s. The international expansion of the wholesale distribution network continues today as the Group opens new distribution channels in emerging markets. In 1995, Luxottica acquired The United States Shoe Corporation, owner of LensCrafters, one of North America's largest optical retail chains. As a result, Luxottica became the world's first significant eyewear manufacturer to enter the retail market, thereby maximizing synergies with its production and wholesale distribution and increasing penetration of its products through LensCrafters stores. Since 2000, Luxottica has strengthened its retail business by acquiring a number of chains, including Sunglass Hut (2001), a leading retailer of premium

sunglasses, OPSM Group (2003), a leading optical retailer in Australia and New Zealand, and Cole National (2004), bringing with it another leading optical retail chain in North America, Pearle Vision, and an extensive Licensed Brands store business. In 2005, the Company began its retail expansion into China, where LensCrafters has since become a leading brand in the high-end market. Since 2006, the Group has started to expand Sunglass Hut globally in high-potential markets like the Middle East, South Africa, Thailand, India and the Philippines. During this time, the wholesale segment has supported Luxottica's new licensing agreements with an increasing commitment to research, innovation, product quality and manufacturing excellence, while distribution expanded in the direction of customer differentiation and emerging sales channels, such as large department stores and travel retail.

Nowadays, the distribution structure covers more than 130 countries, each wholesale subsidiary operates its own network of sales representatives who are normally retained on a commission basis. Customers of the wholesale business are mostly retailers of mid- to premium-priced eyewear, such as independent opticians, optical retail chains, specialty sun retailers and duty-free shops. In North America and some other areas, the main customers also include independent optometrists, ophthalmologists and premium department stores.

Certain brands including Oakley are distributed also to sporting goods stores and specialty sports stores, including bike, surf, snow, skate, golf and motor sports stores.

Finally, in terms of retail network, Luxottica manages 6,217 stores in the world, 535 of which are in franchising. With a strong portfolio of retail brands, Luxottica is well positioned to reach different segments of the market. The retail portfolio offers a variety of differentiation points for consumers, including the latest in designer and high-performance sun frames, advanced lens options, advanced eye care, everyday value and high-quality vision care health benefits.

5.4 Gucci Case

Company history and profile

Gucci Group is owned by PPR, a global player in the retail and luxury goods, and is one of the world's leading multi-brand luxury goods company. The Group brand portfolio includes prestigious and clearly identified luxury brands with a distinctive and specific role. Gucci, Bottega Veneta and Yves Saint Laurant are the engines of organic growth. Boucheron offers complementary expertise in segments like jewellery and watches. Balenciaga, Stella McCartney, Alexander McQueen and Sergio Rossi are cutting-edge brands with high potential for long-term growth. The Group creates and distributes luxury goods including ready-to-wear, handbags, luggage, small leather goods, shoes, jewellery, ties and scarves. Also, under license from global industry leaders, eyewear and fragrances, cosmetics and skincare products. In 2009, Gucci Group turnover was 3.390 million Euros (Gucci internal documentation, 2010).

In 1921, Guccio Gucci opened a leather goods company and small luggage store in his native Florence, in order to characterize Gucci's products with the master craftsmanship of local Tuscan artisans. Within a few years, the label enjoyed such success the sophisticated international clientele on vacation in Florence thronged to Gucci's bottega, seeking the equestrian-inspired collection of bags, trunks, gloves, shoes and belts. Many of Guccio's Italian clients were local horse-riding aristocrats, and their demand for riding gear led Gucci to develop its unique Horsebit icon - an enduring symbol of the fashion house and its increasingly innovative design aesthetic. Faced with a shortage of foreign supplies during the difficult years of Fascist dictatorship in Italy, Gucci began experimenting with atypical luxury materials, like hemp, linen and jute. One of its artisans' most subtle innovations was burnishing cane to create the handle of the new Bamboo Bag, whose curvy side was inspired by a saddle's shape. During the Fifties, Gucci again found equestrian inspiration with its trademark green-red-green web stripe, derived from a traditional saddle girth. It became an instant success and an instantly recognizable hallmark of the brand. Opening stores in Milan and New York, Gucci started to build its global presence as a symbol of modern luxury. With the passing of Guccio Gucci in 1953, his sons Aldo, Vasco, Ugo and

Rodolfo took over the business. Gucci products quickly became renowned for timeless design and were cherished by iconic movie stars and figures of elegance in the Jet Set era. In the mid-60s, Gucci adopted the legendary interlocking double G logo, creating yet another chic Gucci visual insignia and continuing its expansion abroad with stores opening in London, Palm Beach, Paris and Beverly Hills. In the 70's Gucci set its sights on the Far East opening stores in Tokyo and Hong Kong and the company developed its first ready-to-wear collections and the brand became famous for its legendary Italian quality and craftsmanship. In 1982, Gucci became a public limited company and in 1994 Tom Ford became creative director of Gucci infusing the luxury brand with a sense of daring and provocation and a uniquely glamorous vision. In 1995 Domenico De Sole was appointed CEO and Gucci made the highly successful transformation to a fully public company. In 1999, Gucci entered into a strategic alliance with Pinault-Printemps-Redoute, transforming itself from a single brand company into a multi-brand luxury group. In 2009, Gucci turnover was 2,266 million Euros (Gucci internal documentation, 2010).

As showed in the next figure, this case will be focused on Gucci leather goods (hand bags).

Source: elaboration by the author from company website.

Supply chain structure and approaches

Gucci's strong heritage is built on key critical foundations of uncompromising quality, superior craftsmanship and a unique design. Through the years, Gucci designers have created iconic brand symbols, such as Horsebit, Bamboo handles, GG logo, green/red/green web, and Flora, which were re-invented and reinterpreted in a modern way. The development of new products and new collections starts with the tight cooperation among designers, merchandising managers and product development department. From receiving designers and stylist's drawings, prototypes must be supplied within two weeks. These prototypes are considered both in terms of style and of manufacturing methods and costing. On this basis a limited set of samples is prepared within a week. During the fashion show, Gucci presents the sample items, having defined a 'cost-price list'. Once the new collection has been presented, there is usually a week for fine tuning and finishing all sample items that will be presented for the sales campaign. During this period, some items are cancelled and others modified, cost adjustments are made and the definitive price list prepared. There is then a two-week sales campaign. At the end of the sales campaign, orders are collected and consolidated. If an item fails to collect a minimum number of orders, it can be removed from the collection. Some purchase orders will already have been made by Gucci on its supplier network. These orders are based on preliminary bulk orders from Gucci internal merchandising.

However it is only after the sales campaign has been closed - and the order portfolio completed and frozen - that the detailed production plan is defined. Depending on order timing and destination, a delivery window is fixed for each collection. Customer orders are aggregated into production orders and operations has to respect the agreed delivery windows by allocating materials and manpower to the different production orders.

The following table shows the main activities needed for launching a new collection in terms of tasks, responsibilities and dates.

Responsibility	Period of time	Activities
Designers, Merchandising, Product development dep.	First two weeks of September (01/09-Sep)	Delivery of design
Pattern maker dep.	First two weeks of September (03/15-Sep)	Prototypes preparation
Designers, Product development dep., Pattern maker dep.	Mid September (15/16-Sep)	Prototypes final revision
Designers	Third week of September (17/18-Sep)	New collection launch
Product development dep.	Third week of September (18/19-Sep)	Materials orders for samples
Technical dep.	Fourth week of September (22/23-Sep)	Collection of technical data for samples
Raw materials warehouse	Fourth week of September (23-Sep)	Materials are sent to suppliers
Operations dep., Costing	Fourth week of September (26-Sep)	Samples delivery
Finished products warehouse	Fourth week of September (26/27-Sep)	Samples delivery to showrooms
Technical dep.	Fourth week of September (29-Sep)	First cost-price list
	First week of October	Fashion show (for example, Paris)
Design team	First week of October (03-Oct)	Eventual modifications
Technical dep., Costing	First week of October (03/09-Oct)	Final cost-price list
Marketing and sales dep.	First week of October (07-Oct)	Sales campaign

Source: elaboration by the author on company document.

In terms of sourcing, Gucci relies on a limited number of highly specialized suppliers, most of which are based in Italy. Major raw materials are leather and canvas. Referring to the finished product over 50% of its cost is made by the purchase of the raw material, all other components, for instance clips and clasps, account for only a very minor portion of costs. The lead time for sourcing raw leathers is defined by natural environmental cycles and

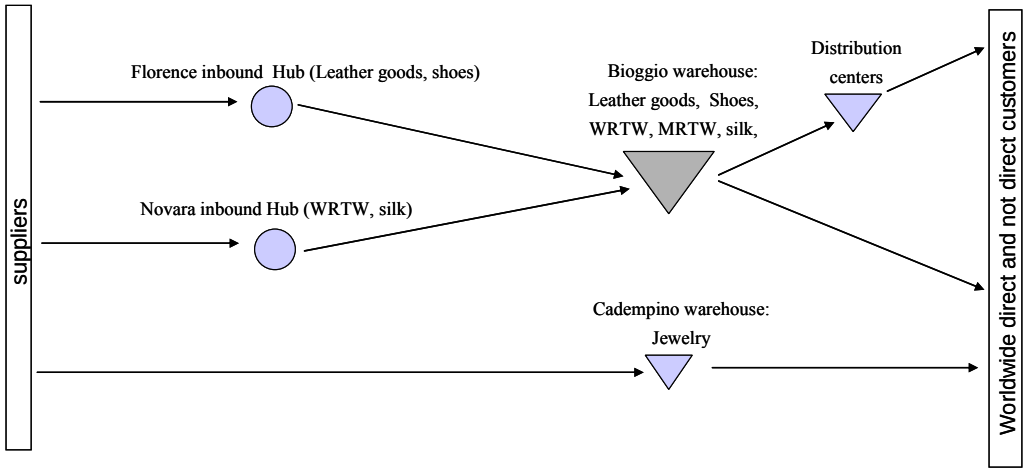
depends on leather types and characteristics. On average the sourcing lead time is about 8/112 weeks, so Gucci maintains about two months of raw material inventory.

A tradition of craftsmanship continues to prevail with in the Gucci manufacturing process, which is very labor intensive and requires highly skilled employees. Gucci plans, creates and guarantees the high quality of its own products, relying on a highly specialized external production network. Production activities – controlled and coordinated by Gucci Logistica – are carried out by a broad and flexible supply network both for materials/components production (from leather tanning to metallic accessories) and for end products preparation and assembly. All end product suppliers of leather bags and accessories that represent the majority of Gucci division turnover are based in the Florence region. The supply network comprises more than 600 firms with an overall employment of roughly 4,000 people. It can be estimated that about 80% of the tasks carried out in the operations of a Gucci handbag is done by hand. As a consequence, training is particularly important. The manufacturing process is aimed at ensuring very high quality standards and all the manufacturing activities are done in Italy mostly in order to maintain the "made in Italy" label which is seen as very valuable by some customers, especially in Asia. Despite the high degree of craftsmanship required, some activities, such as cutting, can be highly automated and Gucci is able to combine successfully manufacturing technologies with highly skilled craftsmanship. The subcontractors are organized in two tiers and there are three kinds of subcontractors: partner, 100% of the production capacity is absorbed by Gucci; integrated, can produce for Gucci but also for others companies; "others suppliers", non stable relationship but just a production capacity buffer.

In order to coordinate all suppliers' activities, Gucci has adopted a web based supplier management system which enables the company to publish in real time the production plans of all producers, who have then wide and immediate visibility over forthcoming activities. Producers can indicate every step of the production process online and thus instantly inform Gucci when a task is completed.

Gucci distributes its own products directly throughout the world. Regarding the logistics activities, as showed in the next figure, a main warehouse located in Bioggio, Switzerland, globally centralizes the logistics function for all Italian plants. Goods manufactured in

Gucci supplier's plants and workshops are forwarded daily to the logistic center. In addition to its leading role in organizing flows and managing inventory, the logistics center also handled returns, in terms, for instance, of unsold, damaged, out of fashion or faulty products. Gucci also works with several distribution centers worldwide. They provide the Company with storage facilities in areas where operating out of the central logistic center would have been too expensive and too complicated both in terms of difficult access because of the distance.



Source: elaboration by the author on company document.

Gucci products are sold mainly through a network of directly operated stores (283 at December 2009) that are located in major markets throughout the world. The company also sells its products in the wholesale channel through a small number of selected franchise stores, duty free boutique, leading department stores and specialty stores. Ecommerce also represents a complementary valuable channel, ensuring an exclusive and luxurious shopping experience.

5.5 Basicnet Case

Company history and profile

The BasicNet Group operates in the sport and leisure apparel, footwear and accessories sector through the Kappa, Robe di Kappa, K-Way; Superga, AnziBesson, Lanzera and Jesus Jeans trademarks.

Particularly, Kappa was founded in the Italian city Turin in the 1950s. The Maglificio Calzificio Torinese (MCT), already a leading manufacturer of socks and underwear in Italy, created Kappa, a sub-brand of the Aquila brand, as a result of a production problem that had caused a loss in sales. The crisis spurred MCT to launch a renewed and improved product line which would be tagged K, in an attempt to achieve new credibility with regard to quality. Sales boomed and in the seasons to come, market demand for garments with the K kept growing. This was the mid-1950s, and Kappa had become a consolidated brand, in Italy the undisputed leader in the socks and underwear sector. In 1969 the textile industry was hit by recession and the whole period was marked by social change. MCT's response was to diversify production. The students' movement had introduced the concept of casual wear, and MCT management decided to start up production of outerwear, based on the success of the firm's best-selling brand. In that period Robe di Kappa brand was born. Around the end of the 1960s, the firm had shifted from making socks and underwear to casual clothing. In 1976, when Mr. Boglione joined MCT at the age of 20, Turin had a huge clothing manufacturing industry and MCT had 600 workers on its payroll (albeit down from 1,600 in 1964). However it had continued to make clothing, including most notoriously its Jesus Jeans ("Who loves me follows me", said provocative advertisements showing be-jeaned female backsides), under Mr. Boglione's prompting, MCT had expanded into sportswear at the end of the 1970s, sponsoring star-studded soccer teams such as Turin's Juventus and Amsterdam's Ajax

At the beginning of the 90's MCT was sliding into bankruptcy and in January 1994, Mr. Boglione decided to buy the assets of the company and founded BasicNet. But he has in mind to transform his company from a manufacturing one to a new ideal economic subject, returning value to and commercializing owned trademarks. Dismissed the almost 200

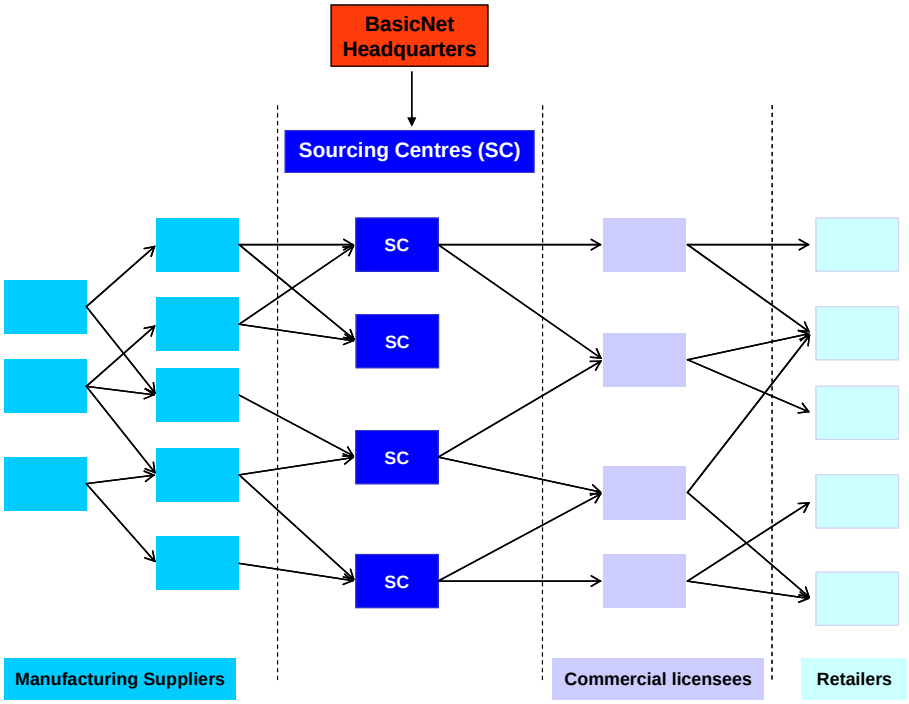
weaving machines, he begun a transition from a traditional structure of a clothing company to a network business model, considered necessary to allow a strategy of internationalization on the world market. In February 2004 K-Way and Superga became part of the group's trademark portfolio, followed later by Anzi Besson in January 2010. In 2009, BasicNet turnover was 154 million Euros (BasicNet internal documentation, 2010).
As showed in the next figure, this case will be focused on Robe di Kappa and K-way sportswear.

Source: elaboration by the author from company website.

Supply chain structure and approaches

From the start at BasicNet, Mr. Boglione created a virtual company, a paperless business in which as much as possible took place online. The firm makes nothing itself; it is simply a network of sourcing centers and territorial licensees for its brands.
The BasicNet Group has planned its development on a "network" business model, identifying in the licensee, the ideal partner for the diffusion, distribution and provisioning of its own products in the world, choosing to face up to this, not as a product supplier in itself, but as a supplier of an integrated service offer.

Innovative, flexible and modular, the business system has allowed the Group to grow rapidly whilst maintaining a light and agile structure. A large company made up of many small companies linked together by a single data processing platform, completely integrated with the network through the internet, and studied for the real time sharing and maximum exploitation of information. The following figure shows the Group business system.



Source: elaboration by the author.

The head of the BasicNet Group takes care of the strategic work referred to several activities such as product research and development, global marketing (the company is owner of important technical sporting and merchandising sponsorship contracts, also with international visibility), licensee network development and coordination, strategic finance, information technology and creation of new software to allow the on line management of every process in the offer chain. The sourcing centers are required to manage the productive flow of BasicNet branded finished products that are then distributed by the

commercial licensees in the areas of their competence. In order to find quality-conscious, cost-effective manufacturers worldwide able to provide the highest-quality goods, reliable and on-time delivery, that is to build the best suppliers' network, the Group sourcing centers often work with a Chinese company named Li & Fung Limited. Nowadays Li & Fung Limited, founded in 1906, is one of the biggest exporters in the world trading several different products such as garments, sporting goods, footwear, toys, travel goods, home products, stationery, etc. Based in Hong Kong, in 2008 it has 80 buying offices in about 40 countries, 14,000 employees and 12,000 international suppliers, with a turnover of 14.2 billion Dollars and an operating profit of 400 million Dollars. As well as for BasicNet, also Li & Fung works with no factory, no warehouse, no machinery, no production lines. It is a "virtual" kingdom of manufacturing where Li & Fung can process around 3,000 orders from all over the world on daily bases. For example, when BasicNet makes its order to Li & Fung, the company will find the most suitable producers through its network, and immediately organize them to fulfill the client's order. Li & Fung has an extensive network of suppliers that allows customers to take advantage of the most efficient manufacturing base for each part of the manufacturing process. In order to "produce" its product Li & Fung has to: dissect production steps; find best factory for each step; locate and reserve materials for each step; lock up capacities at each step; coordinate production plans at each step; plans inter-factory material flows and finally monitor all schedules and deliveries. To do this, Li & Fung uses an IT system that centralizes data across multiple offices, allowing an executive anywhere in the world to access information about Li & Fung's supplier base and track orders.

Regarding BasicNet commercial licensees, they are defined on a territorial basis or by specific market categories, and are entrusted with enhancing the activity of local marketing and the territorial logistics by distributing the products to the retailers. Within the development of its own business system, the Group has also organized the system of direct sale to the public, at present managed by the Group-owned Italian licensee, BasicItalia. Through its subsidiaries RdKO s.r.l., Allo Spaccio s.r.l. and Basic Outlet s.r.l., BasicItalia also manages the group's points of sale within the franchising project. In fact, within the retail project different insignias have been developed to cover the three primary levels of

the retail market in which the Group is present in Italy through direct sale to the public. These are mono-brand shops, located in the historic centers, streets or shopping centers with specific franchising agreements; brand outlet situated in the Outlet Villages; and, finally, Discount stores, called "alloSpaccio", located in shopping malls or industrial areas converted to retail. All three formats have been developed with the objective of making them reproducible in different numbers and market conditions. Although the Group developed in the last few years a retail channel, the primary distribution channel is represented by the wholesale (multi-brand stores, department stores, malls, etc.).

One of the most strategic strengths of the Group is represented by its web integration. The data processing platform is one of the principal strategic investments of the Group to which maximum attention has been dedicated, both in terms of human resources and centrality in the business system's development. This platform has been conceived and developed with a view towards complete integration with the web, interpreted by the Group as the ideal instrument for communication between the elements that make up the network. The Information Technology department therefore works on the design and implementation of a data gathering and transmission system to link the companies within the BasicNet network both among themselves and externally. With this in mind the business plan has been designed based on the so-called e-process, in other words, through dotcom divisions that each carry out a part of the productive process and propose it to the other divisions, exclusively using on-line transactions for exchange and negotiation.

5.6 Polo Ralph Lauren Case

Company history and profile

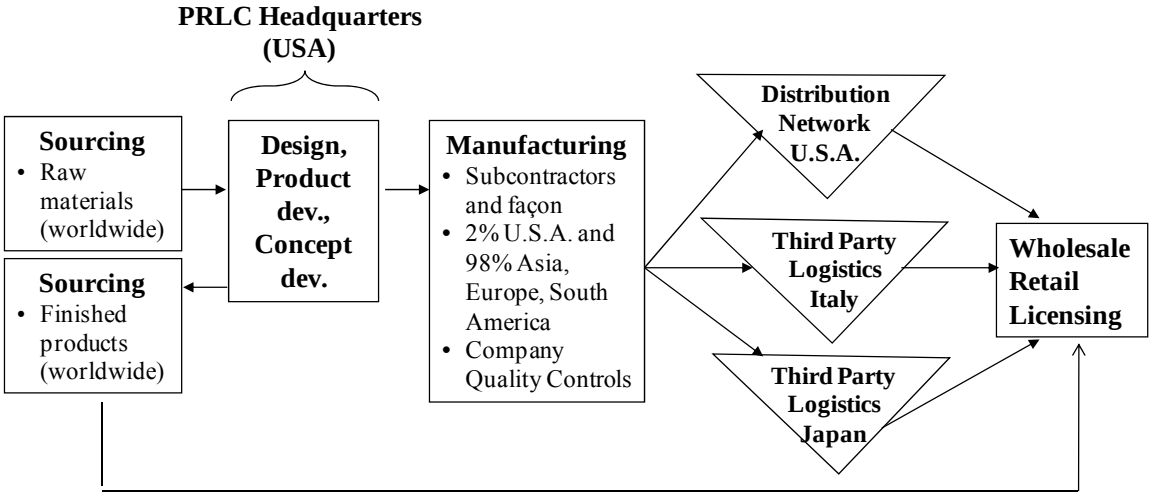
Polo Ralph Lauren Corporation (PRLC) was created by Ralph Lauren, originally Ralph Lifshitz of Bronx, NY, when he first started selling creatively designed ties in 1967. The popularity of the Polo label led to the first boutique being opened in Bloomingdales in 1969 and a women's line added to the men's collection in 1971. Success of the line continued with the establishment of the first American boutique in Europe, in London, in 1981 with a further store opened in Paris in 1986. Also, the Ralph Lauren Home Collection was started in 1983. Of note, the Polo sport line was launched in 1993 for men and in 1996 for women. In 1997 Polo Ralph Lauren Corporation was listed at the New York Stock Exchange (NYSE: RL). The company opened the first European children's store by an American designer in 1999. For more than 40 years, Polo's reputation and distinctive image have been consistently developed across an expanding number of products, brands and international markets. PRLC, often described as all-American, timeless sportswear and classic chic, is a leader in the design, marketing and distribution of premium lifestyle products in four categories: apparel, home, accessories and fragrances. Company's brands include Polo by Ralph Lauren, Ralph Lauren Collection, Ralph by Ralph Lauren, Ralph Lauren Black Label, Ralph Lauren Purple Label, Lauren for Men, Ralph Lauren Blue Label, Lauren by Ralph Lauren, Lauren Jeans & Co., RRL, RLX, Polo Golf and Ralph Lauren Golf, Pink Pony, Rugby, Ralph Lauren Childrenswear, Ralph Lauren Home, Lauren Home, Ralph Lauren Paint, Accessories, Fragrance, Club Monaco American Living, and Chaps. The Company's brand names constitute one of the world's most widely recognized families of consumer. In 2009, Polo Ralph Lauren Corporation turnover was 5,018.9 million Dollars (PRLC Annual Report, 2009).

As showed in the next figure, this case will be focused on Polo By Ralph Lauren apparel.

Source: elaboration by the author from company website.

Supply chain structure and approaches

As showed in the following figure, all PRLC products are designed under the direction of Ralph Lauren and company design staff, which is divided into nine departments: Menswear, Women's Collection, Women's Ready to Wear, Dresses, Children's, Accessories, Home, Club Monaco and Rugby. The Company forms small-medium size design teams around its brands and product categories to develop concepts, themes and products for each brand and category. Through close collaboration with merchandising, sales, production and sourcing/purchasing staff, these teams support all three segments of PRLC business, namely wholesale, retail and licensing, in order to gain market.



Source: elaboration by the author.

The Company sources both finished products and raw materials. Raw materials include fabric, buttons and other trim. Finished products consist of manufactured and fully assembled products ready for shipment to PRLC customers.

PRLC contracts for the manufacture of its products and does not own or operates any production facilities. Over 350 different manufacturers worldwide produce apparel, footwear and accessories products, with no one manufacturer providing more than 8% of company total production[1] (PRLC Annual Report, 2009). In fiscal year 2009, less than 2%, by dollar volume, of PRLC products were produced in the U.S., and over 98%, by dollar volume, were produced outside the U.S., primarily in Asia, Europe and South America. Suppliers operate under the close supervision of Company global manufacturing division and buying agents headquartered in Asia, the Americas and Europe. All garments are produced according to Company specifications. Production and quality control staff in the Americas, Asia and Europe monitors manufacturing at supplier facilities in order to correct

[1] Because the U.S. and the other countries in which PRLC products are manufactured and sold may, from time to time, impose new duties, tariffs, surcharges or other import controls or restrictions, including the imposition of "safeguard quota," or adjust presently prevailing duty or tariff rates or levels, the Company maintains a program of intensive monitoring of import restrictions and opportunities. PRLC seeks to minimize its potential exposure to import related risks through, among other measures, adjustments in product design and fabrication, shifts of production among countries and manufacturers, as well as through geographical diversification of its sources of supply (PRLC Annual Report, 2009).

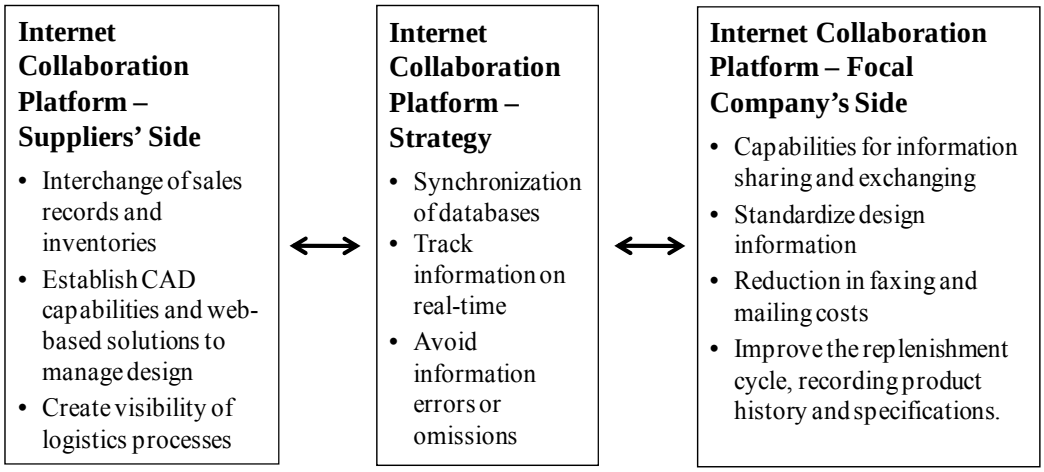
problems prior to shipment of the final product. Procedures and compliance programs have been implemented so that quality assurance is focused upon as early as possible in the production process, allowing merchandise to be received at the distribution facilities and shipped to customers with minimal interruption.

Most of the businesses in PRLC wholesale segment have to commit to manufacture garments before the Company receives customer orders – generally PRLC receives wholesale orders for apparel products approximately three to five months prior to the time the products are delivered to stores. If the Company overestimates its primary customers' demand for a particular product, it may sell the excess in its factory stores or sell the product through secondary distribution channels. PRLC also has to commit to purchase fabric from mills well in advance of its sales. If the Company overestimates the need for a particular fabric or yarn, that fabric or yarn may be used in garments made for subsequent seasons or made into past seasons' styles for distribution in PRLC factory stores.

To avoid the risks related to blind purchasing and production capacity allocation, in 1998 PRLC implemented a SC project with two of its first-tier partners in order to increase partner's participation in streamlining Company's processes from sourcing goods and raw materials to distributing finished products to stores (Yen et al., 2006). Particularly, the SC project involved Ruentex and Luen Thai.

Ruentex Industries Limited based in Taipei (Taiwan), through its subsidiary, Chin-An Investment Company Limited, engages in the textile, construction, and wholesale businesses. Regarding the textile field, its activities include yarning of natural cotton, chemical fiber, synthetic fabric, and line wool; and manufacturing, processing, finishing, printing, and marketing of weave cloth and knitted fabric products. The company also engages in the import and export of fabric products and materials and import of raw cotton, chemical fiber, dyeing materials, and raw materials. Luen Thai Holdings Limited (Hong Kong), together with its subsidiaries, is one of the leading apparel manufacturing and supply chain services providers worldwide. The company produces more than 70 million pieces of garments annually with products ranging from casual wear, ladies' wear (intimate, career and fashion wear), sports and activewear, pants, sweaters, outerwear, denimwear and children's wear.

The main objective of the SC project was to let PRLC focus on its core business of marketing fashion products by developing process efficiency in transforming fabric into fashion garments through better process management between PRLC, Ruentex and Luen Thai. The goal was reached through a technology integration between the three players that allowed a near real-time information exchange. Technology integration consisted in the adoption and implementation of several internet-base solutions. For instance, to enable the design process to become more collaborative between all the actors involved, that is designers, manufacturers, suppliers and customers, a specific website was designed allowing suppliers to search for design specifications and images online, ensuring clear communication and maintenance of design standards and quality requirements. From a logistic point of view, in order to guarantee a continuous replenishment, Vendor Management Inventory (VMI) approach was adopted. Thanks to the VMI approach, PRLC created purchase orders based on warehouse or store demand levels and real-time sales information, which were communicated electronically to Luen Thai. Finally, the internet also acted as the coordination mechanism for all three partners to establish a common distribution platform and established standardized logistics EDI to create an efficient design process and logistics process management system, embedded with information. The following figure summarizes the goals reached by the three different players involved in the SC project, through the implementation of a platform for collaboration.



Source: Adapted from Yen et al., 2006.

Generally speaking, PRLC management information systems support the marketing, manufacturing, importing and distribution of its products by providing a comprehensive order processing, all the production and accounting information and an enterprise view of information for all Company functions involved.

The point-of-sale registers in conjunction with other systems in PRLC stores enable the Company to track inventory from store receipt to final sale on a real-time basis. Company merchandising and financial systems, coupled with its point-of-sale registers and software programs, allow for stock replenishment, effective merchandise planning and real-time inventory accounting. PRLC also utilizes an automated replenishment system to facilitate the processing of basic replenishment orders from its retail segment and wholesale customers, the movement of goods through distribution channels, and the collection of information for planning and forecasting.

Regarding logistics activities, to facilitate distribution in the U.S., PRLC products are shipped from manufacturers to a network of distribution centers for inspection, sorting, packing and shipment to retail customers. This network includes Company distribution center in North Carolina, third party logistics centers primarily in California and, for Childrenswear products, a leased distribution center in West Virginia. PRLC full-price store, factory store and Club Monaco shipments are distributed through this network. All facilities are designed to allow for high density cube storage and utilize bar code technology to provide inventory management and controls. European distribution has been consolidated into one third party facility located in Italy (Parma) and Japan logistics have been consolidated into one third party facility in Kawasaki.

Finally, in terms of distribution channels, PRLC operates in three distinct segments: wholesale, retail and licensing. In fiscal year 2009, net revenues for the first segment were 2.887,2 million Dollars (57%), for retail were 1.936,5 million Dollars (39%) and for licensing were 195,2 million Dollars (4%) (PRLC Annual Report, 2009). Regarding the wholesale channel, as of the end of fiscal year 2009, the Ralph Lauren-branded products were sold through approximately 6.100 doors worldwide. Department stores are the major wholesale customers in North America. In Europe, wholesale sales are a varying mix of

sales to both department stores and specialty shops, depending on the country. In Japan, products are distributed primarily through shop-in-shops at department stores.

Retail segment consists of 163 full-price retail stores, 163 factory stores worldwide, and two e-commerce websites (www.RalphLauren.com and www.Rugby.com).

PRLC licensing business consists of royalty-based arrangements under which the Company licenses the right to third parties to use its various trademarks in connection with the manufacture and sale of designated products, such as apparel, eyewear and fragrances, in specified geographical areas for specified periods.

5.7 Adidas Case

Company history and profile

Adidas Group, the parent company of Adidas, Reebok and TaylorMade Golf – Adidas Golf, is a global leader in the sporting goods industry and offers sports footwear, apparel and accessories. In 2009, Adidas Group turnover was 10.381 million Euros (Adidas Annual Report, 2009). Adidas Group headquarters is based in northern Bavaria in Germany. The company was founded by Adolf Dassler after the end of the First World War. In 1924 his brother Rudolf Dassler joined the venture and the Dassler Brothers Shoe Factory was born. Their first big break came in 1936 when the company supplied US sprinter Jesse Owens with studded running shoes for that years Berlin Olympics. Owens famously won four gold medals at the event and thereby cemented the reputation of Dassler shoes. Before the start of the Second World War sales were up to 200,000 pairs of shoes a year. The name "Adidas" is a combination of the company's founder's names abbreviated.

Nowadays, the Adidas Group organizes its three business segments by brand: Adidas, Reebock and Other Business segment (Taylor Made, Rockport, and Reebok-CCM Hockey).

Adidas brand is the ultimate profit driver for the Adidas Group, accounting for 72% of all group sales in 2009, that means that Adidas segment had total revenues of €7.474 million (Adidas Group annual report, 2009). The brand, which was restructured during 2007, now consists of 2 segments: Sports Performance (78% of Adidas segment sales) and Sports Style (22% of Adidas segment sales). This brand, which employs a premium-price strategy, sells items in sporty fashion, apparel, and footwear.

Reebok brand accounts 16% of 2009 net sales, which is €1,661 million. Reebok has been acquired by Adidas Group in 2006. Since then, the group has been trying to reposition the Reebok brand image as a specialist in the women's, fitness, and running markets, to limited success. The combination of the Adidas and Reebok brands obtained 53% of sales from Europe, compared to 20% in North America.

Finally, Other Business segment is made by three brands. The first is "TaylorMade – Adidas Golf", 8% of 2009 net sales (that is €830 million), is comprised of TaylorMade

(clubs and balls) and Adidas Golf, (footwear and apparel). The other two brands are Reebok-CCM Hockey (2% of 2009 net sales), and Rockport (2% of 2009 net sales). Totally, Other Business segment had total revenues of €1,246 million (Adidas Group annual report, 2009).

As showed in the next figure, this case will be focused on Adidas footwear.

Source: elaboration by the author from company website.

Supply chain structure and approaches

Adidas strategy states that the Group is committed to meeting the full range of customer and consumer needs by ensuring product availability in the correct size and color, providing game-changing technical innovations and also the latest high-end fashion product to the highest quality standards (Adidas annual report, 2009). That is the reason why Adidas created a Global Operations function that manages and coordinates the development, production planning, sourcing, commercialization and distribution of the majority of Group's products. The vision of the Global Operations function is to be closest to every consumer. This means enhancing the Adidas Group's growth by meeting consumer demand in both wholesale and retail channels with the right product – in terms of quality, size, color, style and material – in the right place, at the right time. In order to realize its vision,

the Global Operations function continues to focus on several strategic processes: design, sourcing, manufacturing, and distribution.

In terms of design, Adidas is well known as the inventor of the "torsion Technology". The torsion system consisted of a pair of cross supports running from the front to the back of the shoe, allowing movement and, at the same time, maintaining shoe stability and strength (Horovitz et al., 2003). Nowadays Adidas design and R&D department is focused on creation of new footwear and textile. Adidas has linked the concept of high technology and cutting-edge design by capturing consumer imagination. Moreover, the Company launches each year at least one major technological innovation and keeps strategic relationships with important partners such as Porsche and Polar (Rovetta and Salvi, 2008).

In 2009, Adidas launched the "Fast and Lean Creation" program for the Adidas and Reebok brands. It is aimed at making the product creation process faster, smarter and more efficient through process streamlining and simplification, improved communication between the development teams and suppliers, and the reduction of administrative work along the creation process. An additional objective is the harmonization of processes and systems across the two brands. The program aims at accelerating the creation calendars in less than 12 months for a larger share of products. In 2009, Adidas also increased the use of virtual technologies at its creation centers around the world to further reduce the cost of product prototypes and sales samples.

In terms of sourcing activities, Adidas mainly sources labor force and suppliers. For the Adidas and Reebok brands, the sourcing activities are centralized in the Global Operation sourcing unit. Its primary objective is to move towards a localized sourcing model whereby manufacturing suppliers source from local material suppliers to cut down on shipping costs and delivery time. Moreover Adidas is finding ways to improve its environmental footprint in the supply chain and during the supplier selection process, the sourcing organization is increasingly looking at the supplier's environmental performance alongside price, quality and other factors.

Due to the specific sourcing requirements in their respective fields of business, TaylorMade, Rockport, Reebok-CCM Hockey and the Sports Licensed Division are not serviced through Global Operations, but instead utilize their own purchasing organization.

In order to quickly seize short-term opportunities in their local market or react to trade regulations, Group subsidiaries may also source from selected local suppliers outside the realm of Global Operations. Local purchases, however, account only for a minor portion of the Group's total sourcing volume.

Regarding manufacturing and operations processes, in the mid-80s, Adidas owned twenty textile factories and footwear factories in Germany, France, Austria, North Africa, and the US. At that time, 60% of the footwear and 25% of the clothing were produced in-house. Since 1986, however, Adidas had begun restructuring and had significantly decreased the amount of in-house production. By 1991, only 12% of the footwear and 7% of textile were produced in-house and the outsourced footwear production was divided between Asian countries (70%) and Europe (30%) (Horovitz et al., 2003). Nowadays, Adidas outsources more than 98,9% of the manufacturing activities working with more than 1.128 independent factories (excluding factories of our licensees). The independent subcontractors manufacture Adidas Group products in 68 countries: 69% of the factories are located in Asia (particularly, 27% of total subcontractors are located in China), 15% in the Americas and 16% in Europe, Middle East and Africa (EMEA). Through the past years Adidas carried out a rationalization of its supplier base arriving in 2009 at a number of 270 independent manufacturing partners. Adidas still owns 13 factories that are located in Germany (1), Sweden (1), Finland (1), the USA (4), Canada (4), China (1) and Japan (1). In 2009, the Adidas Group worked with 41 licensees whose suppliers manufactured products in 288 factories in 44 countries. Products licensed are apparel, accessories and gears, footwear, watches, glasses and cosmetics.

Outsourcing practices allow the Company to focus on its core competencies, that is design and product innovation and marketing, areas in which it can best achieve a competitive advantage. While Adidas provides its supplier network with detailed specifications for production and delivery, these suppliers possess excellent expertise in cost-efficient high-volume production of footwear, apparel and accessories. Adidas adopts a partnering approach to working with its key suppliers resulting in greater cooperation, transparency and support. The Company helps its suppliers perform better by producing guidance and training materials, arranging technical advice and making sure best practice is shared

among suppliers. In order to allow sales subsidiaries to buy product closer to market and replenish stores more frequently and strategically, the Global Operations function increased its efforts in strengthening and enhancing its portfolio of fulfillment models. Moreover, improved capacity and material planning processes allowed over 1.300 articles to be produced and delivered with short lead times of 22 to 30 days. To reach this goal Adidas implemented an optimized demand planning process and system to more than 20 countries in Europe, standardizing and partially automating certain planning functions to increase forecast accuracy. Moreover, the Company adopted also a supply planning program aimed at consolidating several legacy planning systems and processes within the Group into a single International Logistics Planning System (ILS) for all brands and product segments (Footwear, Apparel and Accessories).

In terms of logistics activities, Adidas main warehouses are located in the UK, Spain, the Netherlands, Greece, and South Africa. These warehouses are managed by third party logistics. Adidas owns two distribution centers (DC) one in China and one opened in 2009 in South Carolina, USA. The new one is a multi-brand distribution centre that includes two large distribution buildings that house more than 15 million units of Adidas and Reebok brand apparel, footwear, equipment and accessories. The Services Center of the DC is able to process more than 2 million orders and answer more than 300.000 customer service calls annually. All these facilities are designed to support both the future growth of Adidas brands and future demands from the retail channels. Adidas products are distributed through a worldwide network of stores, made by global multi-brand distributors and Company mono-brand stores. The wholesale channels are represented by sporting goods chains, department stores, independent sporting goods retailer buying groups, lifestyle retail chains and e-tailers. Although the company makes most of its money by selling at wholesale rates to large retailers like Dick's Sporting Goods (DKS), Foot Locker (FL), and Sports Authority, Adidas has sought to increase profit margins by increasing retail sales as a percentage of total sales. Nowadays, wholesale channel represents 85% of net revenues and retail 15% of net revenues. Regarding both distribution channels, in 2009 Adidas decided to implement the Never-out-of-stock (NOOS) project. The NOOS program comprises a core range of basic articles, mostly on an 18 – 24 months lifecycle, that are

selling across all channels and markets. Overall, the NOOS replenishment model secures high levels of product availability throughout the season, allowing for quick adaptation to demand patterns. Retailers have to provide dedicated retail space, co-invest in fixtures and fittings and commit to a “first fill” representing about 25% of total expected seasonal demand to participate in this program. In return, customers can profit from significantly reduced inventory risk on these products. As analyzed in the case, the Company strives to shorten creation and production lead times by continuously improving its infrastructure, processes and systems. By sharing information from point of sale to source and vice versa, Adidas strives to connect and control the various elements of its supply chain, to enable quick reaction to changing consumer trends. To this end, the Company focuses on building maximum flexibility through information sharing, harmonization and standardization of processes and practices and through the adoption of simplified IT systems and applications. While leveraging the efficiency of common suppliers, infrastructure, and processes, the Group strives to provide tailored solutions for all its business models, be it the wholesale or retail channels, or the performance-oriented or style-oriented businesses.

Chapter 6
Evidences and Results

6.1 Evidences from case studies

This research provides a quite deep insight in the choices that exclusive and available fashion companies apply along their supply chain. This paragraph will describe supply chain key drivers, in terms of main approaches, processes, and technologies belonging to each area of investigation (design, sourcing, manufacturing, and distribution), followed by the companies analyzed within the sample.

Referring to the design phase, all companies involved highlighted that one of the most relevant competence is the one related to new concepts development. The trend emerged through the multiple-case analysis showed that this competence is kept in house by companies producing products and items with fashion exclusivity content whereas the idea generation of available fashion products is developed with the help of external designers. Five companies over six enlarge the design phase boundaries also to the definition of products aesthetic aspects and style and to materials requirements. Moreover, companies belonging to the exclusive fashion segments develop in house the prototype and the sample. This happens also for Adidas technology-intensive products, for which design and innovation have a strong impact on products performances. Products belonging to the exclusive segment have a very strong style and the brand image is highly identifiable, because products must convey emotions to the customers. Product design, style and aesthetic make the product unique and make customers associate emotions to products.

Contrarily to the design phase, the “make or buy” trade off leads the exclusive fashion companies to the adoption of a make approach and the ones producing available fashion products to total outsourcing of many activities. Due to the “make/control” approach, is strategic for Loro Piana, Gucci and Luxottica not only to centralize the purchasing activities

but also to cooperate and work with supplier to source the best quality raw material and components. In fact, for fashion exclusive producers, superior quality of materials and products is considered both in terms of product compliance with the specifications and in terms of superior manufacturing quality. For the fashion exclusive segment quality is an "order winner" (Hill, 1993) and as a consequence, materials have to be sourced in specific and particular countries (i.e., Mongolia for cashmere, leather in Italy, crocodile in Australia, etc.), from suppliers that are extremely specialized or from suppliers that have a strong brand reputation. Moreover, raw materials are both purchased in advance ("blind purchasing") so companies have to take some risks related to over-buying, as well as purchased after receiving customers orders, so companies have to strictly manage and control delivery times and accuracy in order to avoid delays in productions. On the contrary, available fashion products producers are more focused on purchasing low cost labor force and finished products. So their main goal is to find the most suitable producers through their network, to coordinate the manufacturing network controlling sourcing lead times and delivery times to fulfill the orders.

In terms of manufacturing activities, for Loro Piana and Gucci the most critical production phase (the finishing for textile and cutting for fabrics and leather) are run in house while the non-critical and labor intensive (sewing and assembling) are outsourced. Luxottica, on the other hand, carries out all the manufacturing activity internally. Anyway, even for those activities that are outsourced, quality is a must, suppliers are carefully selected, manufacturing activities are strictly monitored and incoming products are 100% quality controlled. On the contrary, BasicNet Polo Ralph Lauren and Adidas outsource all manufacturing activities in order to reduce costs and increase flexibility both in terms of volumes and products features. In terms of location of the manufacturing activities, the country of origin is particularly relevant for exclusive fashion products. For these items, in fact, the label "made in Italy" is recognized worldwide as synonymous of high quality and original design. This strongly contributes to justifying the premium price requested to customers. On the contrary, available fashion items producers outsource production activities to look for a good supply of labor, low wages and acceptable product quality. These companies work with a worldwide network in order not only to take advantage of the

most efficient manufacturing suppliers for each part of the manufacturing process, but also to shift their production geographically as political, economic and regulatory conditions around the world change. When deciding where to place an order, it is not only a matter of where the goods can be manufactured most cost effectively, but also a matter of distance to the market. The transportation time – between manufacturing sites and final market – and the quota system also influence the choice of manufacturer and location. Moreover, exclusive fashion products need a high level of craftsmanship and knowledge to be produced. That's why companies producing these items outsource all manufacturing phases to several neighboring craftsmen or small companies often belonging to the same industrial area, the so called "district". On the other hand, as resulted from the research, craftsmanship required for available fashion products is very low or is not even at all required. Regarding the distribution activities, it's interesting to notice that exclusive fashion products company prefer to sell their products directly to the final point of sales (DOS). So while the upstream of the chain is characterized by several tiers of suppliers (both for sourcing and production) the downstream supply chain is very short. This allows companies to better reach final customers. So companies producing and distributing products with fashion exclusivity content prefer to build a direct contact with customers through a network of mono-brand stores mainly located in primary locations of the city centers of worldwide known and famous capitals. Moreover, these stores are characterized by a clear and unique interior design that conveys the stile and the image of the brand. Mixing the primary exclusive location and the store design pursue the mission of guarantee a strong coherence with company values and the company brand. Regarding companies operating in the other segment that is dealing with available fashion products, the preferred distribution channel is the wholesale one. Particularly, for Polo Ralph Lauren and Adidas, the department stores and the multi-brand shops. This is due to the fact that these companies aim at enlarging the potentially reached customer base increasing the volumes of available fashion products sold. The available fashion brands tent to expand their presence in the global market using every possible distribution channel: franchising stores, DOS, department stores, multi-brand stores, online stores, etc. The primary goal is to secure high levels of product availability throughout the season in order to sell full price products

and in order to satisfy the customers who, otherwise, could easily go for a substitute brand. That's why department stores and multi-brand stores are carefully selected and are required to display the products in a proper way, following guidelines provided by focal companies. The following table reports a short description of how upstream and downstream supply chain key drivers, identified in the general research framework, have been adopted by investigated companies.

Design	Loro Piana Group (Clothing)	Luxottica (Sunglasses Ray Ban brand)	Gucci (Leather goods and handbags)	BasicNet (Sportswear, K-Way and Robe di Kappa brands)	Polo Ralph Lauren (Clothing)	Adidas (Sport footwear)
"Trend setter" or "trend follower" strategic approach.	Trend setter, icon of style and quality.	Clear, distinctive and unmistakable image and brand.	Trend setter, icon of luxury, fashion, and style.	Trend follower.	Trend setter until the end of the 80's. Nowadays, trend setting capabilities comparable to competitors.	High relevance of R&D and technical innovation. Trend setting capabilities comparable to competitors.
Degree of exclusivity (style, brand image).	Very high brand and product exclusivity.	High image exclusivity. High brand heritage.	High style and product exclusivity. Notable and unique stylist (Tom Ford, Frida Giannini, etc.). Very high brand heritage.	Distinctive logo, low style exclusivity.	Distinctive logo and brand, medium style and image uniqueness.	Distinctive logo and brand, mid-low style exclusivity.
Design lead times.	Design, prototype and samples of fabrics, for internal use 2/3 weeks, for external use 4/6 weeks. New garments design: 36 weeks. Prototype and sample: 10/12 weeks.	New concept design: 36/52 weeks. New glasses prototype and sample: 12/14 weeks.	New handbag concept design: 36/ 52weeks. Prototype and sample: 12/14 weeks.	New clothing design and prototype: 8 weeks (3 weeks for design and prototype development, 5 weeks for transportation).	New clothing design, prototype and sample: 10/12 weeks	New shoe concept, technology development, prototype and sample: 40/52 weeks

Source: elaboration by the author.

Sourcing	Loro Piana Group (Clothing)	Luxottica (Sunglasses Ray Ban brand)	Gucci (Leather goods and handbags)	BasicNet (Sportswear, K-Way and Robe di Kappa brands)	Polo Ralph Lauren (Clothing)	Adidas (Sport footwear)
Make or buy approach.	The textile division both buys and produces raw textile fibers and makes all the fabrics. The luxury goods division buys all the fabrics from Loro Piana textile division. The Company operates with a "make" oriented approach.	The Company has historically been oriented towards the adoption of a "totally make" approach, from raw material (i.e., co-development with the producers of acetate) to finished product.	Purchasing activities of leathers and components are centralized at Scandicci Headquarters, where materials are quality controlled and stocked. Manufacturing activities are done by strictly controlled partners and subcontractors. The Company is adopting a "make/control" strategy.	100% outsourcing (design, manufacturing, distribution). Sourcing of labor force and suppliers. Raw materials are directly purchased by subcontractors.	Total outsourcing of the manufacturing activities and most of the distribution activities are done through wholesale network. Design is done internally. The Company operates with a "buy" oriented approach. Sourcing of finished products, labor force and suppliers.	The design and R&D phase is done internally\. Total outsourcing of the manufacturing activities and most of the distribution activities are done through wholesale network. The Company operates with a "buy" oriented approach. Sourcing of labor force and suppliers.
Purchasing to stock vs. purchasing on order approach.	Textile division: the yarns are purchased in advanced and stocked. Raw textile fibers (i.e. cashmere or wool) are purchased and stocked (cashmere is bought from October to February, wool in November and December). Luxury goods division: fabrics are both purchased to stock (classic one) and other are bought after the orders of finished goods are placed.	Standard materials are purchased in advance. Fashionable and high innovative material is bought on order.	Precious and rare materials are bought in advanced. Most fashionable leather and raw material (in terms of colors, patterns, etc.) is bought part in advance and part after the orders of finished goods are placed.	-	-	-
Types and quality of raw materials.	Precious fabrics, high quality, continuous improvement and innovation.	Innovative and fashionable.	Precious, rare and innovative leather.	Medium quality and standard materials.	Low innovative and medium quality raw materials.	High level of technology for some materials and products, but, on average, medium quality level.
Sourcing lead times.	The lead time for sourcing raw textile fibers is defined by natural environmental cycles and depends on fiber types and characteristics. The lead time for sourcing finished fabrics from the sample approval is 12/13weeks.	The lead time for sourcing raw materials is on average 4 weeks if the raw material is cellulose powder, 8/12 weeks if cellulose slabs.	The lead time for sourcing raw leathers is defined by natural environmental cycles and depends on leather types and characteristics. On average the sourcing lead time is about 8/12 weeks.	From the order of the finished products to the delivery is 10/18 weeks.	From the order to the delivery is: 8/12 weeks for a made to order product (*industrializzato*); 10/16 weeks for a finished product (*commercializzato*).	From the order of the finished products to the delivery is 3/4 weeks.

Source: elaboration by the author.

Manufacturing	**Loro Piana Group (Clothing)**	**Luxottica (Sunglasses Ray Ban brand)**	**Gucci (Leather goods and handbags)**	**BasicNet (Sportswear, K-Way and Robe di Kappa brands)**	**Polo Ralph Lauren (Clothing)**	**Adidas (Sport footwear)**
Make to order vs. make to stock approach.	Fabrics for the custom-made line are made to stock (30-40%), the others are made to order (60-70%). Clothing is on average made to order (selling campaigns after fashion shows). Data are compared and fine tuned with historical series.	Licensed products are made on customers' orders. Luxottica labeled products are made to stock, based on historical data.	Handbags are on average made to order (selling campaigns after fashion shows). Data are compared and fine tuned with historical series.	The worldwide manufacturing network produces on the basis of sourcing centers orders.	The worldwide manufacturing network produces on the basis of Company orders.	The worldwide manufacturing network produces on the basis of Global Operations function orders.
Automation vs. specialized craftsmanship.	Plants for transforming raw materials into fabrics are automated, as well as the cutting plants for finished products. Although craftsmanship, experience and specific knowledge is required for key activities (quality controls, finishing, assembling, etc.).	High level of automation for certain activities (cutting cellulose acetate slabs, painting, assembling, etc.). High level of labor content as well (finishing, labeling, packaging, etc.).	Raw leathers are generally cut automatically on CAM cutting tables. Exotic ones (alligator, crocodile, iguana, etc.) are cut manually in order to follow precisely the natural patterns of the leather and utilize up to 98-99% of it. Handbags are 100% handmade with a high level of craftsmanship required.	The worldwide network of subcontractors uses both automation and labor content for the manufacturing and assembling activities. Anyway, specialized craftsmanship is not needed.	The worldwide network of subcontractors uses both automation and labor content for the manufacturing and assembling activities. Anyway, specialized craftsmanship is not needed.	The worldwide network of subcontractors uses both automation and labor content for the manufacturing and assembling activities. Anyway, specialized craftsmanship is not needed.
Location of the manufacturing activities.	1 plant in Mongolia (collect and pre-work on raw cashmere fibers). 5 plants in Italy (fabrics manufacturing activities). Subcontractors and façon are located in Italy. 3 plants in US (fabrics manufacturing activities to serve the local market).	6 plants in Italy, 2 plants in China and 2 in U.S. to serve the local markets.	Prototypes and samples are produced at Gucci plant (Scandicci, Italy). Manufacturing activities are done by first and second tiers subcontractors located in Italy.	The network of manufacturing subcontractors is worldwide, mainly concentrated in low labor cost countries.	2% U.S., 98% Asia, Europe, South America.	98.9% of the production is outsourced. Particularly, 69% in Asia, 15% Americas, 16% in Europe, Middle East and Africa.
Manufacturing lead times.	From raw fibers to fabrics, the lead time is 12 weeks. From raw fabrics to finished products, the lead time is 4/6 weeks.	From raw materials and components to finished goods, the lead time is on average 1/2 weeks.	From raw leather to finished goods, the lead time is on average 6 weeks.	-	-	-

Source: elaboration by the author.

Logistics and distribution channels	Loro Piana Group (Clothing)	Luxottica (Sunglasses Ray Ban brand)	Gucci (Leather goods and handbags)	BasicNet (Sportswear, K-Way and Robe di Kappa brands)	Polo Ralph Lauren (Clothing)	Adidas (Sport footwear)
Polarized vs. decentralized distribution center.	Polarized DC: small-medium warehouses located nearby the plants.	Two centralized DCs (Italy and China) owned and managed by Luxottica. Several logistic platforms (23) for worldwide distribution.	There is a centralized and high automated DC located in Bioggio (Switzerland). The DC is jointly owned by Gucci Group (51%) and Norbert Dentressangle (ND) (49%).	Finished goods are sent directly to commercial licensers who send them to franchised stores.	Decentralized distribution through several DCs located in U.S.A., Italy and Japan.	Centralize DC (China and U.S.) plus several outsourced warehouses located in UK, Spain, The Netherlands, Greece and South Africa.
Retail vs. wholesale approach.	In terms of net sales, 90% of the products are distributed through the retail channel (DOS), 10% through department stores and multi-brand stores.	In terms of turnover, 60% of the products are distributed through the retail channel (DOS), 40% through department stores and multi-brand stores.	In terms of net sales, 90% of the products are distributed through the retail channel (DOS), 10% through department stores and multi-brand stores.	The Company distributes its products only through wholesales (franchised independent stores, outlets, multi-brand stores, etc.).	Wholesale (57% of net revenues), retail (39% of net revenues) and licensing (4% of net revenues).	Wholesale (85% of net revenues), retail (15% of net revenues).
Store location.	Primary exclusive locations.	Stores (DOS) are in primary locations. Wholesales (i.e. department stores) are located in central or busy areas.	Primary exclusive locations.	Franchised stores are located in secondary areas and average shopping malls.	Stores (DOS) and wholesales are located in central and busy areas.	Stores and wholesales are located in popular and busy areas.
Service Level.	High for carry-over products. Purposely mid-low for high fashion and unique products.	High for carry-over products. Purposely mid-low for high fashion and unique products.	High for carry-over products. Purposely mid-low for high fashion and unique products.	High.	High.	High.

Source: elaboration by the author.

Whole Supply Chain	Loro Piana Group (Clothing)	Luxottica (Sunglasses Ray Ban brand)	Gucci (Leather goods and handbags)	BasicNet (Sportswear, K-Way and Robe di Kappa brands)	Polo Ralph Lauren (Clothing)	Adidas (Sport footwear)
IT intensity.	IT systems are not well spread in company processes. The design phase is run with the support of CAD software. Production planning and sourcing activities are marginally supported by information technologies. Information is not collected in real-time from all the DOS.	IT systems are developed and implemented especially at the DC level. Particularly, the Group's distribution system is globally integrated and links the logistics and sales centers to the production facilities in Italy and China, providing daily monitoring of global sales performance and inventory levels so that manufacturing resources can be programmed and warehouse stocks re-allocated to meet local market demand.	IT systems are not well spread in company processes. The design phase is run with the support of CAD software. Production planning and sourcing activities are marginally supported by information technologies. Information is not collected in real-time from all the DOS.	High degree of Information Technology implementation. Creation of new software to allow the on line management of every process in the offer chain.	Creation of the "Collaboration platform" in order to increase information sharing and exchanging, standardize design information, reduce faxing and mailing costs and improve the replenishment cycle.	The Company focuses on building maximum flexibility through information sharing, harmonization and standardization of processes and practices and through the adoption of simplified IT systems and applications.

Source: elaboration by the author.

6.2 Identify different Supply Chain strategies according to the corresponding fashion products segmentation

The main findings obtained through the multi-case analysis, show that SC key drivers, identified in the research framework definition and explored in the multiple case study, lead to the adoption and implementation of different SC strategies and approaches. Thus, in order to design a model that would allow a company to measure the consistency between its SC strategy and its products market positioning, the set of key drivers has been translated in several supply chain strategy decisions that could be made by a company producing either exclusive fashion products or available fashion ones. According to Chopra and Meindl (2007), successful supply chain management requires many decisions relating to flow of information and products. These decisions fall into three categories or phases, namely SC strategy or design, SC planning, and SC operation. Each decision can be part of one of these three categories depending on its frequency and the time frame during which a decision phase has an impact. Particularly, referring to the first phase (SC strategy or design), the two authors argue that "during this phase, given the marketing and pricing plans for a product, a company decides how to structure the supply chain over the next several years". Supply chain design decisions, in fact, have a long term time horizon and are very expensive to change on short notice.

Through the analysis of several literature contributions (Simchi-Levi et al., 2003; Voss, 2005; Chopra and Meindl, 2007), it is possible to summarize that SC design decisions include:

- Make or buy choices;
- Sourcing decisions (centralize or decentralize sourcing; source from single or multiple suppliers);
- Plant and warehouse location, capacity, degree of automation and focus;
- Modes of transportation;
- Production process characteristics;
- Distribution channels (logistics).

Regarding the make or buy decisions, one of the main principles, on which the firm can base its decision, is to make internally the products and/or components that can be classified by core-products for the company (Slack et al., 2007). Core products are produced thanks to the core competences of the firm that is all the specific talents, skills, and knowledge sets that differentiate the company from its competitor and give it an advantage in the eye of the customer. So the firm should identify what manufacturing activities lie in its set of core competences and what product or component should be purchased from outside suppliers, because they are not core for the company.

Sourcing is the set of decisions that have to be made to source goods and services. The first trade-off is whether to centralize or decentralize the purchasing activities and the following table shows the main pros and cons related to this decision.

PROS OF DECENTRALIZATION	**PROS OF CENTRALIZATION**
1. Local management responsible for all costs including purchasing might become frustrated if they lose control over such an important cost item. 2. Close cooperation between local buyers and users. Good fit with local requirements. 3. Local buyers more motivated. 4. Choice of local suppliers: • Better and faster service • Shorter delivery times • Sometimes better terms • Goodwill to local community	1. Stronger negotiating position versus suppliers, hence better price and terms. 2. Construction of a group purchasing and procurement strategy. Uniformity leads to economies of scale. 3. Acquisition of better, more profound knowledge of the market. Establishment of a global supply view. 4. Efficient view of available purchasing skills. 5. Less administrative work and reduction of purchasing organization expenses.

Source: adapted from Arnold, 1999.

The second trade-off is whether to source from a single supplier or from a portfolio of suppliers and the following table shows the main advantages and disadvantages related to this decision.

	Single-sourcing	**Multi-sourcing**
Advantage	- Better communication. - More economies of scale. - Strong and durable relationship. - Greater dependency encourages more commitment and effort.	- Can switch sources in case of supply failure. - Wide sources of knowledge and expertise to tap.
Disadvantage	- Supplier might exert pressure on prices if no alternative supplier is available. - Individual supplier is more affected by volume fluctuations. - More vulnerable to disruption if a failure to supply occurs.	- Less easy to develop effective supplier quality assurance. - More effort needed to communicate. - More difficult to obtain economy of scale.

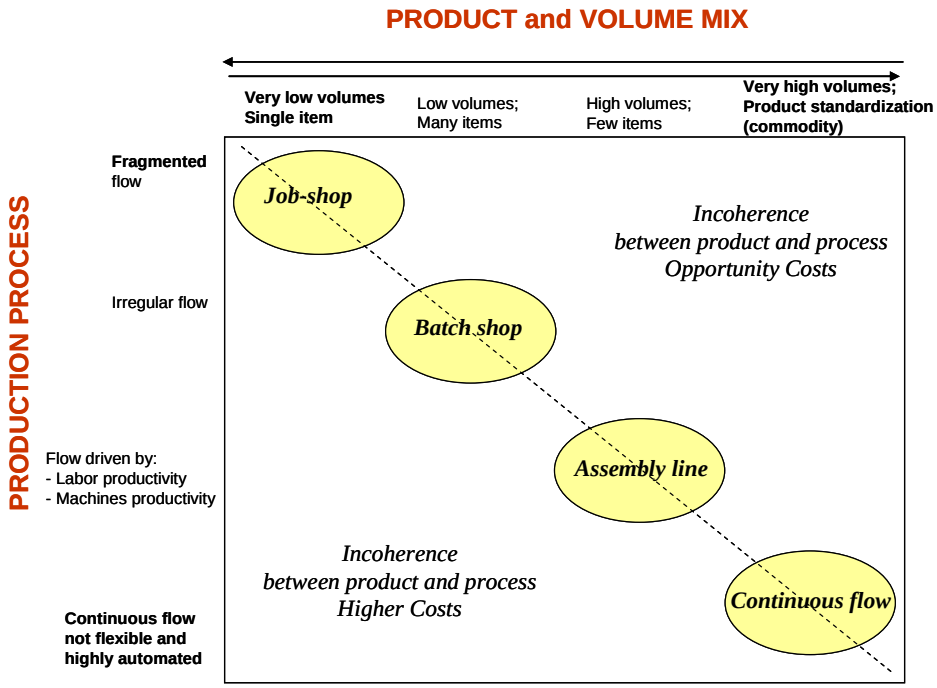
Source: adapted from Slack et al., 2006.

Moving toward through the analysis of the strategic decisions, facility location refers to the geographical positioning of an operation. Facility location decisions have a long-term impact on supply chain's performances because it is very expensive to shut down a facility or move it to a different location. A good location decision can help a supply chain be responsive while keeping its costs low. In contrast, a poorly located facility makes it very difficult for a supply chain to perform close to the efficient frontier (Simchi-Levi et al., 2003). Generally speaking, the main strategic factors that can influence the facility location decisions refer to country macro-economic and political factors, workers' skills and competences, cost of workers, cost of facility, availability of infrastructure, distribution and

transportation costs, raw materials and suppliers availability, tax incentives and financial opportunities and import /export taxes.

Referring to the degree of automation, high degree of automation means adopting highly automated equipment and machines, that implies higher productivity, and workers' skills in terms of several activities (machines set-ups, controls, maintenance, etc.); low degree of automation means labor intensive production environments with higher flexibility but lower productivity.

Finally, in terms of process characteristics, to identify common aspects and main differences among different process types, the matrix "product-process" has been used (Wheelwright and Hayes, 1985). The following figure shows the relationship between product mix and production processes.



Source: adapted from Schmenner, 1984.

The following table describes each production process in terms of product characteristics, degree of automation, plant layout, labor content and management priorities.

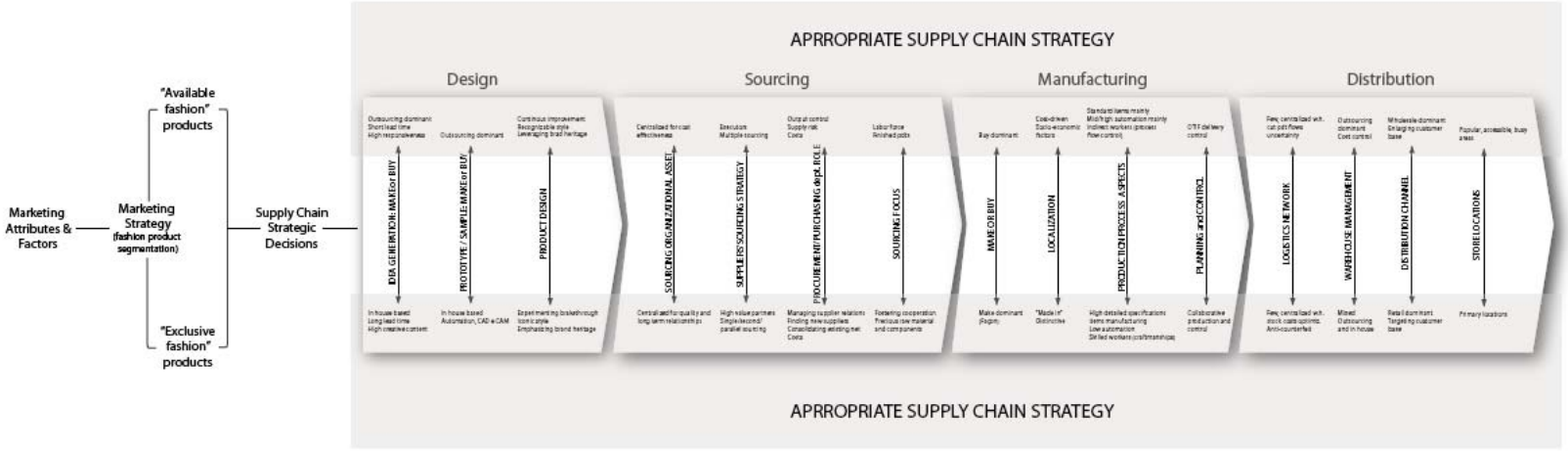
	PRODUCT	AUTOMATION	LAYOUT	LABOR	MNGT PRIORITY
JOB SHOP	Single item designed according to customer specifications. Production is triggered by customer orders.	Low	Difficult to identify production phases sequence	Skilled workers (very specific skills) Flexibility (overtime)	Quality, Delivery reliability, Flexibility
BATCH SHOP	Wide product portfolio	Limited to some specific production phases	Frequent variations for defined sequence of production phases	Skilled and flexible workers	Inventory management, process improvements, reliability of deliveries, management workers, incentive plans
ASSEMBLY LINE	Limited product portfolio High Volumes	Both in production phases and in internal transportation	Clearly defined sequence of production phases	Workers supporting production processes	Production capacity planning and management, inventory management, production lines balancing
CONTINUOUS FLOW	Standard products (commodity)	High	Rigid and inflexible sequence of production phases	Mainly Indirect workers	Saturation of production capacity, technological innovations

Source: adapted from Schmenner, 1984.

As previously said, the analysis conducted through multiple case studies showed that supply chain strategy should be tailored in order to pursue objectives that substantially differ from one segment to another (available vs. exclusive) (P2). Particularly, a set of SC strategic decisions could be identified for each area of interest (namely design, sourcing, manufacturing and distribution) and a framework could be designed in order to measure the coherency between the SC strategic decisions made by a fashion company and the segment its products belong to.

For each decision have been identified two extremes, but it is possible that companies operate choices that are between the two extremes, as it will be explained later on. However, for the purpose of theoretical modeling, it is important to define the two extreme and optimal decisions.

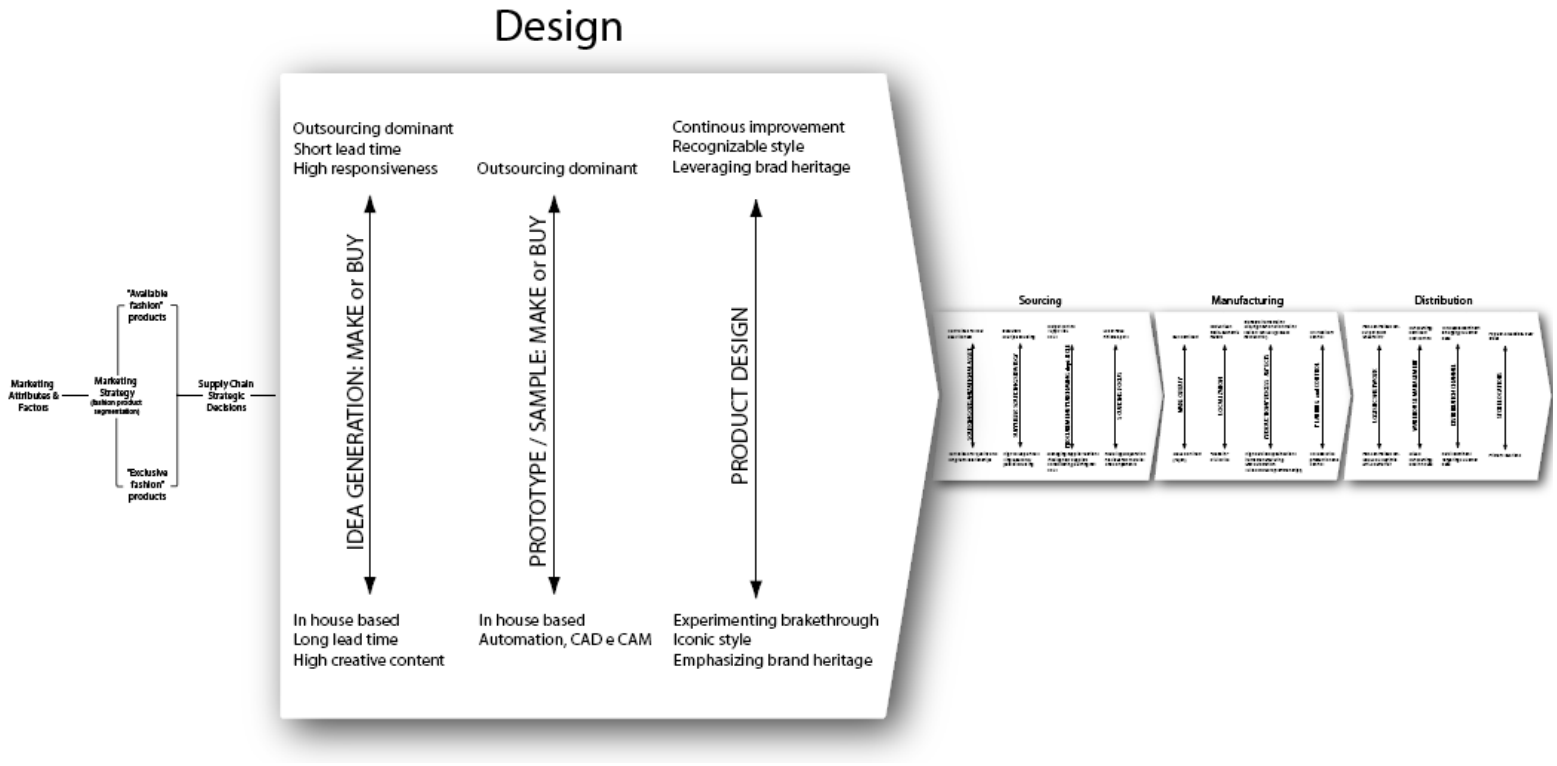
Supply chain strategy framework.



Source: elaboration by the author.

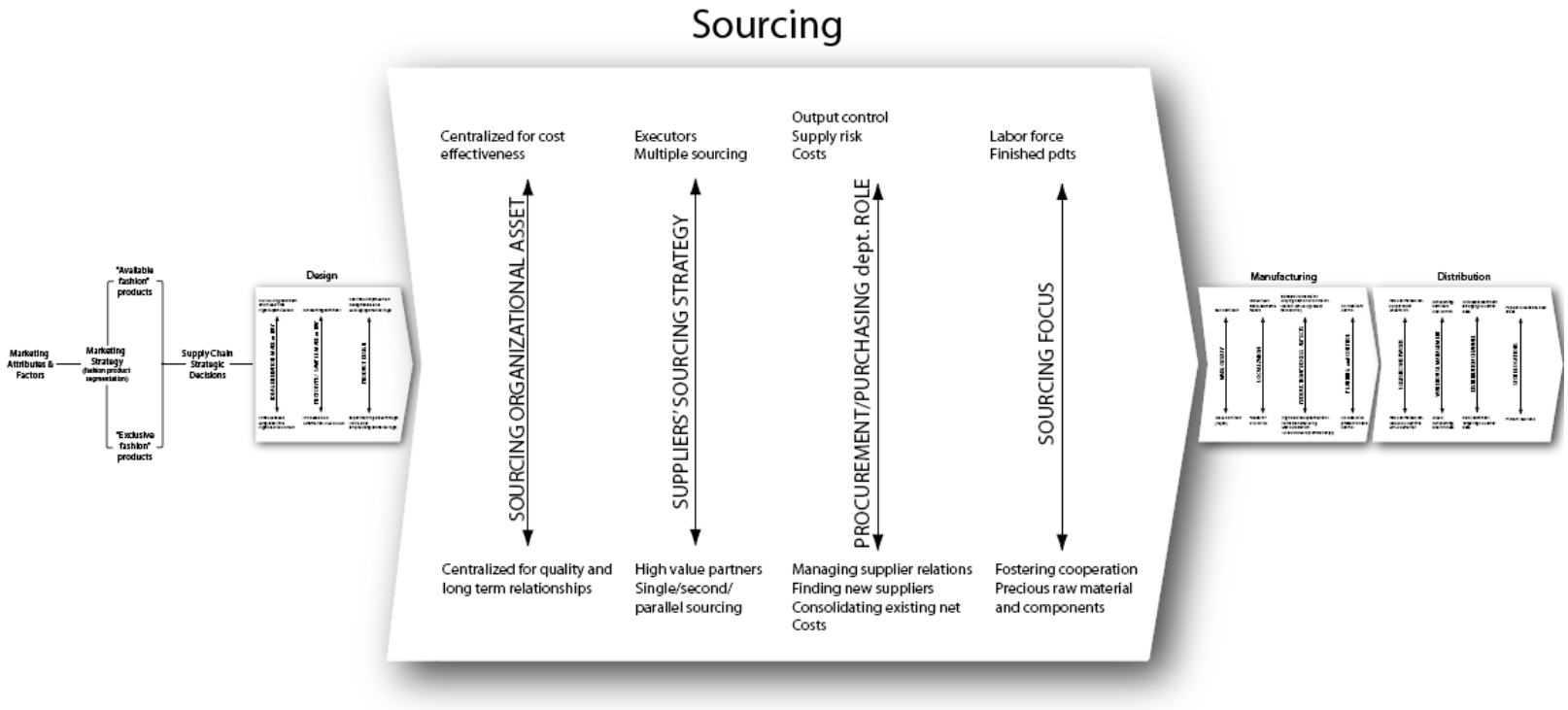
Following figures will show each area of interest and its related SC strategy decisions.

Supply chain strategy framework: design.



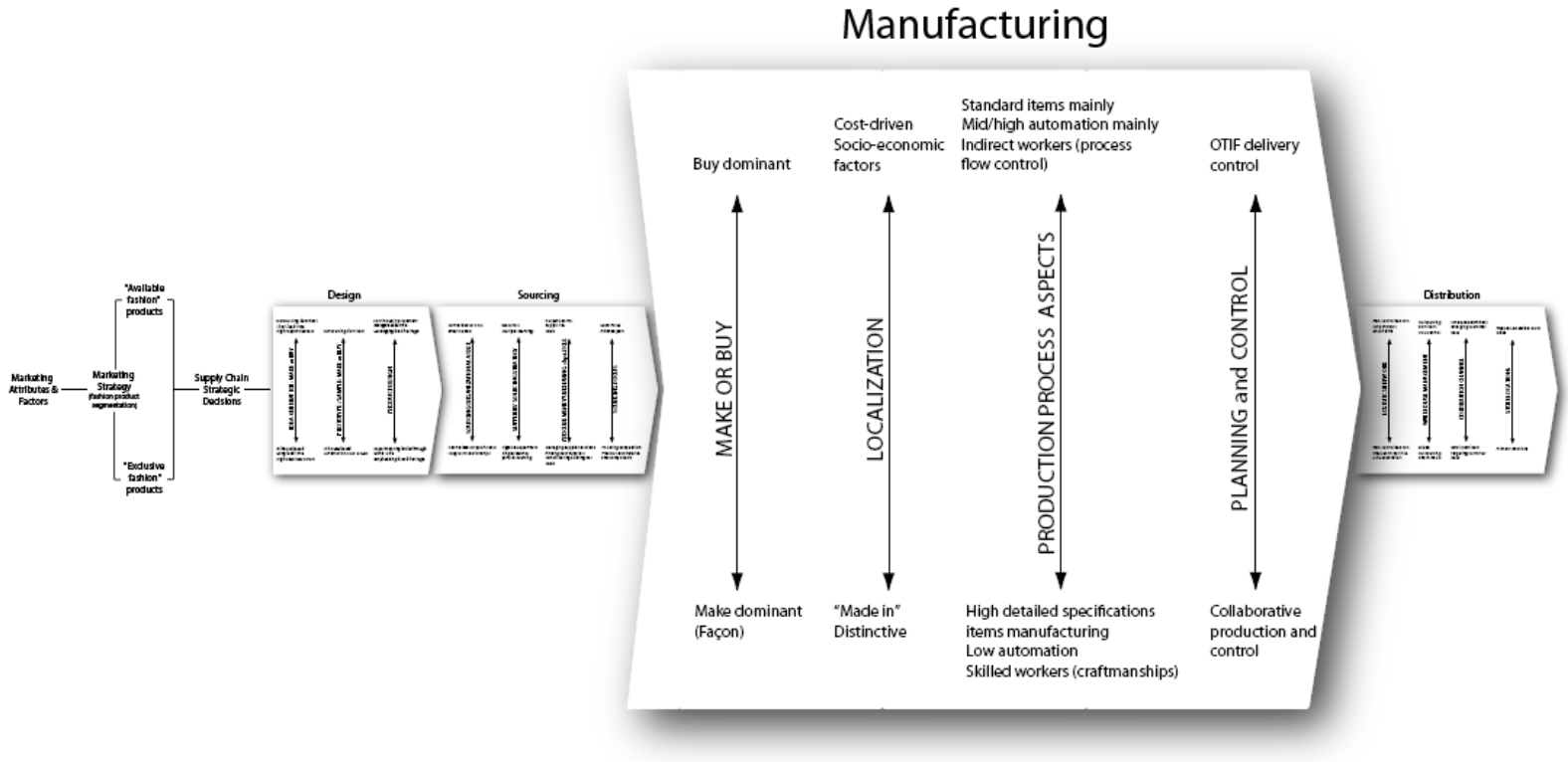
Source: elaboration by the author.

Supply chain strategy framework: sourcing.



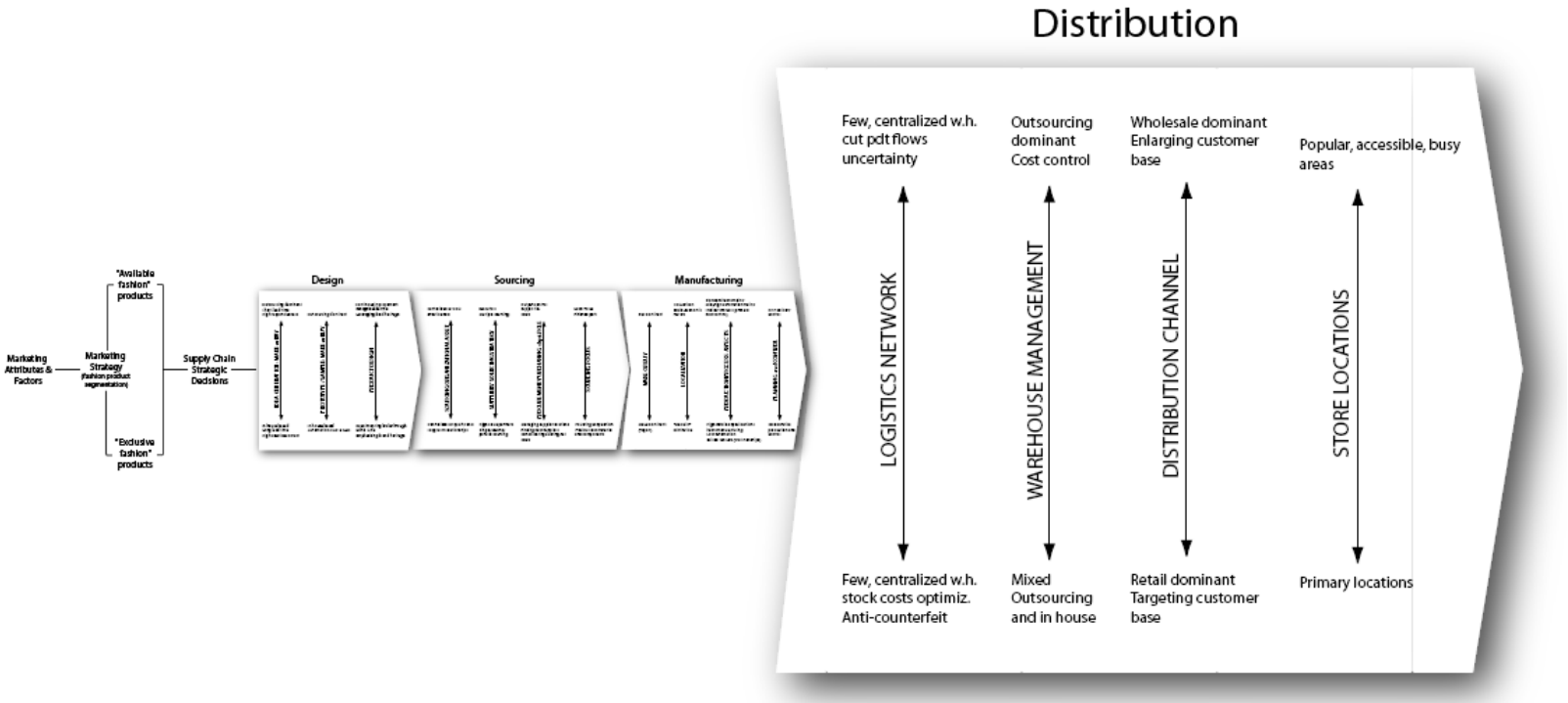
Source: elaboration by the author.

Supply chain strategy framework: manufacturing.



Source: elaboration by the author.

Supply chain strategy framework: distribution.



Source: elaboration by the author.

According to Hines (2006), strategic fit has to be achieved between the supply chain strategy and the competitive strategies adopted by a company. In order to achieve the strategic fit the firm has to understand the customer, recognizing the key requirements in each target segment it serves, and to understand the structure of its supply chain.

Within the supply chain strategy framework previously presented are highlighted two areas of strategic fit, which represent two supply chain strategies that are defined as "appropriate". It means that in these appropriate areas the supply chain strategic decisions made by the company are likely to be consistent with the products' characteristics of fashion exclusivity or availability. In other words, the supply chain design and management choices implemented by the company could be consistent with its competitive priorities. The framework analysis also shows how it might be creating a situation of SC strategy inconsistency if, for example, a company producing exclusive fashion products has made supply chain strategic decisions that would better fit with available fashion products. The inconsistency could be due mainly to two reasons. The first is due to the fact that the company has underestimated the importance of properly configure its supply chain, which therefore could be inconsistent with company competitive priorities. In this case, the company underestimates the SC role as enabling factor in market positioning strategy. The second reason refers to the fact that most companies produce and sell multiple products to multiple segments, each with different characteristics. It means that company products' portfolio could be made by a mix of several items, both exclusive as well as available fashion ones. In order to simplify internal processes, the firm could decide not to configure several focused SCs but to implement one supply chain. In this case, the consequence is that the firm has to face cost/opportunity issues. In this case, when devising SC strategy the key issue for a company is to design a supply chain that could balance efficiency and responsiveness, given its portfolio of products (available and exclusive) and customer segments (Chopra, 2007).

In conclusion, this research shows once more that supply chain strategy should be tailored in order to pursue objectives that substantially differ from one segment to another.

In the opinion of the writer, the originality of the work lies in the fact that this assumption is confirmed within a context in which supply chain literature is poorly developed, namely

the fashion industry. Particularly, the model emerging from the research could allow managers to identify the principal attributes and factors, characterizing fashion products from a marketing perspective. Through this analysis, managers could then identify the most relevant SC decisions on which they should concentrate and, among these decisions, select the choices that are more related and coherent with the segment their products belong to.

Finally, I believe that the managerial implications of this model should be further explored. However, these implications seem to allow a SC strategic decisions interpretation that is closer and more aligned with the managerial culture dominant in fashion companies, namely the marketing perspective.

Chapter 7
Further Research

7.1 Research limitations and further developments

The findings reported in the previous chapters revealed interesting insights as regards supply chain strategies for fashion companies and the decisions which can be made in order to align supply chains to different fashion product segments. But some questions are still opened and set the path for further research. The main one refer to the fact that the number of companies included in the sample was proper for the research aim (theory building purpose) but does not allow results generalizability. So, a further step of this analysis would be the extension of the presented model to other fashion companies. Moreover, the research could be extended also to other sectors (i.e., watches, jewellery, etc.). In fact, this research concentrated its attention on fashion products (exclusive and available), also due to easier availability of academic literature contributions. However, this allowed the exploitation of only two clusters. Hence, an expansion of the research towards other sectors and industries would be worth doing.

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