ILLINOIS INSTITUTE
OF TECHNOLOGY

Supply Chain Planning in

Stable Demand and Fashion Products

Xavier Solé Ariza

February 17, 2014

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

ACKNOWLEDGEMENTS

1. MOTIVATION AND OBJECTIVES

1.1. Motivation

In recent years, terms such as supply chain or supply chain planning have become increasingly important in the industrial sector. Nowadays, everyone is aware that a good performance in supply chain activities is essential to business success. But what are the keys to do a good supply chain planning? Do they depend on the product? What changes?

To answer these questions, we will study how the supply chain is planned for two very different types of product: stable demand and fashion products. Moreover, we will do it through the study of two leading companies in these industries: Unilever and Inditex, to learn the best practices in each sector and see how the different features of the products affect to the supply chain planning.

1.2. Objectives

Therefore, the objectives of this study are the following ones:
- To analyze in depth how the supply chain is planned for each type of product
- To learn real techniques used in successful companies
- To compare the two ways and identify the reasons for each decision
- To help other companies in these sectors to better adapt their supply chains to their type of product

1.3. Scope

First of all, we have to say that this study is focused on the two companies that we have already mentioned: Unilever and Inditex. We think that these two companies are

two very good examples of these two types of supply chain planning that we want to compare and, therefore, we will not look at other companies' techniques.

Regarding the analysis of the companies, it is obviously impossible to study every single detail of their supply chains, as they are very large and complex companies. Then, we will focus the most significant points of the supply chain planning and the most important processes from a strategic point of view depending on the product.

Before that, we will briefly introduce what supply chain management is and what activities and processes are included, in order to better understand the rest of the study. Also, we will define stable demand and fashion products and we will expose the features of these two types of product that may affect the supply chain planning. Finally, once we have analyzed and compared the two supply chains, we will try to draw relevant conclusions about what are the best practices depending on these different features.

2.   INTRODUCTION TO SUPPLY CHAIN MANAGEMENT

2.1.   Definition of supply chain

First of all, before entering the subject, it is important to understand what do we mean when we talk about supply chain. There are many definitions to this concept but, generally, all of them agree in the following statement: "A supply chain is a system of organizations, people, technologies, activities, information and resources involved in moving materials, products and services from the original supplier of materials to the end customer." (*APICS Dictionary*, 13th edition)

We can already observe very important terms in this definition to help us understand the meaning of supply chain. At first, it is essential to focus on the verb used: *moving*. Actually, supply chain refers to all those *activities* (and, obviously, the *people* carrying out these activities) related to the movement and exchange of materials, products and services, but not to the manufacture or the sales themselves.

Nevertheless, supply chain should not be confused with logistics. The distinction is that supply chain does not only refer to the shipment and distribution of the product but spans all movement and storage of raw materials, works-in-process, finished goods and inventory from the point of origin to the point of consumption. And this brings us to another important idea proposed on the definition: from the *supplier* to the *customer*. The supply chain encompasses all the steps through the manufacturing process, from the procurement and acquisition of raw materials or components to the delivery and commissioning of the final product.

Moreover, logistics is an internal process of a company, whereas the supply chain can include multiple companies. Actually, the supply chain can also be seen as a network created amongst different companies (or, as used in the definition above, *a system of organizations*) that may have different functions in the lifecycle of a product, i.e. suppliers, manufacturers, distributors, retailers.

Finally, another important term used in the definition is *information.* As we have already said, the supply chain encompasses many activities and elements that can even belong to different companies. Thus, a fluid information and coordination between all this elements is an essential part of the supply chain, and it will generate a competitive advantage to those companies who know how to use it properly.
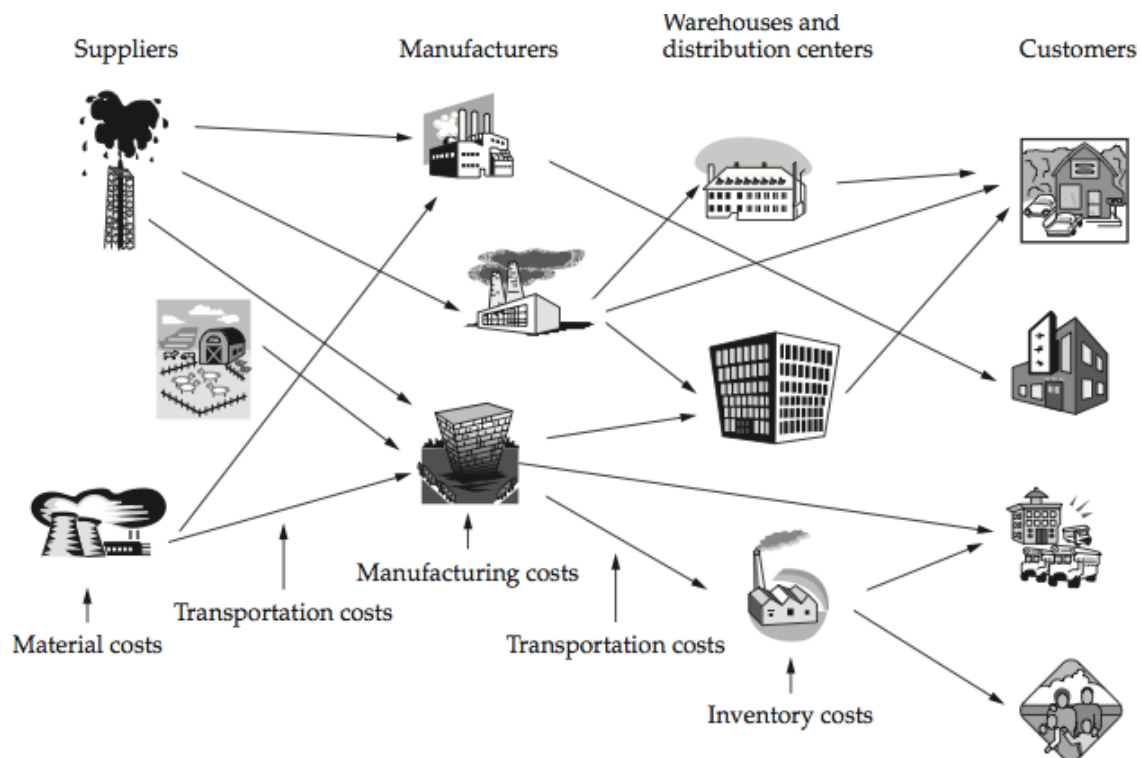

Figure 2.1. Supply chain network, by Mc Graw Hill

2.2. Definition of supply chain management

Supply chain management, as its name suggests, is the management of the flow of those materials, products and services within the companies, from the original supplier to the end costumer. It has been defined as the "design, planning, execution, control and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally." (*APICS Dictionary*, 13th edition)

A successful supply chain management has two ultimate goals:

- To ensure that products are available when they are needed, thereby reducing the need to store large amounts of inventory.

- To reduce costs along the entire supply chain in order to offer a more competitive product and increase benefits.

For these purposes, many issues have to be addressed. These are the most important:

- <u>Supply chain network configuration</u>: the number and location of suppliers, production facilities, distribution centers, warehouses and customers (markets).

- <u>Distribution strategy</u>: questions of operating control (e.g. centralized, decentralized or shared), delivery scheme (e.g. direct shipment, direct store delivery or closed loop shipment), mode of transportation (e.g. truckload, railroad, ocean freight, airfreight or intermodal transport), replenishment system (e.g. push or pull) and transportation control (e.g. owner operated, private carrier, common carrier or third-party logistics companies).

- Information: integration of processes through the supply chain in order to share valuable information, including demand signals, forecasts, inventory, transportation and potential collaborations.

- Inventory management: management of the quantity and location of inventory, including raw materials, works-in-process and finished goods.

All this has to be done taking into account not only the final customer but also intermediate customers as distributors or retailers. Actually, in a holistic approach of the supply chain, companies don't include only the suppliers and the customers but also intermediaries and third-party logistics providers, so that they can gain collaboratively through synergies.

Finally, note that the supply chain is like a link chain to satisfy the needs of the customer. Each link *produces* a part of the final product (e.g. acquiring, manufacturing, storing, distributing) and adds some *costs* to the chain. If one of these links fails, all the chain will fail and the customer will not be able to know which of the links failed. So, it is mandatory to ensure that no link fails or is significantly below the rest, because this will handicap all the other links of the supply chain.

2.3. Flows in supply chain management

According to Frefendall and Hill in *Basics of Supply Chain Management* (2000), it oversees three primary flows:

- Product flow: it involves the movement of goods and materials through the manufacturing process from supplier to customer.

- Information flow: it consists of a two-way exchange of data between the different actors of the supply chain. It involves the demand forecasts, purchase orders, inventory status information and tracking goods through delivery.

- Financial flow: it consists of payment schedules, credit terms, consignments and title ownership agreements.
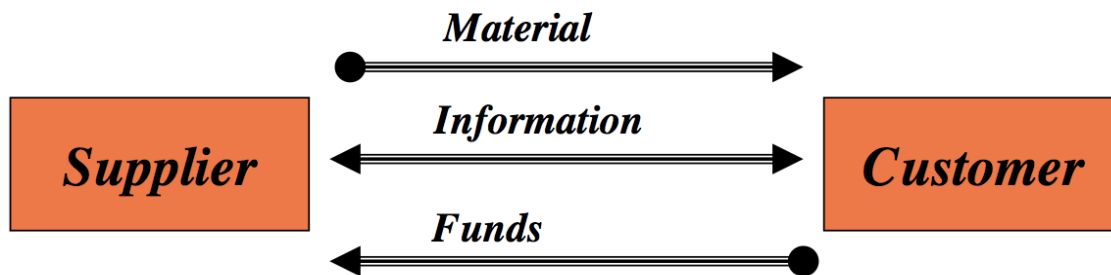
Figure 2.2. Flows in supply chain management

2.4.   Principal processes and activities

As it has already been said, supply chain encompasses many activities throughout the lifecycle of a product. For the purpose of giving a more accurate picture of supply chain management, a possible classification of the principal processes and activities contained in them could be the following given by Lambert and Cooper, in 2000:

a) Demand and supply planning: demand forecasting and the subsequent planning to supply this demand.

b) Procurement process: activities related to obtaining products and materials from outside suppliers such as resource planning, selection of suppliers, sourcing, order placement, etc.

c) <u>Manufacturing flow management process</u>: it manages activities related to planning, scheduling and supporting manufacturing operations such as work-in-process storage, transportation and inventory at manufacturing sites.

d) <u>Physical distribution</u>: this concerns the movement of finished goods to customers, always trying to make them available in all the points of consumption at the right time.

Apart from these processes, corresponding to the main stages of the supply chain (procurement – manufacturing – distribution), there are also other key processes necessary for the proper operation of all supply chain levels:

e) <u>Outsourcing/Partnerships</u>: not just the outsourcing of the procurement of materials and components but also the outsourcing in logistics, transport, warehousing and inventory control.

f) <u>Performance measurement</u> in terms of cost, productivity and quality along the different stages of the supply chain.

g) <u>Information management:</u> implementation of systems that enable an effective and efficient exchange of information among all parts.

2.5. Management levels

In supply chain management, as in any other business area, we can distinguish three basic management levels: strategic, tactical and operational. They differ, specially, in the effect of the decisions (the more strategic, more responsibility) and the length of the planning horizon (years in the strategic level, hours or even minutes in the operational one).

In the following picture we can see where some of the activities that we have already introduced are placed in this classification:

Strategic

Supply-chain design

Supply-chain modelling and simulation

Demand planning and forecasting

Capacity planning

Tactical

Transportation management

Inventory/warehouse management

Production scheduling

Operational

Seconds/ minutes Hours/shifts/ days Weeks/months Quarters Years
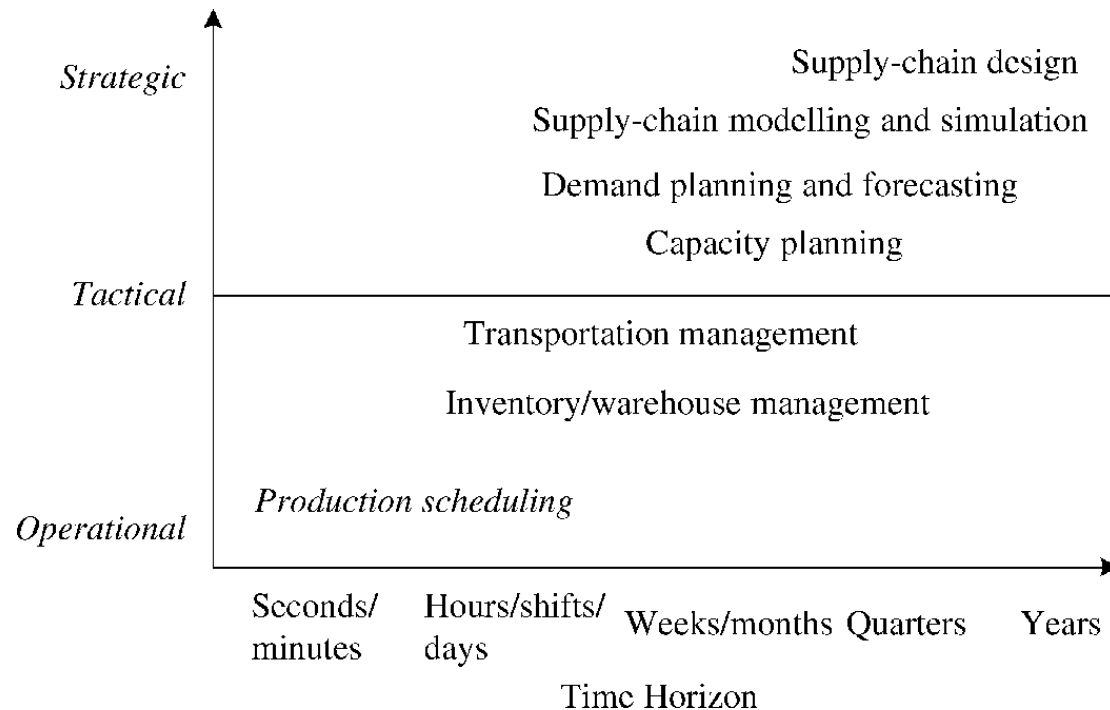
Time Horizon

Figure 2.3. Supply Chain main activities classified according to the management level and the time horizon

The strategic level corresponds to the *Supply Chain Design*. At this stage, the goal is to make long-term decisions to configure an appropriate structure that fits with the strategy of the company and enables an effective and efficient execution of the supply chain.

The tactical level is related to the *Supply Chain Planning* and it consists of all medium-term decisions made to ensure a proper execution of the supply chain. As we can see in the figure above, activities such as demand planning and forecasting, capacity planning, transportation management or inventory management are included in this planning stage.

Finally, the operational level corresponds to the *Supply Chain Execution*. It consists, as the name suggests, of the daily execution of the supply chain of the company.

2.6. Scope of this project

As the title of the project shows, it will focus, specially, the supply chain planning. We will start analyzing some strategic issues to identify the features that each supply chain, depending on the industry, must have and why, and then, we will center on the planning stage.

More specifically, the processes studied will be demand and supply planning, inventory management and information management. However, it is possible that we also look at other processes that may be important from a strategic point of view depending on each product.

Finally, note that in this study the financial flow will not be taken into account. It will only focus the other two primary flows: the product flow and the information flow.

3. DEFINITION OF *STABLE DEMAND* AND *FASHION* PRODUCTS

3.1. Stable demand products

We define *stable demand products* as those goods that do not undergo large variations in consumption depending on time and place. They are not susceptible to variables such as time of year or social trends and, therefore, their demand is easier to predict and their manufacture can be continuous.
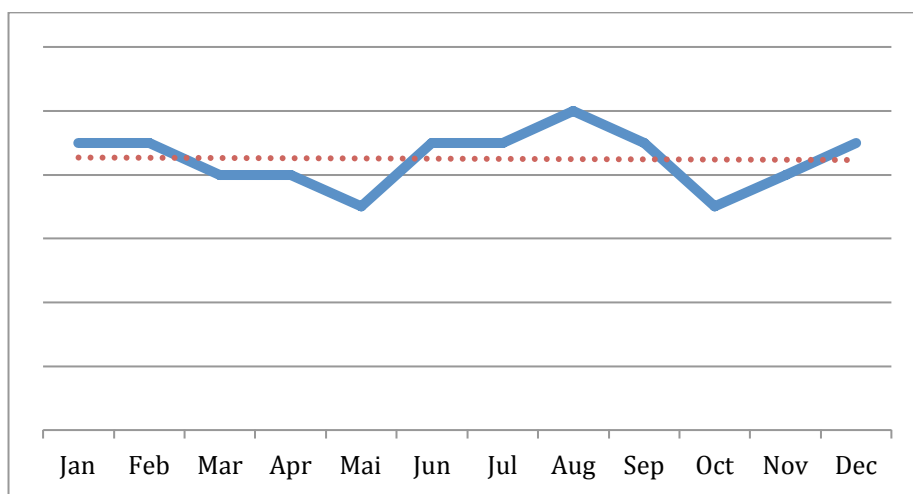
Figure 3.1. Example of a stable demand

As we can see in the figure above, the demand never becomes constant and obviously has some variations but is largely stable because it does not depend on time. The peaks and the valleys that we can see in the function are caused by random issues (they do not follow certain patters or trends), so the average remains flat.

Moreover, as they are not very dependent on social trends, they tend to be products with a long lifecycle, because they do not go out of style easily. Then, the biggest challenge for supply chain planning is to make the right amounts of these products available to customers.

The products that, in a greater or lesser extent, belong to this group are often related to basic human needs, such as food or hygiene, and that is why they are consumed so regularly. Specifically, people consume the same amount of food (two or three meals) and some personal care products (one shower) everyday. So, for example, food, personal care and cleaning products have stable demand.

3.2. Fashion products

In contrast, the *fashion products'* demand is completely opposite. These goods are characterized by a very unstable demand, highly dependent on the time and the place in which they are consumed.

Actually, fashion is "a general term for a popular style or practice among a particular society." (*Fashion and Design News and Trends*, 2012) Then, all mass consumption products or services such as clothes, cars, music, furniture or tourist destinations are related to fashion and have some particular features, which will be explained next.

- Social trends:

This type of product depends largely on the social trends of a particular population in a particular place at a particular time. Therefore, their demand is more difficult to predict than usual and marketing has to play an important role, trying to identify which products will be sold, to whom, at what prices and by what channels. For this reason, these products usually have a very short lifecycle, forcing the companies to get new products quite frequently.

• Strong tendency in demand:

Additionally, during their short lifecycle, they show a strong tendency in demand (increasing when they become fashionable and decreasing when they go out of style). This presents a challenge in terms of supply chain planning because both the lost sales due to lack of availability (in the first case) and the production of more stock than necessary (in the second case) are problems to avoid.
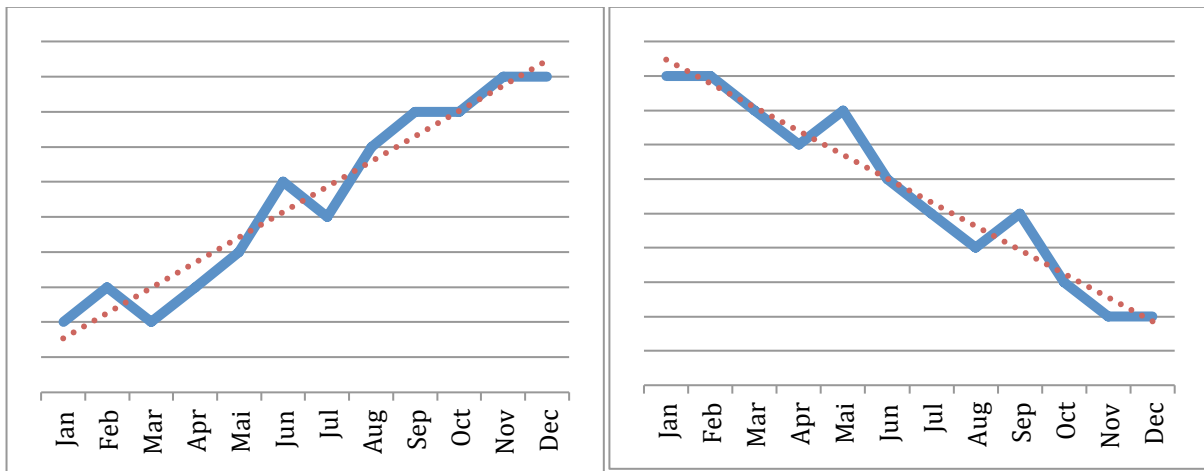
Figure 3.2. Examples of tendency in demand

These two features are common to all products related to fashion but there is an industry that show them so exaggeratedly that it is known as the fashion industry: the clothing industry. That is why in this project we will focus a company in this industry.

The products in clothing industry have, in addition, another important feature to highlight:

• High seasonality:

Most of these products are consumed only during a certain time of year. A jacket, for example, is only sold in winter while a swimsuit is only sold in summer. That causes significant challenges in their planning of production and distribution because neither a

large variation in the volume of activity nor large accumulations of stock are efficient for companies.
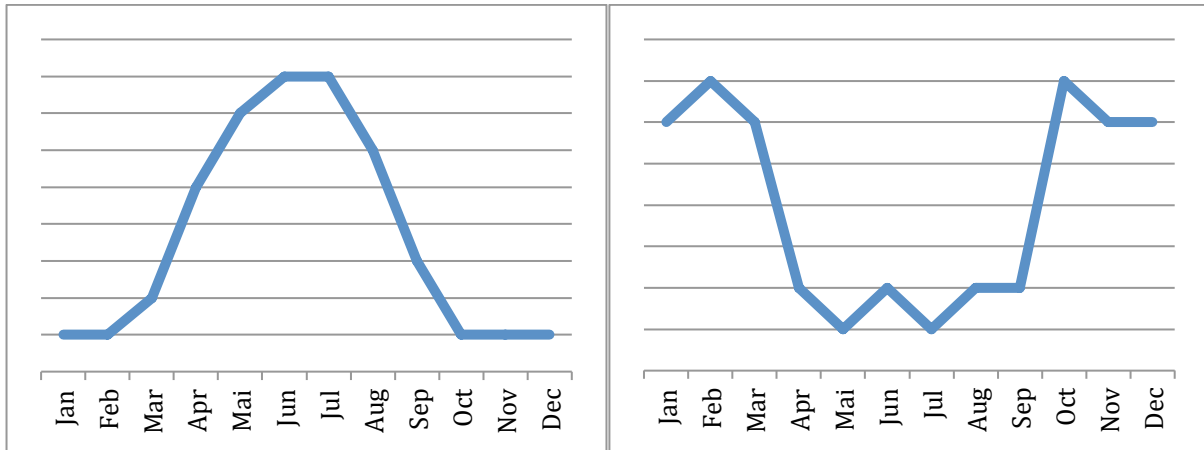
Figure 3.3. Examples of seasonal demand

3.3. Different treatment

As we have already seen, these two types of products have completely opposite features, which means that they have to be treated differently.

The different kinds of demand make that the techniques used to plan it and the subsequent manufacture and distribution of the products are very different in each case. As we will see in the following pages, stability of demand allows it to be planned based on past experiences while instability and incertitude in demand force companies to look for other solutions, trying to design a more agile and responsive supply chain.

Also, while *stable demand products* usually have a long lifecycle, *fashion products* usually have a very short lifecycle. This makes that the main challenges in supply chain planning are different in each kind of product because the shorter the lifecycle of a product is, the more important the strategic decisions concerning the product itself are

and less important the activities related to inventory management. We will understand this statement through the figure 3.4 and the paragraphs that follow it.

Figure 3.4. Fashion vs Stable Demand Supply Chain Planning

On the one hand, the *fashion products*' lifecycle will include a season or less. The product delivered for a new season may be similar to product delivered in the past but it is not the identical product. For example, colors may have changed for an outwear jacket or features may be updated for a car. Then, the most important process is the strategic decision about what and how should be the products to sell each season. This refers to *Assortment Planning*, which is "the process whereby the products are selected and planned to maximize sales and profit for a specified period of time". (Anne Heartle and Courtney Albert, 2012)

On the other hand, the colors or shapes of the *stable demand products* are not changed for years. So, the assortment planning process only serves as a checkpoint to determine if the product meets performance criteria and should continue to be included

in the assortment. However, the weight of sales is handled through the *Replenishment System,* which is "an operation that consists in making the stock full again in order to avoid stock-out". (Joannès Vermorel, 2012)

Obviously, an accurate inventory management and an efficient replenishment system are also necessary in the fashion industry, but the point is that the short duration of the products' lifecycle forces the companies to give more importance to the selection of the assortment and the quantities that have to be put at each point of sell rather than the replenishment system itself.

This is what we mean when we say that *fashion products* require more *strategy* than *inventory* and *stable demand products* require more *inventory* than *strategy*: while in the first case the key process is the assortment planning, or the selection of products to sell, in the second case the key process is the replenishment system, or the activities ensuring the availability of such products at any time and any place.

All this and many more issues will be properly addressed in the following sections. A deep analysis of the supply chain planning in *stable demand products* and *fashion products* will be made to better understand the processes and techniques that best suit each type of product and provide a greater competitive advantage for the company concerned.

4. THE STABLE DEMAND PRODUCT INDUSTRY

In order to study the case of *stable demand* products, we will look at one of the most successful companies in this industry: Unilever.

Unilever is an Anglo-Dutch multinational consumer goods company. Its products portfolio includes foods, beverages, cleaning agents and personal care products. It is the world's third-largest consumer goods company measured by actual revenues (€51.32 billion in 2012) and currently has operations in over 100 countries.

In the field of supply chain management, Unilever has been recognized for having the best supply chain in Europe and the fourth best in the world, according to Gartner's Ranking of Top Supply Chain Organizations for 2013.

The company owns more than 400 brands, organized into three main categories: Foods, Home Care and Personal Care. In the next figure we can see some of the most famous brands owned by Unilever.

Figure 4.1. Some of Unilever's brands

As we can see in this figure, the food section includes well-known brands such as Lipton (offering a large variety of teas), Knorr (soups and condiments), Flora (margarine and other dairy) and Hellmann's (different kinds of mayonnaise and other sauces) as well as several ice cream brands as Magnum and Ben & Jerry's. Actually, Unilever is the largest ice cream producer worldwide.

In the area of personal care, the main products offered are deodorants, bath gels and creams for skin and hair care, through brands such as AXE, Rexona, Dove, TRESemmé and POND's. There are also other brands specialized in other types of products as Signal (toothpaste and oral hygiene).

Finally, in the field of home care, Unilever sells cleaning agents for clothes, dishes and different parts of the house through brands such as Cif, Skip, Comfort, Domestos and Persil. The following figure shows some of these products to get an idea of what they are.

Figure 4.2. Some of Unilever's products

At first glance, it is clear that all these products, except ice creams and sunblock, perfectly suit the definition given in section 3 of *stable demand products*. They do not

practically suffer seasonality (they are identically sold at any time of year) or strong tendency in demand since they are not subjected to social trends. Obviously, they depend on the personal taste of each consumer (on the flavor in the case of food products, on the smell in the case of home and personal care) but in any case this is related to social trends of an entire society or a large group of people.

In the following pages we will see real examples showing that, indeed, the demand of most of these products is quite stable and how an important and successful company as Unilever plans its manufacturing, distribution and sale taking from this fundamental feature.

4.1. Supply Chain Configuration

4.1.1. Supply Chain Network

Unilever's supply chain is formed by four main elements: Suppliers, Manufacturing Sites, Distribution Centers and Customers. Below, we highlight the main features of each of these elements.
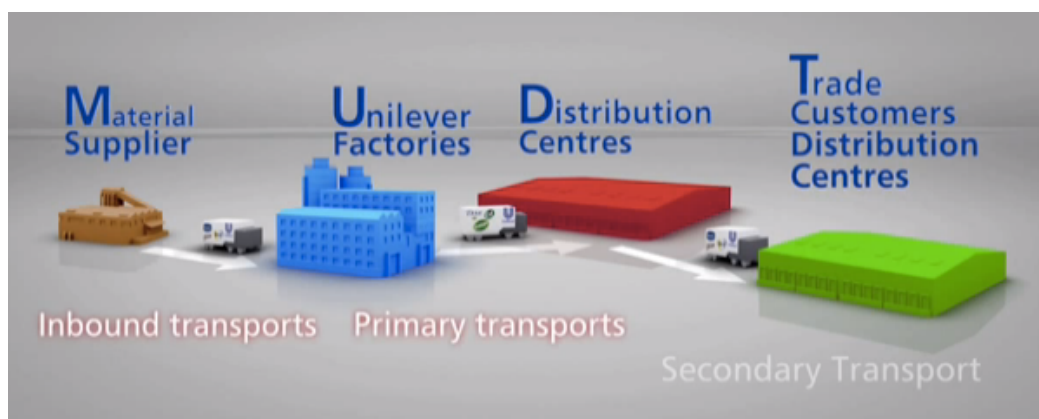

Figure 4.3. Diagram of the main elements of the Unilever's supply chain and the connection between them

- Suppliers

They are external companies, cooperatives or even particulars that provide raw materials that Unilever needs to manufacture their products. They can be generally divided into two groups:

- Basic Suppliers:

They provide the food that will be transformed along the chain on most of the products in the food section. Mainly, this group consists of farms and farmer groups from around the world. Actually, more than 500.000 smallholders farmers are linked into the chain. (*Unilever: Becoming the best*, 2011)

- Chemical Suppliers:

This group consists of large companies producing fragrances and other chemical products used in most of Unilever products. These companies are much larger than those of the previous group but also many less.

It is important to note that all these suppliers are spread to different parts of the world and the procurement is done in a global scale, especially in the case of chemicals. Regarding the basic products, the procurement is also global but as sometimes the suppliers are smaller and with fewer resources, it is more common that factories are supplied by nearby farms. In total, about 76% of materials are bought globally. (*Unilever: becoming the best*, 2011)

- Manufacturing Sites

Manufacturing sites, also called factories, are where the raw materials are transformed into the final products. Each site is responsible for manufacturing a

different type of product. For example, the Missouri factory produces liquids, the Mexico factory produces aerosols and the South Africa factory produces savory food. In total, Unilever owns about 500 factories of which about 300 involve food and about 200 involve home and personal care products. (Paul Elshof and FNV Mondiaal, 2005)

- Distribution Centers

Distribution centers are the next step in Unilever's supply chain. Once the products are manufactured, they are sent to the distribution center that is closer to their final destination. Therefore, distribution centers are strategically placed to reach the maximum number of potential points of sale. To get an idea of the scale, only in Europe Unilever owns over 100 distribution centers. (*UltraLogistik: A success story about Unilever's European Transport Operations Centre in Katowice*, Poland, 2012)

- Customers

Finally, the products are delivered to the customers, either directly to stores or to their own distribution centers, if they have some.

Note that the customers are not the consumers of the product. As Unilever doesn't have its own retail stores, its products are sold to the final consumers through supermarkets, department stores, groceries, drugstores and other types of store.

These customers range from large retail corporations (e.g. Walmart) to small self-managed stores. In total, Unilever serves more than 160.000 points of sale worldwide. (*Unilever: Becoming the best*, 2011)

Figure 4.4. Unilever customers sending its products

4.1.2. Main features of the supply chain network

Now that we know the elements of the chain, we will try to identify the main features that make it so effective and efficient.

- Differentiated supply chains:

As we have already seen, the chain changes depending on the product and the market. Each product follows a different line, going through some concrete suppliers, a specialized factory and a distribution center that fits his final point of sale. This obviously makes sense when we are talking about products as diverse as a deodorant or a mayonnaise pot. However, this differentiation is done in all products, including those of the same brand and similar characteristics.

This focus on the creation of a particular chain for each different product is one of the cornerstones of Unilever's success. In this way, quality both in service and in the product itself is clearly increased.

- Global scale in procurement and logistics:

Another important point is the way procurement is done. As we have already said, it is done global in most cases to exploit the advantages of low cost countries and to obtain a high quality raw material. Thus, sourcing is done in many different parts of the world, depending on the product. For example, Lipton tea usually comes from large plantations in Sri Lanka, some Flora margarines are made from soybean oil obtained in Brazil and the palm oil used in Knorr soups, Dove soaps and also Flora margarines comes from Indonesia.

This forces Unilever to have a large enough logistics network to carry all these products from their sources to their factories, probably located far from each other. That's why they have worked and invested so much in this area to achieve a scale in logistics that allows them to carry their products from one continent to another in record time and low cost.

- Local agility:

However, as we go along through the chain, decisions are taken more locally to respond quickly to customer requirements. Planning is made locally, usually by country or region, and there is a constant communication with each costumer through sales representatives. This helps to provide a more personalized service and have a more agile and flexible chain. Also in distribution they emphasize agility by planning it locally to ensure on-time transports. Moreover, the fact that every product has a differentiated supply chain contributes to local agility.

- Strategic partnerships:

Unilever also ensures the quality of its products through strategic partnerships with its suppliers. Especially in recent years, Unilever has worked hard in growing with suppliers through innovation, investing large amounts of money on innovation projects shared with its major suppliers and, because of that, obtaining higher quality and more sustainable products. Specifically, between 2009 and 2011 more than 1,3 bn € were spent in supplier capacity investment and over 70 active suppliers initiated innovation projects. (*Unilever: Becoming the best*, 2011)

Another area where strategic partnerships are very important is logistics since most of the transports are carried out by subcontractors, also called third-party logistics companies. Therefore, obtaining long-term contracts with these companies and a regular and fluid communication with them are key processes in order to provide good service to customers.

4.1.3. Other important aspects of the strategy

We have just explained the most important features of Unilever's supply chain, but they are not the only ones. Many other aspects of the general strategy of the company are necessary to understand this type of products and some following parts of the study.

- Service optimization:

In Unilever's supply chain, almost all the activities are optimized following the same criteria: customer service. This is for one simple reason: customers keep a space on their shelves for Unilever products and their main requirement is that those spaces are always filled so that the consumers can buy the products. So, this *on shelf product*

availability is Unilever's ultimate goal because what insures the profits for the company is to keep those spaces or even increase them in volume and, so, money paid by the customers, and the best way to do it is always filling these reserved spaces.

Nevertheless, we should not forget that the *real* customer is not the supermarket or the department store that reserve these spaces on their shelves, but the consumer who consumes these products. If the Unilever product is not available, due to the wide variety of food and personal care products that are in any supermarket, the consumer will buy another one, and that will ultimately affect Unilever, reducing their spaces on shelf and, consequently, their incomes.

Therefore, from all points of view, *on shelf product availability* is the main objective of Unilever's supply chain, as this will keep its customers, will increase its number of consumers and will improve its incomes and profits.

- Promotions and events:

Another important feature of this type of products is that they are very promotional. Habitually, the marketing department decides to create some kind of event for some products such as "buy 1, get 1 free" or a percent of free additional volume. These actions, which try to capture the attention of the consumers and are fairly easy to carry out in this type of products (because it is manufactured by volume, not one by one as a shirt or a car, so the only think that has to be changed is the container size) clearly affect the supply chain planning, specially the demand one, as we will see later.

Figure 4.5. Some typical promotions in Unilever's products

- <u>Sustainable living plan</u>:

In recent years Unilever has being doing a lot of effort in reducing its impact on the environment. For this purpose, as in terms of quality, it not only tries to improve its own processes but also those of all other actors involved in the supply chain through partnerships and innovation projects.

In the case of suppliers, these projects are mainly aimed to obtain a complete sustainable sourcing of raw materials, avoiding, for example, deforestation. They also try to hardly reduce CO_2 emission in their manufacturing processes and in transportation, increasing carriers loading efficiency. Below, we can see an illustration of how they are improving in this aspect and objectives for the coming years.

Finally, note that this does not only contribute to the improvement of the environment, one of the great challenges of our society, but also improves the quality of the products and makes them more valuable and engage more consumers.
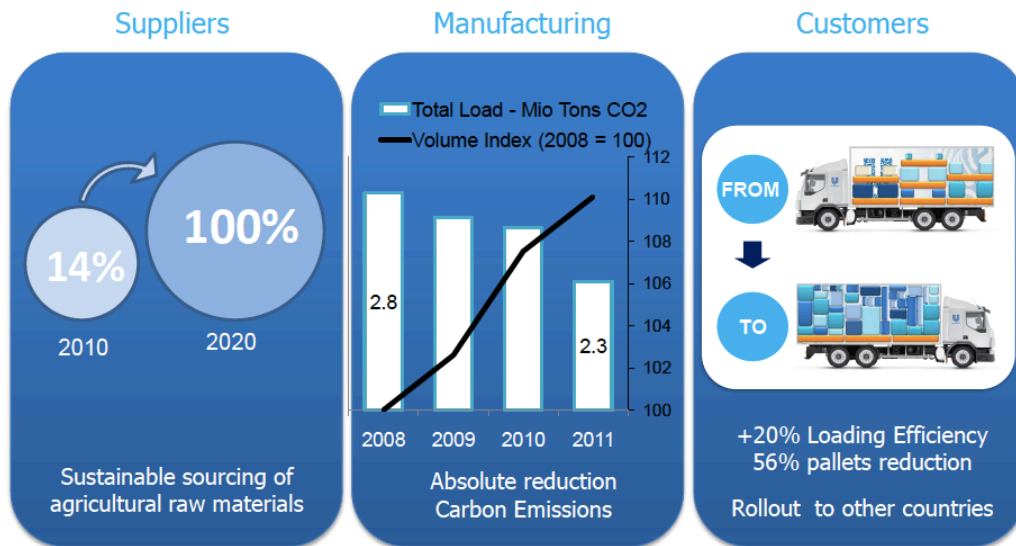
Figure 4.6. Unilever's sustainable living plan

4.2. Demand Planning & Consumer Information

After this introduction to understand, broadly, Unilever's supply chain and the strategy related to it, we will study its planning. To begin, we will analyze how the demand forecast and the sales planning are done.

As we have already said, Unilever's performance highly depends on ensuring "on shelf product availability". For this purpose, it is very important to be very accurate in the forecasting process. In addition, a good demand planning helps a lot in the goal of having a short enough reaction time, always ensuring the volumes reserved by customers without having too much inventory in the factories and the distribution centers.

Finally, this stage is crucial to carry out a proper supply chain planning in such a promotional market (about 40% of the products are promoted at the same time) without affecting the profits of the company.

4.2.1. Sales Forecast

All the supply chain planning process begins with the sales forecast and the subsequent creation of the demand signal. This forecast is done separately by volume of product, location and customer group.

By location we mean by distribution center, since each distribution center is associated to a specific number of points of sale. Therefore, for example, all the points of sale in Illinois and other states in the Midwest region are supplied from a distribution center located in Edwardsville, Madison County, IL. Then, the sales for a particular product of all these points of sale are forecasted together.

However, not all the points of sale are planned together. As we have said, the planning is also done by customer group. Actually, there are costumers who have a separate account, so the sales planning for these customers is done separately to the other customers. To belong to a particular group of customers, the following three conditions are required:

1) All members of the group (if more than one) must have similar properties, i.e. specific product portfolios. Then, supermarket chains could be in one group, drugstores in another group, etc.

2) The companies have to be large enough to need a singular forecast.

3) They have to provide enough inputs, in terms of information, in order to be able to have a personalized forecast.

Nowadays, in United States, the only customer that has its own account and, therefore, its sales are planned separately from the others is Walmart, since the daily

volumes that this consumer goods giant purchase are significantly higher than those of the other customers in this country. Nevertheless, Unilever is lately considering creating another separate account to another customer that is already meeting the requirements: Target. Sales for all other customers, so far, are planned together.

But let's get to what really matters: how is the demand signal constructed? It is created from the next three variables:

1) Statistical bases of the last three years:

The fact that demand is very stable and the products have a quite long lifecycle enables that demand can be predicted from the history of recent years (in this case, they use the last three years). Then, they get a weekly forecast for the following two years. In the following picture we can find an example of a shipment history of a shampoo/conditioner in the United States.

Figure 4.7. Shipment history of a shampoo/conditioner in the United States

First, we can see, as we had already supposed, that demand is very stable. In the two years that are represented in this figure (from December 2010 to December 2012), the number of sales remains quite stable, without exaggerated trends or different results depending on the time of year. Other data that helps to confirm this assertion is that the variance, which we can see in the top left of the figure, is just 17%. On the other hand, note that the sales are grouped weekly, because the forecast that will be drawn from this history, with the help of some statistical methods, will also be weekly.

So, these sales histories allow them to create the first part of the demand signal, which serves as a general estimation for the next two years. However, it is not accurate enough and that is why, for a closer horizon, other variables are also used.

2) <u>Sales representatives by area</u>:

The second part of the signal, that makes it more accurate, is in charge of sales representatives. These people are responsible for communicating and negotiating with customers in a specific geographical area and provide, then, the estimated amounts that will be sold in this area. This second part of the signal is mixed with the first one and gives a forecast for the following 16-17 weeks.

3) <u>Customer orders</u>:

Finally, they also use the orders that customers generate in the present to predict those that they will generate in the future. Most of the customers generate orders once a week (except from Walmart, which generates them once a day) and this information is also used in the process of creating the demand signal. This, again, is possible because of the stability of the demand. If the products suffered seasonality, for example, this data could not be considered.

By joining the three variables, with the help of mathematical tools that are provided by the technological systems (which we will study more in depth later), they get a signal with a very small margin of error, which allows them to plan the demand for the coming months.

∗ <u>Promotional volume</u>:

Before proceeding to other parts of the study, it is important to analyze how promotions affect demand forecasting. As during promotions the company sells more volume than usual, in the process of demand forecasting they add a negative volume (according to sales due to past promotions) to the demand signal. Like that, they find the "real" demand (the volume that will be sold in the future, depending on what was sold in the past, regardless of the past or future promotions). Then, they add the expected demand of new promotions, which obviously is positive. This is done in this way because promotions may have changed and, even if they were the same, may have different impact.

4.2.2. Consumer Information

But apart from the shipment histories, customer orders, etc., it is important to collect consumer information. Maybe not for the creation of the demand signal, since this depends on the customers, but for seeing the real performances of the products in the market and thus be able to decide which products have to be removed and how the new ones should be.

Customers, obviously, collect information on all the products they sell in their stores. However, they do not usually share this information with other companies, even

their suppliers, as Unilever. Fortunately, there are other ways, such as the Nielsen Company.

Nielsen is a global information and measurement company that enables companies to understand consumer behavior. It measures and monitors what consumers watch (programming, advertising) and what consumers buy (categories, brands, products) on a global and local basis.

Figure 4.8. Unilever uses Nielsen reports to get some consumer information

Thanks to their reports, Unilever can see consumer trends on most of its products and draw appropriate conclusions. These reports are used by the marketing department to remove the products that are not having the expected performance and to identify the properties that new products must have. We call this the assortment planning.

- Assortment planning:

In this case, as they are stable demand products and so they have a long lifecycle, most of the portfolio remains in the assortment. The only products that are removed are those that have been released recently and are not responding as expected, even with promotions. It is for this reason that in Unilever there is a very little frequency of changes: only three or four times in the last ten years.

In consequence, very few new products are released. The changes focus, specially, on the product image and presentation, and the fragrances in the case of personal care products. These changes, that are also in charge of the marketing department, are made taking into account, as has been said above, the consumer information and also the competitors' products.

In conclusion, the assortment planning only serves as a checkpoint to identify the products that are not having the expected performance and remove them from the assortment. All the other products, that are the majority of them, remain in the assortment, sometimes with some small changes related to the consumer attributes (image, presentation, fragrances) but no major changes are made.

4.3. Inventory Management & Physical Distribution

Once the demand is specified, the subsequent planning begins in order to meet this demand. This subsequent planning can be divided into three processes: sourcing, manufacturing and distributing. Below we can see a brief outline of these planning processes and what each handles.

Demand Planning
It tells the quantities of each product to produce

Supply Planning
It says if the demand can be met or not

MRP I & MRP II
It schedules the production and controls the inventory at factories

Distribution Resource Planning
It schedules the distribution of final products considering inventory levels

Figure 4.9. Planning stages at Unilever

The cycle, which has a monthly cadence, starts when the demand-planning unit provides the expected demand for the next month. Then, the supply planning is carried out, determining whether the demand can be covered with the production capacity of the factories or not. If yes, demand planning is confirmed and they go on the following steps. Otherwise, the amounts are changed until they fit the factories production capacity.

Then, a file is created for each product and it is sent to the factory in charge of the production of this product. This file contains the following three variables and is used all along the chain:

- Item: How many items have to be produced?
- Location: To which distribution center has to be sent?
- Customer: Which customer has to receive it?

So, each factory gets the information of the quantities of each product that it has to produce and the distribution center where it has to be sent, and there begins the production planning. It is important to note that each factory manages and optimizes its own production. For this, the systems MRP I and II are used. These systems, called respectively Material Requirements Planning and Manufacturing Resource Planning, are used to plan manufacturing and purchasing activities, to ensure materials are available for production and products are available for delivery, and to maintain the lowest possible material and product levels in store. So, they are not only a production-planning tool but also an inventory control system.

Finally, the Distribution Resource Planning (DRP) is carried out. It is used for planning orders within the supply chain (factories, distribution centers and customers) and enables Unilever to set certain inventory control parameters (like a safety stock) and calculate the time-phased inventory variables.

So, as we can see, in the last two stages of planning, inventory management plays an important role. Although MRP and DRP systems help to control de raw materials, works-in-process and final products inventory in the factories and the distribution centers, they are not the only ones used. In the next section, we will learn what strategies of inventory control are applied, what criteria are used and how it is carried out.

4.3.1. Inventory Management

As we have already seen above, the *on shelf availability* is the main objective of Unilever's supply chain. However, large amounts of products should not be stored to do this, as they cause a waste of space and money to the company. Thus, in order to optimize the relation higher availability / lower inventory, different strategies are used.

First, products are classified by lead-time. On the one hand, if the products have a high rotation, e.g. they are very sold, they are manufactured weekly and few units of inventory are stored. Just like that, higher flexibility and shorter reaction time are achieved in case that the real demand is slightly different than expected. In addition, as they are very sold and their demand is quite stable, it is much cheaper to not stop production rather than to have large amounts of inventory.

On the other hand, if the products have a low rotation, e.g. they are few sold or they are seasonal, the procedure is completely opposite: they are manufactured in a given time and stored in stock for several months. This is because it is cheaper to have them stored than to have the production lines working all the time while so few products have to be manufactured.
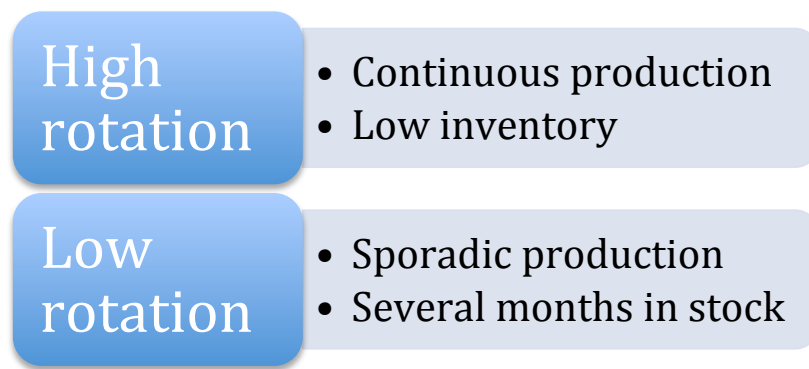

| High rotation | • Continuous production
• Low inventory |
| Low rotation | • Sporadic production
• Several months in stock |

Figure 4.10. Main strategy of inventory management depending on the product

Apart from this, to minimize the size and cost of the inventory, the following strategies are adopted:

- They have someone personally verifying every part of the inventory, including how many and where they are located.

- Every part has a maximum stock level and a minimum stock level. This prevents over-ordering.

- Everything is barcoded where it can easily be scanned. Like that, they can input all data into the inventory management systems and control that the part is where it should be.

- Obsolete and unused parts are sold or disposed as they take up space and create clutter.

- They hire third-party companies to manage the inventory. Factory employees often have other tasks and don't have the expertise to manage the inventory so turning to third-party companies allows them to save time and money.

Regarding these two last points, for example, ten years ago Unilever hired IBT to manage its inventory in the United States, as it was growing too fast for the employees that were handling it. According to Alvin Franks, TPM/Maintenance Manager for Unilever in Independence (Missouri), in *Unilever saves money with better inventory control* (IBT, 2013), "IBT helps us to track the slow-moving parts and make recommendations to remove, eliminate or sell parts, which saves us money". Regarding other aspects of the inventory management, other specialized companies are hired to give some valuable advice.

4.3.2. Physical Distribution

In terms of distribution, it not only refers to the final products transport between distribution centers and customers, but it covers all the process from the suppliers to the customers. Specifically, there are three types of transport according to their function:

- Inbound transports:

These are the transports of raw materials from the supplier's factories or farms to the appropriate Unilever factories. As we have seen in section 4.1, most of the sourcing is done globally, what means that, in many cases, these transports have to cross different continents so are long and expensive. Thus, large amounts of materials are transported simultaneously.
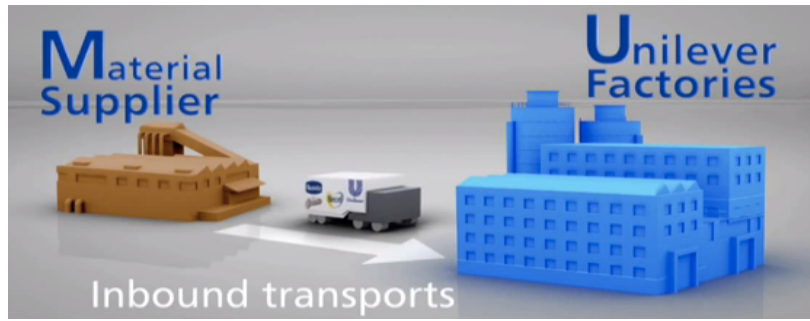
Figure 4.11. Inbound transports: from Material Suppliers to Unilever Factories

- Primary transports:

This group refers to products already finished which have to be moved to the appropriate distribution center. In previous sections we have seen that factories are not placed according to proximity to outlets but by product specialization. That causes that these transports can be also very long, as, for example, the Illinois distribution center receives products from factories all around the United States, Mexico and, even, across the Atlantic Ocean. However, the large number of Unilever factories allows that most of the products are not just made in one factory and, therefore, most of these transports take place in only one continent.
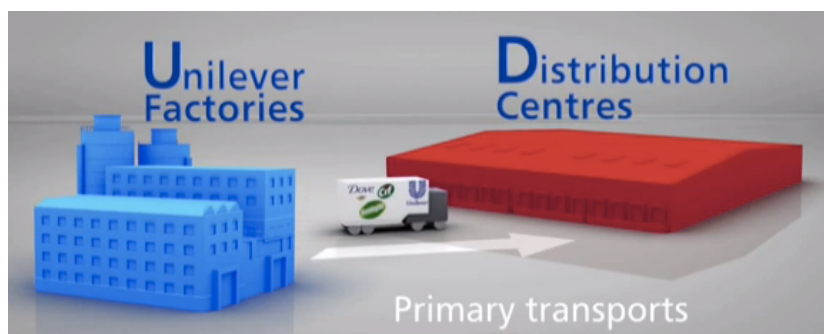

Figure 4.12. Primary transports: from Unilever Factories to Distribution Centers

- Secondary Transports:

Finally, there are the transports between the distribution centers and the customers. As we have already seen, the customers generate an order directly through

an IDE (Intercompany Data Exchange) system, generally once a week. After, the products ordered are transported from the nearest distribution center directly to customer or, if they have one, to the customer's distribution center. These transports are shorter, faster and cheaper because the distribution centers are strategically placed to cover a specific number of outlets.
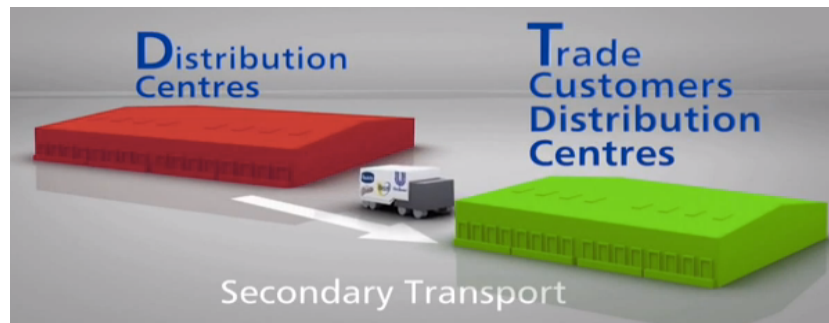

Figure 4.12. Primary transports: from Unilever Factories to Distribution Centers

All these transports are carried out by third-party logistics companies and can be done by air, sea, railroad or road. Specifically, the preferred modes of transport are ships and trucks. The ships are used for some inbound and primary transports because the journey is too long for trucks and trains (and many times, as they have to cross oceans, it is impossible with these modes of transport) and they are cheaper than planes. In addition, as they are not urgent transports but they can be prevented in advance, slow shipping is not a problem. In the case of secondary transports and other short journeys, the mode of transport the most used is the truck because it offers much more flexibility than other modes of transport and this is the most important requirement in these types of transport, in which the order is received just a few days before.

But how all these transports are managed and controlled? This is done through the distribution centers and, overall, through a common control center for each continent. This organization, called UltraLogistik, is responsible for planning all the transports of the continent, hiring carriers and ensuring that the distribution of raw materials, semi-finished products and final products is done correctly. In Europe, for example, the UltraLogistik control tower is in Poland and manages over 40.000 transports per month. (*UltraLogistik: A success story about Unilever's European Transport Operations Centre in Katowice, Poland*, 2012)

Unilever's Internal Transport Organisation

Figure 4.13. Unilever's transportation is managed from UltraLogistik's center

Specifically, the shipment procedure works as follows:

1) First, customer orders what he needs 1 or 2 days before collection. Then, the order is assigned to the nearest distribution center, which informs, through the TMS (Transport Management System), UltraLogistik's center the features of the transport that has to be done.

Internet based Transport Management System (TMS)

Figure 4.14. Step 1: The dispatching location informs through the TMS

2) Automatically, the TMS selects a carrier for this transport. If he can do it, he confirms the operation also through the TMS.
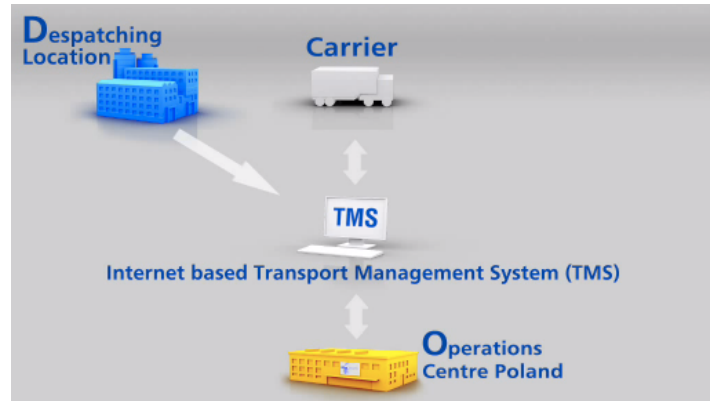

Figure 4.15. Step 2: The TMS selects a carrier

3) The carrier executes the transport according to the instructions. Once the shipment has reached its destination, the carrier informs through the TMS that the delivery has been successful, reports any incident that could have occurred and receives the accorded payment.

Apart from this, the UltraLogistik operations center also has regular contact with all the factories, sourcing units and distribution centers of the continent to identify potential problems in transportation to better meet their needs.
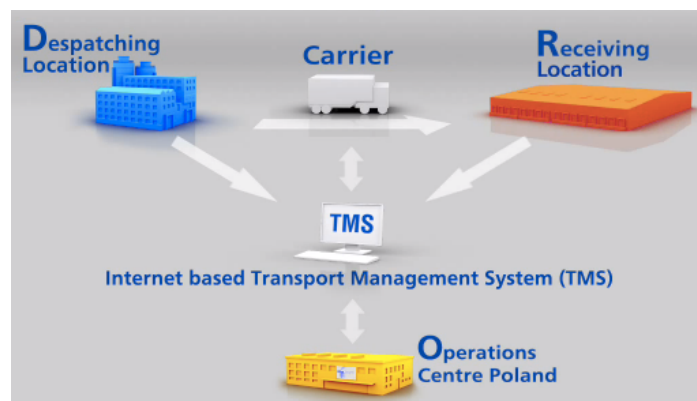

Figure 4.16. Step 3: The carrier carries out the transport and, when finished, reports it through the TMS

4.4. Information Systems

To finish this analysis of Unilever, we will study how the information is managed and what systems are used for the most important parts of the Supply Chain Planning process. This aspect is very important because, although each activity works well independently, the entire supply chain efficiency depends heavily on a fast and appropriate exchange of information between all these activities.

4.4.1. Role of Information Systems

Information Systems play a very important role in a large company as Unilever. We recall that it owns over 400 brands and operates in over 100 countries, with factories, distribution centers, offices, etc. scattered throughout the whole world. So, it would be impossible to compete and could quickly lose control of it if they didn't have good control over their information.

If it were a single factory, where all the products were manufactured and shipped to a few points of sale, high-quality information would not be so important. However, as we have seen above, Unilever has more than 500 factories and each one (or groups of 2 or 3) manufactures a type of product for an entire continent. This causes that decisions have to be taken in a global scale and high-quality information is needed to support these decisions.

Chris Boe, a senior figure in Unilever's IT, explains it like this: "You will then find that, unless you have got high-quality information systems, you can't possible run those businesses. When it was a case of the factory manager looking out of the window to see how things were going on the factory floor, you could do that in one location; now the manager may need to look over the whole continent, and he can't do it in the way he did

before. In order to support business change, you need to build in new information systems." (*Role of IT Unilever*, Prospects, 2012)

It is for this reason that Unilever, as it has been growing as a global company, has had to pay special attention to improve their information systems at the same time. In recent years, IT management has become one of the most important areas for growth, getting to invest around one billion euros (2% of their turnover) per year. (*Role of IT Unilever*, Prospects, 2012) Moreover, as we can see on the following picture, this number is rising every year.
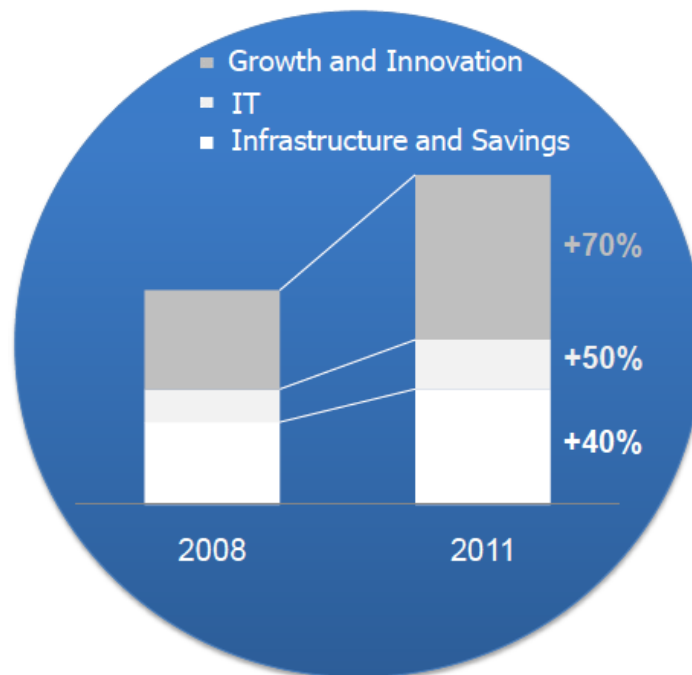

Figure 4.17. From 2008 to 2011, the money invested on IT rose 50%.

4.4.2. Business Integration: One Unilever

In this line, Unilever began in 2004 a global initiative called "One Unilever". (Faiza Javaid, 2012) This involves having a single information portal for the whole company with the purpose of eradicating duplicity and leveraging its scale. Thus, this integrated all the software systems for supply chain planning, inventory forecasting, customer

relationship and enterprise resource planning to unify its infrastructure and better control all the processes.

Through this unique information portal, different business areas from different countries share valuable information in a simple and direct way, causing a high rate of response to the market and helping to make decisions at all levels of the chain. In addition, one of the most important goals of the IT department is to simplify all the processes, which streamlines the supply chain planning and greatly reduces errors in supply chain execution.

But not only the differents parts and activities of the company are integrated in this system, suppliers and customers also have acces to some of this information and a lot of work have been done in order to improve E2E solutions, to enable a fluid exchange of information with other companies.

In the section, for example, we have already seen that the third-party logistics companies receive the shipment information, report and charge via the system used for Unilever's logistics. This is also common with suppliers of raw materials and customers, who directly order the quantities of products that they want through Unilever's system.

This decision to integrate customer in Unilever information systems used to supply chain planning has two main objectives: on one hand, to improve service to the final consumer and, on the other hand, to lower both Unilever and customers inventory. In the following figure we can see qualitatively as, indeed, integration of business processes and consumers improves service, lowers inventory and, then, represents a strong business growth.
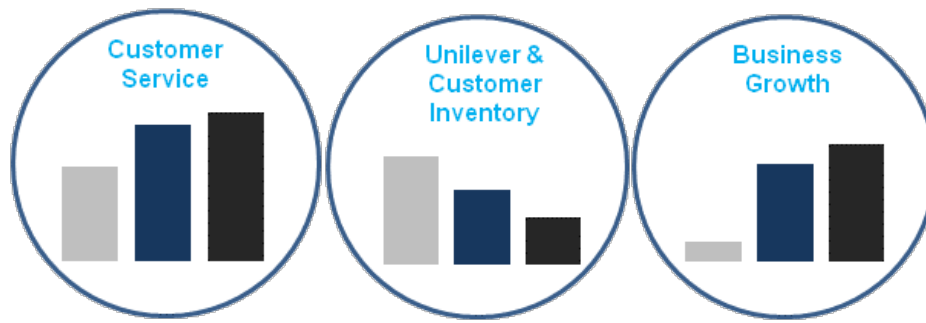
Figure 4.18. Results of business planning and customer integration in the years 2009, 2010 and 2011 in Unilever Mexico

4.4.3. SC Planning solutions

Within this unique information portal, there are many specialized solutions that are interrelated. Next we will focus those used in the activities that have been studied in this section.

First, note that the enterprise resource planning software (ERP), as well as many particular solutions, has been implemented by the German provider of business software SAP. In December 2006, Unilever signed a Global Enterprise Agreement with SAP to aid its global business transformation project, enabling broad access to licensed SAP solutions. Since then, SAP has played an important role in the IT area of Unilever, helping to create a service-oriented architecture and providing solutions in the areas of finances, business intelligence, data exchange, etc.

- Business Intelligence: SAP, Microsoft, Teradata and Tableau

To help its employees make better decisions, the company has constructed a global analytics powerhouse. The base of this "powerhouse" is a global enterprise data warehouse (EDW), built using Teradata's database and using SAP software for extract, transfer and load (ETL) and master data management (MDM). On top of the EDW,

Unilever has built two further layers. The first is a document repository containing standard reports, which employees can access through a Microsoft SharePoint front-end. The second is a business intelligence layer, built using Microsoft's BI infrastructure and data visualization software from Tableau. This allows employees to find the answers to their questions as they arise. Thanks to all this, which is still being implemented and constantly evolving, decisions are made faster and better than ever. (*Unilever's business intelligence strategy,* 2013)

- Forecast and Demand planning: Terra's Demand Sensing

In order to improve forecasting accuracy and help create a more agile and efficient supply chain, Unilever has implanted, first in North America and next in Europe, Terra's Technology Demand Sensing. This is literally a mathematical tool that takes all of their inputs (as we have seen in section 4.2, these refer to existing forecast, historical shipments and customer orders that are coming in every day) and runs these through its pattern-recognition algorithms. (*Unilever plan to lower European inventory*, 2013)

- Inventory Management: Terra Multi-Enterprise Inventory Optimization

While Terra's Demand Sensing was implanted, they also began working with Terra Multi-Enterprise Inventory Optimization in the area of Inventory Management. This solution provides better inventory management complements allowing Unilever and its customers to optimize service and improve on-shelf availability without the risk of carrying excess inventory. (*Unilever optimizes and forecasting and significantly lowers inventory*, 2013)

- Supply Chain Management: Manugistics SCM

Apart from Terra solutions, Unilever also uses Manugistics SCM for many areas of the supply chain. This software consists of network design and optimization, manufacturing planning and scheduling, sales and operations planning, fulfillment management and CPFR (collaborative planning, forecasting and replenishment). (*Manugistics Supply Chain Management*, 2010)

- Logistics: Internet based Transport Management System

As we have already seen, in the areas of distribution and transportation, they also use a particular system that helps them to plan transport and allows a direct communication with consumers and third-party logistics companies. All the information about a shipment is contained in this system and, then, carriers can know all the features (address, receiver, volume, etc.) and change its status (running, delivered, etc.) real-time.

Figure 4.19. Example of a shipment file, which can be seen and changed by transport planners and also carriers

- On-shelf availability: Kalido's Active Information Management

To ensure stores are well stocked with its products, Unilever has implemented Active Information Management system from supplier Kalido. This software process in-store data sent from shops to the Unilever data warehouse and translates it into relevant, actionable data, so that executives can take decisions to ensure shops do not have a shortage of Unilever products. (*Unilever uses information management to keep shelves stacked*, 2007)

5. THE FASHION INDUSTRY

To study the case of *fashion products*, we will analyze one of the leading companies of this industry: Inditex.

Inditex is a Spanish multinational clothing company headquartered in Arteixo, A Corunya, Spain. It is the world's third-largest clothing company measured by actual revenues (€12.6 billion in 2012) and operates over 6200 stores worldwide. (Inditex's official website, 2013) In the field of supply chain management, Inditex is ranked second in Europe and twelfth in the world according to Gartner's Ranking of Top Supply Chain Organizations for 2013.

Figure 5.1. Inditex headquarters in Arteixo, A Corunya, Spain
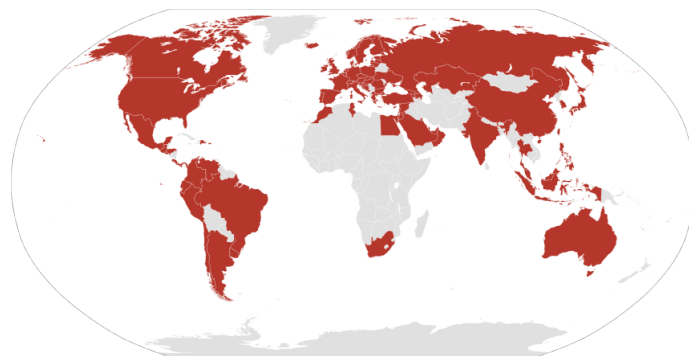
Figure 5.2. Inditex global presence

Zara is the flagship brand of the group but it is not the only one. Next we can see all the brands owned by Inditex and a short explanation of the main products that are sold in each one, all of them related to fashion.

Figure 5.3. Inditex and its brands

- Zara: It encompasses many different styles, from daily clothes, more informal, to the more serious or formal, through dresses and suits for festival events. Fashion for women, men and children.

- Pull and Bear: This brand focuses on casual, laid-back clothing and accessories for young people with a very urban style, at accessible prices.

- Bershka: This store began distributing fashion for girls, and, more recently, for boys too. It also has a youthful style, although not as urban as Pull & Bear.

- Massimo Dutti: The highlights of this chain are more elegant, classic, and studied designs, for daily and formal clothes. It is more expensive than the rest of stores of the group. It offers fashion for women, men and, recently, for children.

- Stradivarius: This brand has an innovative concept in fashion, targeting young women with clothing garments and accessories.

- Oysho: Women's homewear and undergarments.

- Zara Home: Domestic merchandise.

- Uterqüe: Accessories and garments.

As we can see, all these products are related to fashion and, therefore, to social trends. Moreover, most of them, exhibit a high seasonality. Thus, their demand is very difficult to predict because their lifecycle is very short and they have to be replaced by other products frequently. In the following pages we will see how Inditex solve these problems and, in fact, has set up a peculiar supply chain, perfect for this kind of products.

5.1. Supply Chain Configuration

5.1.1. Supply Chain Network

Inditex divide its supply chain in five main elements: Suppliers, Manufacturing Sites, Distribution Centers, Warehouses and Stores. Here are the features of each one and the reason for their existence.

- Suppliers

Inditex buys from its suppliers basically two types of product: fabric to manufacture its own clothes and clothes already manufactured. This purchasing process is made through several companies, also belonging to Inditex, such as Comditel (a network of purchasing centers spread over different countries which is responsible for 40% of the purchasing volume of the whole group).

Among these products that are purchased (either fabric or finished clothes), we can distinguish two different types:

- Basics:

Most of the clothes that are sold by Inditex brands are considered basics. This term is used to refer to clothes that are always sold fairly easily (changing perhaps the

colors or slightly the shapes). A man's shirt, for example, is a basic, as the color or the shape can change a little bit depending on the season but the idea is always the same. Almost all jeans, t-shirts and underwear are also basics.

Such products, which provide the bulk of profits for Inditex, are not made by high quality fabrics and, therefore, are cheap and accessible to all customers. Thus, to get such large volumes of cheap fabric, Inditex purchases in countries such as China, India, Bangladesh or Turkey. Specifically, China is the country with more suppliers (249 out of around 900).

- High quality and image:

However, Inditex also sells high quality clothes for image. Actually, the daring dresses that we see in the showcases of Zara are rarely purchased by customers, but serve to create an image of fashion and trends that invites pedestrians to enter the store (and buy some basic products). These clothes and accessories that appear in fashion magazines and tabloids (on the bodies of some celebrities), are made of much higher quality fabrics and, therefore, are much more expensive.

These fabrics representing quality and image are purchased in European countries specialized in fashion such as Italy, France or Spain. Obviously, these fabrics are much more expensive but represent an almost negligible volume compared to the other ones.

• Manufacturing Sites

The next step is to convert those fabrics into clothes. This process is mainly outsourced, sending the fabrics to manufacturers from other countries, usually near the

headquarters, as Morocco or Portugal. Moreover, as we already know, a lot of clothes arrive already manufactured from more distant countries as China, India, Bangladesh or Turkey.

The subcontracted factories take over the production of the clothes, which represents more or less the 70% of the whole manufacturing work, and they are finished (cutting, pressing, labeling, etc) in Inditex distribution centers. Actually, Inditex has no own manufacturing sites but the distribution centers fulfill that role sometimes. However, as we have already said, almost everything is done in external factories. In total, Inditex works with more than 2000 external factories.

Finally, it is important to highlight that all the clothes are designed by Inditex and manufacturers only copy the models coming from Inditex headquarters.

- Distribution Centers

As we have already seen, once the clothes are manufactured they are sent to Inditex distribution centers, where they are finished and shipped to the stores. An important feature of Inditex supply chain is that this process is completely centralized: each brand has only one distribution center (with the exceptions of Zara and Pull & Bear, which have two, one for men and one for women) and almost all of them are located in Spain.

In the next picture we can see exactly where they are located. Note that some distribution centers serve for more than one brand (Bershka, Massimo Dutti, Oysho and Uterqüe share a center in Barcelona and Zara Kids, Zara Home and Pull & Bear Woman share one in Madrid) and that there is only one distribution center that is not located in

Spain, but in Brazil, which is responsible for the distribution of Zara products throughout the southern hemisphere.
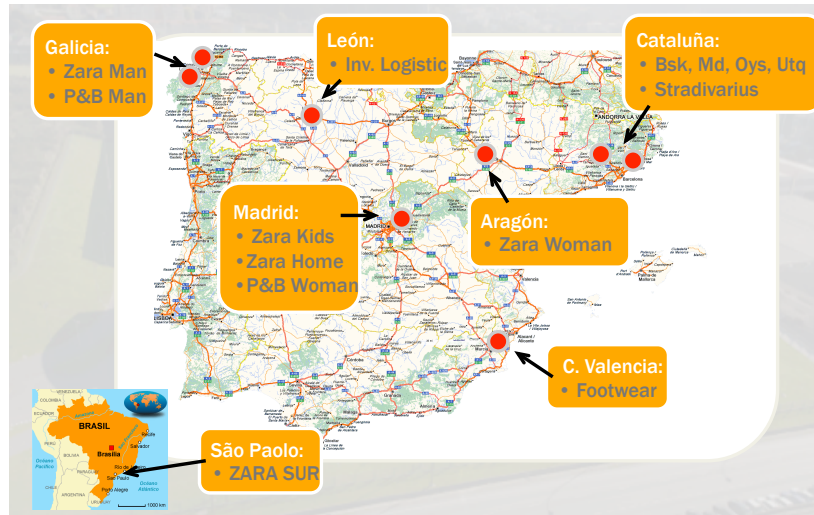
Figure 5.4. Location of Inditex Distribution Centers

By having only a distribution center per brand (or section, as the case of Zara Man and Zara Woman), the processes of inventory management and distribution are highly simplified as all the products go through that point. This is the reason why Inditex prefers to work this way, unlike most of other large companies.

- Warehouses (or Hubs):

Before arriving to the stores, the products go through small warehouses strategically placed near the maximum number of stores. However, products do not spend a lot of time there, but just few hours, because these warehouses only serve as hubs, to better distribute small-scale shipments.
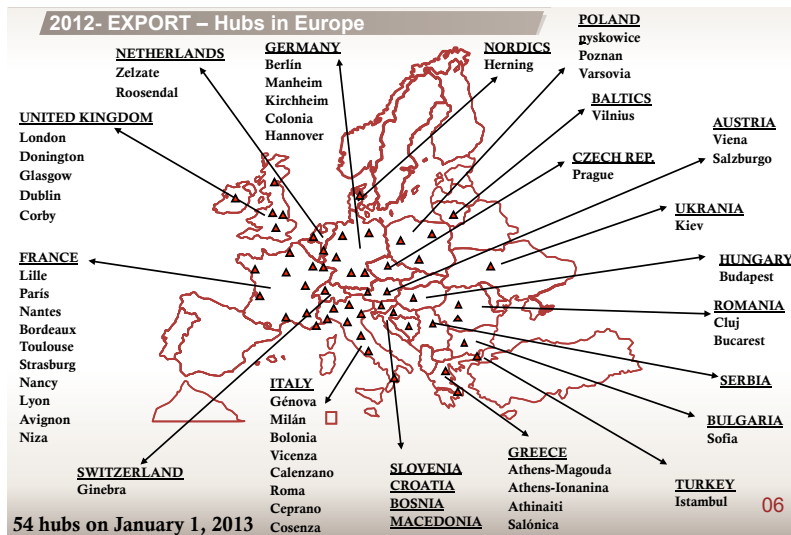
Figure 5.5. Location of Inditex warehouses (also called hubs) in Europe

Moreover, in recent years, Inditex has begun to use e-commerce and, in consequence, a new kind of warehouses has appeared: e-commerce warehouses. They are located in the most important countries (there is one in Madrid for Spain, one in Corby for Great Britain and other European countries, one in Boston for USA and Canada, one in Moscow for Russia, one in Shangai for China and one in Tokyo for Japan) and they work in the same way as stores (you search on the internet what is available in the nearest warehouse, you buy what you want and a carrier brings it to your home).

Figure 5.6. Location of e-commerce warehouses

- <u>Stores</u>

Finally, the last step is the stores, where consumers buy the clothes and accessories they want. Note that Inditex only sell its products in its own stores. On November 2013, Inditex had 6249 stores spread over 86 different countries, being Zara the brand with more stores (1808) and the only one present in all those countries. (*Inditex's official website*, 2013)

But not all the stores have the same function. Similar to what happens with clothes, Inditex also opens stores only because of image and others in which practically only basics are sold. The store in New York's fifth avenue or in other well-known shopping areas serve as a showcase to the entire world so there is where the most avant-garde models go. Therefore, each store is managed differently depending on the area and the customers. Nevertheless, to give an image of novelty and constant change is very important in all cases.

Figure 5.6. Zara stores examples. The first image shows an outside of a store in a large city's downtown so the models that are in the showcase try to attract consumers and set new fashion trends while in the second image we can see the inside of a store full of some basic products.

5.1.2. Main features of the supply chain network

• Different supply chains (but following the same model):

As we have already seen, each brand has its own supply chain, with a particular distribution center and specialized stores (there is no store where products of different brands are sold). Nevertheless, all of them follow Zara's modus operandi, which was the first brand to be created, having an amazing success thanks to its particular supply chain management.

• Global sourcing and production:

Both sourcing and manufacturing are made in global scale. Actually, as we have seen, practically nothing comes from Spain. In the next figure we can see where the fabrics and the clothes are produced. Most of them come from Asia, especially from China and Bangladesh, but also from nearer countries (what they call proximity) as Portugal and Morocco. Another important part is also manufactured in Turkey and, finally, only 1% of the products are made in the rest of the world. This small portion refers, as we have said, to more expensive countries such as Italy or Spain.
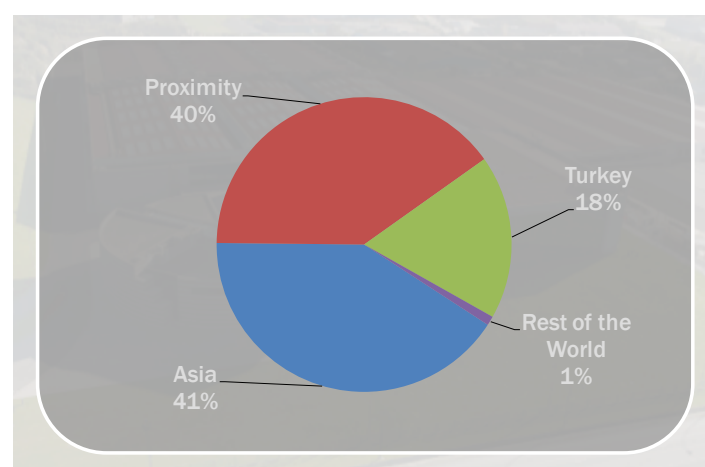
Figure 5.7. Graphic showing where Inditex is supplied

Note that 99% of the products are produced in what is known as "low cost countries". In all the countries mentioned above, the average salaries are considerably lower than the Spanish one (around 1000€/month), as we can see in the following table. Thus, Inditex manages to produce more cheaply and offer a more competitive price.

Country	Employees	Average salary (€/month)
Portugal	16.000	777,10
Morocco	50.000	253,61
Turkey	50.000	600,12
India	52.000	90,13
China	200.000	498,14
Bangladesh	230.000	54,32

Figure 5.8. Chart with the number of employees (people making fabrics and clothes for Inditex, but from external companies) and the average salary in each country

- Centralized distribution:

However, as we have already mentioned, the processes of inventory management and physical distribution are completely centralized. All the finished products go through a unique distribution center, usually located in Spain, and the shipments towards any part of the world are managed and controlled from there. This rare technique, as we will see in the section 5.3, has its advantages and disadvantages.

- Strategic partnerships:

Finally, we have to talk about the companies that work with and for Inditex. Obviously, as it outsources so many parts of its supply chain (sourcing of fabrics, manufacturing of clothes, logistics, etcetera), it is important to have reliable and durable partners in order to not fail in any step of the chain. For this, Inditex always tries to get strategic partnerships with a lot of enterprises.

In this manner, for example, it manages to get cheaper fabrics and clothes (in exchange for purchasing constantly a large amounts of items to its suppliers), cheaper and always available carriers and better conditions in transports and customs. All this is possible because Inditex is a very large and constantly in growth company that can always ensure large amounts of work to their subcontractors.

5.1.3. Other important aspects of the strategy

We have already analyzed the configuration and the most important features of Inditex's supply chain but it would be impossible to understand the way this company manages it without studying the most important aspects of its strategy. Next, we will look to the three "strategic commandments" of this company:

- "The Just-In-Time policy":

One of the features that have made Inditex so outstanding is its well-known J-I-T policy. This consists of sending the products to the stores just when they are needed and, therefore, to purchase, manufacture and distribute in record time to meet the expectations of customers without the need of producing too much stock.

For this, Inditex uses the technique of constantly changing the items that are in the stores, designing new products each week. However, the products that are selling well keep being produced and being sent to the stores. For this to work, as we will see below, a constant and fluid communication between store managers and supply chain managers is needed.

In the next figure we can see how the J-I-T policy works in Inditex. The stores analyze daily the sales and the customer requirements and communicate all this to

design and procurement departments. There, they decide which products have to be produced in the same way as before and which ones have to be changed, removed or created to better correspond to customer's requirements. Finally, the manufacturers produce small batches of each product to send them quickly to stores and not produce more than strictly necessary.
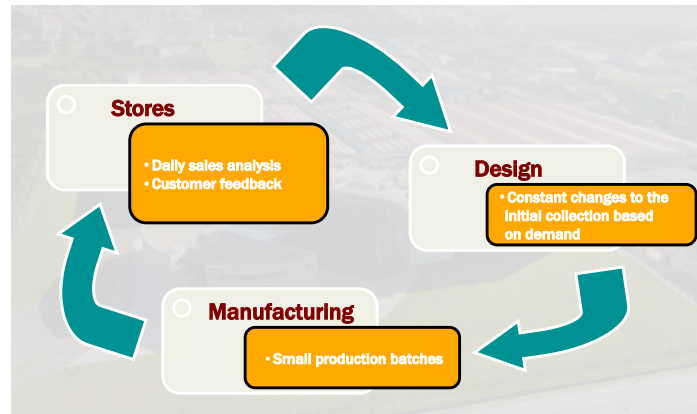
Figure 5.9. A diagram showing in a simple way how the J-I-T policy works

- "The stores rule":

For this to work, as we have just seen, a lot of responsibility relapses to the stores. They are the ones who decide which products have to be replaced and the features of the new products to better cover the demand. Moreover, as each store has a different kind of customers and different functions (image, basics, etc), each store has to decide which products want to sell.

- "Promotions are not the way to sell":

Finally, another important aspect of Inditex's strategy is the way they use promotions. Actually, they never use them to sell more products but only to liquidate stock that is not selling. As we have already told, they constantly change its assortment, keeping the products that are being selling well and replacing the ones that are not

selling by new ones. This products that are selling and, therefore, will not be further produced, are the only ones that are put on sale. At the end of a season, for example, this is clearly seen, as a lot of products have to be quickly removed from the stores to make room for the new season products. However, Inditex never uses promotions on the products that are still in the assortment (being produced and sold in normal conditions), neither for the purpose of capturing consumer's attention.

5.2. Demand Planning & Consumer Information

But let's get deeper into the way Inditex manages the supply chain in such a variable demand industry. For this, we will start studying the flows that are used to obtain consumer information and to provide the right amounts of the right articles.

As we said in section 3, most of these products have a very seasonal demand, what means that they are only demanded in a certain period of the year. Because of that, Inditex, as all the other fashion companies, divide every year into two major seasons: fall-winter and spring-summer. Next, we will show all the steps that are taken to plan the demand in one of these seasons:

1) Initial line plan for the new season

Some months before that the new season starts, designers design a large range of clothes that they think that will please the consumer. For this purpose, they are based essentially in four sources of information:

- Fashion shows and fashion magazines:

As we all know, a lot of fashion shows are celebrated each year all over the world. There, famous designers show innovative clothes emerged from their imagination.

These clothes, which then can be seen in all the important fashion magazines, are usually too complex and sophisticated for the majority of consumers but draw the patterns of fashion for the next seasons and serve as inspiration for Inditex, and other large companies, designers, who use many of these ideas to design simpler clothes.

- Other important fashion companies:

Inditex designers also look at what other companies such as Dolce & Gabbana, Dior, Carolina Herrera or Adolfo Dominguez do. All these companies, which can be considered as almost direct competitors for some brands of Inditex, usually sell more expensive and better quality clothes. Therefore, Inditex produces very similar models but with lower quality fabrics and like that it can sell them at a cheaper price.

- Historical fashion retrieval:

According to experts, fashion is quite cyclical. So, clothing styles that were fashionable in the 70s and 80s, for example, are now reused. For this reason, Inditex designers always try to recover past models for inspiration for the design of new collections.

- Designers' preferences and inspiration:

Finally, obviously, designers are guided by their own preferences and try to guess what people will like the most based on their instinct.

Thanks to these sources, designers develop a collection for the new season. This assortment is neither definitive nor permanent, but it is the first one that will be sent to the stores. This process, that is made every six months, is the first part of a long and continuous assortment planning.

2) <u>Introduction of new products every month</u>

Once the season has started, the creation of new products continues. Actually, more or less once a month the assortment is reviewed and new products are added and sent to the stores. This practice has mainly two objectives:

On the one hand, it is done to change the image of the stores. Changing so much the main products that are on the stores and the showcases, Inditex manages to offer an image of novelty that attracts many consumers. Actually, this causes customers who have been in a store few weeks before reentering when they see that there are many new products. Moreover, as we said above, Inditex also produces some luxury garments to attract consumers and create an image of fashion and style. These products are overall those that appear gradually each month in stores, becoming the four or five "candies" that attract customers interested in fashion to enter and buy many other products.

On the other hand, it also serves to introduce gradually the products for the new season. In fact, the initial collections of which we have talked in the first point of this section are not released at once, but the products are introduced progressively in the months before the beginning of the season. Like this, the long-sighted customers can start buying the clothes before they actually need them.

3) <u>Continuous changes in demand and assortment planning</u>

Apart from these previously planned releases of new products that occur once a month, the assortment is constantly reviewed depending on what happens in stores. The products that are not being sold stop being produced and are discounted to finish the

existing stock. However, the products that are selling well keep being produced, in greater or lesser extent depending on the demand of the moment.

Actually, demand is predicted every day and for a very short term. For this, the next three indicators are used:

- Sales system (direct from stores):

Both designers and supply chain managers carry out a daily monitoring of the sales of all stores and, depending on the sales of each product, the amounts of stock stored and the strategic guidelines draw by points 1 and 2, decide to produce more or less batches of a certain product. So, they use the current demand to predict the near future (few weeks) one, respecting, obviously, the strategy of the company (constantly introducing new products and "letting die" those that have a fewer demand or are useless for the coming season).

- Store managers:

They have the responsibility of getting information from customers and pass it to designers and supply chain managers. For example, many customers try on some products, which means that they like them, but then they don't buy them. Sometimes the problem is the size or the colors or the price. That's what the manager has to find out and tell the designers: "we need more sizes for this garment" or "people ask a lot for this color that we don't have". Like this, demand is adjusted for each particular store and, when requests are the same in many different stores, changes are made to the products concerned.

- Countries sales managers:

Apart from all that, Inditex also has one sales manager per brand per country, who helps to plan the demand of his particular country. Obviously, fashion changes a lot from one country to another because of cultural, social and even economical reasons. Furthermore, Zara (the brand which is present in 86 countries across the five continents) is not positioned in the same way in all the countries (in some countries it is a luxury brand and in others it sells cheap and basic clothes). Thus, the demand has to be managed independently by persons who know the country and the socio-economic and cultural conditions.

Season	A						B					
Month	1	2	3	4	5	6	1	2	3	4	5	6
Selection of the assortment for the next season			B						C			
Introduction of new products	A	A	A	B	B	B	B	B	B	C	C	C
Transformation of existing products	A	A	A	A & B	A & B	B	B	B	B	B & C	B & C	C

Figure 5.10. Outline of the assortment planning schedule in Inditex. The letter in each grid refers to the season which the products concerned belong to. As we can see, collections for the new season are set up three months before the season starts and then the new products are introduced gradually. However, the assortment planning continues every month, transforming and changing the existing products to better meet the consumers needs.

In conclusion, in such a variable demand industry the point is to establish strong links of communication with consumers, letting them to point the way, and adapt the supply chain to rapidly replenish the products that are selling well and immediately drop those that are not. (Bob McKee, 2014)

For this purpose, Inditex has configured a collaborative supply chain, getting a lot of information from its consumers, and developing quickly new styles and getting them to retail to better meet their desires and wishes. If a different color or embellishment could make a style more appealing, Inditex demand planning can sense it and act immediately through a continuous refinement process (that happens in matter of days, rather than weeks or months) and a non-stop assortment planning.

5.3. Inventory Management & Physical Distribution

In order to get so quickly the products to retail and because of the continuous changes in the assortment, the supply chain planning is made through daily meetings and using a lot of different variables (sales information, timing, strategy, etc). Therefore, every day new fabrics are purchased from many different parts of the world, new batches are ordered to be manufactured and new clothes are sent to all around the world.

Next, we will see how the inventory and the logistics are managed in such an irregular planning in which decisions and major changes are made almost every day.

5.3.1. Inventory Management

One of the most important rules of Inditex's inventory management is that timing is more important than costs. They believe that if they manage to get always the right products to retail at the time they are needed, benefits will overcome all the associated costs by far. So, although reducing costs is also important, the main goal is to have always the right amount of products in store.

For this purpose, and considering that Inditex products have a very short lifecycle, they always have few stocks in their distribution centers and warehouses (only the safety ones and those that are stored from season to season). Indeed, the production is always done in small batches that are quickly sent to the stores once they arrive to Inditex distribution centers and last maximum 3 or 4 weeks in store.

For this system, known as Just-In-Time, to be efficient, it is very important to get the right information, as we have seen in section 5.2, and act very quickly, both in sourcing and distribution.

For sourcing and production, it is impossible to get always the products within few weeks, especially when they are manufactured in Asia or when it comes to high quality products. Nevertheless, the basic products are manufactured very quickly and, even more, if they are coming from Portugal or Morocco. That is why 40% of the whole group's production is done in what they call "proximity" countries, as we can see in figure 5.7. Also, to get to retail faster and for in-season adjustments, Inditex also reserves a small part of the production to its own distribution centers for the cases in which the products are required immediately.

For distribution, as we already know, all is managed from one distribution center per brand, located in Spain, in order to make decisions quickly and easily. From there, new products are sent to the stores twice a week: the first batch is sent to be in stores on Monday morning and the second one to be there on Thursday or Friday morning, so that the store is full of new products during the weekend, when most of the consumers go shopping.

NEW PRODUCT TWICE A WEEK

Figure 5.10. New products are sent to the stores of the entire globe twice a week

These batches are, obviously, not the same for every store but they correspond to the orders that the store managers have made few hours or days before. However, thanks to the large amount of information that is handled, the continuous communication between store and supply chain managers and a very accurate planning, the quantities produced of each product usually match with those which are ordered. Therefore, products only remain in distribution centers a few days and almost anything is stored in the warehouses, which only serve as a midpoint between the distribution center and the store.

Actually, in the next pages we will focus this part of the supply chain: distribution. We will see how the outstanding logistics of Inditex work, how the shipments are planned from Spain and what modes of transports are used.

5.3.2. Physical Distribution

Due to this J-I-T policy, Inditex distribution is focused on getting the products to the stores as fast as possible. This is achieved through some actions that are explained below:

- Centralized decisions:

As we already know, all the distribution and transportation planning is managed from one point: the brand's distribution center. All transport, whether inbound (from suppliers and external factories to distribution centers) and internal (from distribution centers to warehouses and stores), is handled from there. Also the management of customs (most of products have to pass through at least one border) and contracts with carriers and transport companies are done there. This offers the possibility of making fast and clear decisions and, therefore, helps to get fast to retail. However, this also has a major drawback: how to transport so fast the products from Spain to other continents such as America or Asia?

- If long journey (Asia and America): Transport by plane

The answer is by plane. Although it is more expensive that other modes of transport, it enables to cover large distances within hours and, so, perfectly fits this Inditex model, which is based on speed.

Around 30% of products, either finished ones or in process, are transported by aircraft. Usually, these flights depart from Spain full of finished products ready for sale and come back with some fabrics or semi-finished products from the concerned country. That is why most of the flights are destined to Asia, particularly China, Southeastern Asia and the Arab countries (Doha and Dubai are the major hubs for the Near East, where there are a lot of Zara stores). For America, the most important hub is located in Mexico.
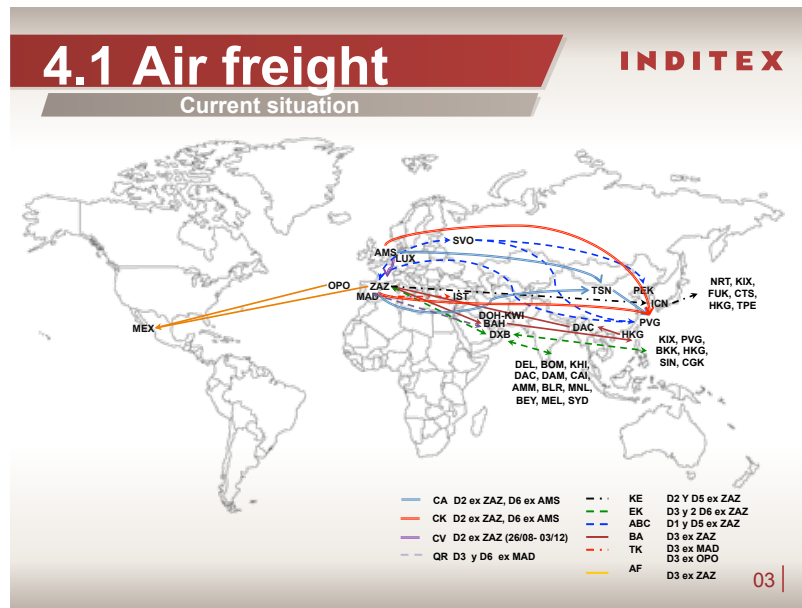
Figure 5.11. Regular flights used by Inditex

As we can see in the figure above, the most used airports for departures are Zaragoza, Madrid and, occasionally, Oporto and Amsterdam. Inditex distribution centers, as we know, are very close to these airports. Furthermore, all this flights are already contracted and, therefore, airlines always leave room for Inditex products. All this means that, as we will see later, products can be transported from the distribution center to any part of the world in only two days.

- If short journey (Europe): Transport by truck

However, when the journeys are shorter, they are done by road, which is much cheaper. This mode of transport is used for the shipments within Europe and, in other continents, for what is called last-mile distribution. This corresponds to 70% of all the transports, which means 17.000 journeys per year (or 340 per week).

To reduce costs, several actions are carried out such as space optimization (trucks are always full) or round trips. As in the case of airplanes, carriers also use the

same trip for delivery and sourcing, going sometimes to other close cities to fill up their trucks during the return to Spain.

In this case, shipments also last no more than two days. As we can see in the figure below, the products that remain in Spain arrive at stores between only 6 and 12h. But those that go to other countries of Europe don't last much more, as practically all the hubs (already mentioned above under the name of warehouses and very close to the stores) are located between 16h and 30h away from the distribution centers. The only case in which the two days are exceeded is in Turkey, where Inditex have a lot of suppliers and subcontractors.
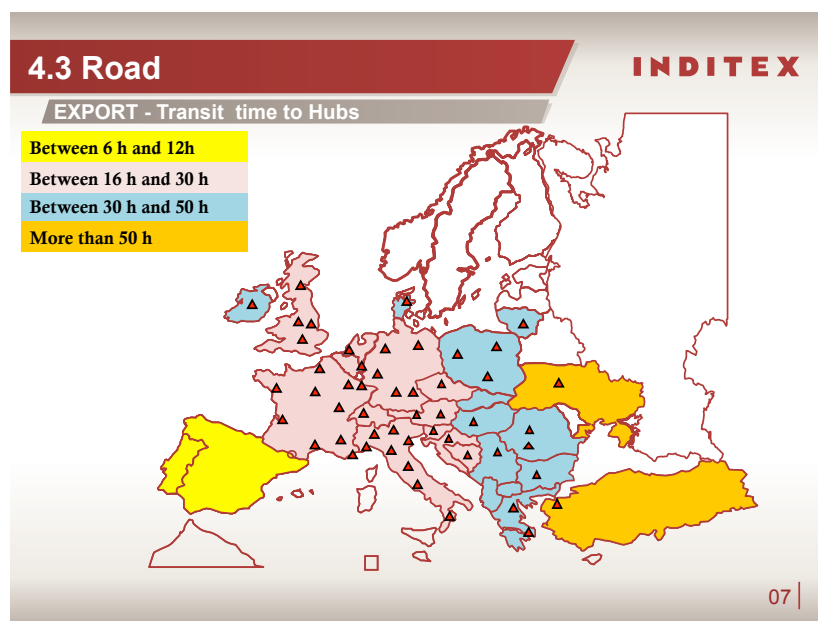

Figure 5.11. Transport by truck times (in Europe)

- Maritime transport: Only in specific cases of sourcing

As Inditex is so obsessed with timing and getting the clothes very quickly to stores, transport by sea is practically not used because it is too slow. Only some basic products for kids, which have a much longer lifecycle and, therefore, can be produced

and stored longer, come to distribution centers by sea. However, these procurement transports are also managed by Inditex in order to control the timing and the arrival ports are also very close to distribution centers (Barcelona and Valencia).

- All carried out by third-party logistics companies

All the transport are done by external companies so Inditex tries to get always long-term contracts with them in order to reduce costs and ensure timing. It is clearly seen in the case of air freight, where Inditex works with some well-known airlines, getting some important discounts thanks to assuring them large volumes continuously. Some of the airlines that are currently working with Inditex are Emirates Airlines, Qatar Airways, Turkish Airlines, Air China, Air France and British Airways. As we can see, many of them regularly fly to the most frequent destinations (Near East, China, Turkey, etc).

In the case of trucks, a lot of transportation companies only work for Inditex, since it assures non-stop revenues. All transport planning and customs management is done by Inditex, while carriers only have to follow orders and deliver the products at the agreed time.

- The shipping process

In conclusion, the shipping process, either is done by air or by road, last as maximum two days, although the distribution is centralized and all the distribution centers are located in Spain. Indeed, products arrive at the stores only 36 or 48 hours after the store makes a new order. Moreover, the delivery is usually done during the night, so that early in the morning the products are ready in store. In the following picture, all the steps of this process are schematically shown.

Figure 5.12. The shipping process

5.4. Information Systems

To finish this analysis of Inditex, we will study how the information is managed and what systems are used for the most important parts of the Supply Chain Planning process. This aspect is very important due to the large and efficient exchange of information that has to be carried out to make the supply chain as fast and agile as we have seen above.

5.4.1. Role of Information Systems

As for any multinational company, information systems are, nowadays, indispensable tools for Inditex. These enable communication from any part of the world, streamline operations and processes and, therefore, get a more agile and fluid supply chain. However, considering the Inditex model, which has been explained in this section 5, information systems have, especially, three major roles, which may be different from the usual ones:

1) Customer communication and knowledge:

As we have already told, one of the main purposes of Inditex is to know the preferences and desires of customers. Actually, they are the ones who rule the supply chain, through the store managers, who pass the information they get from their customers to the headquarters, so that commercials and designers can better plan the assortment and the replenishment. Obviously, information systems play a crucial role in this constant data exchange between the stores and the headquarters.

2) Response to a product:

Related to the point before, information systems also serve to see the immediate response that a product is having among a certain group of customers. Thanks to some IT applications, commercials can see from the headquarters the sales of a certain product in a certain store or country real-time. This information enables to make appropriate decisions with enough time in advance to prepare the supply.

3) Time to retail:

Finally, concerning the distribution process, information systems are also very important to get to the stores so fast. As we have seen, if a product is depleted in India, it can be replenished just 48 hours later. This is possible because of the fast and fluid communication between the stores and the distribution centers and the synchronization of all processes related to the shipment and the transport with the support of new technologies.

Obviously, these are not the only roles that Information Systems could play but, according to Inditex, they are the most important points in terms of information in such a changing industry. This business model that seeks to understand the customer and

provide what they need as quickly as possible needs, above all, a continuous and accurate flow of information. Next, we will see how Inditex manages to establish such an efficient data exchange.

5.4.2. A hybrid model

Inditex's information and communication protocols are significantly different from its competitors. Indeed, Inditex spends less than 0.5% of total revenues on IT while its competitors spend on average 2% of total revenues on IT expenditures. This is because Inditex utilizes human intelligence (from store managers and market research) and IT applications in order to have a hybrid model for information flow along all the parts of its supply chain. (Quique Belenguer, 2011)

At Inditex, technology platforms are used to help people to make decisions but not as substitutes for them. For example, in the case of the data exchange between stores and headquarters, the decision is made by the store managers, although they use PDA devices to know inventory levels, forecasts, consumer or employees reviews, etc. Actually, this process is carried out as follows:

24 hours before the store manager has to send the order to the distribution center, the headquarters send what is called the "offer". This contains information on garments availability, regional sales patterns and forecasts for the concerned store. So, with the help of this information, their employees and, especially, what they see and perceive from their consumers, they make an order. As we can see, the decisions are made by people and information technologies are only used as support to these decisions.
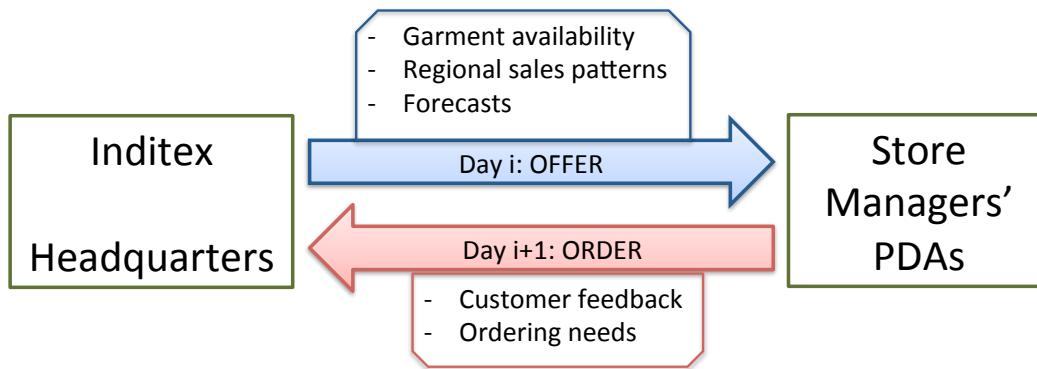
Figure 5.13. Data exchange process between headquarters and stores

Another approach of human intelligence assisted by IT solutions results in well-managed inventories, linkages between demand and supply, and reduced costs from obsolete merchandise. However, there is still room for improvement in their IT processes to realize more effective management of inventory levels and to establish a more efficient communication between designers, producers and commercials in order to match the actual demand more closely. (*Zara's Business Model, Information and Communication Technologies and Competitive Analysis*)

5.4.3. SC Planning Solutions

Finally, we are going to get a little bit deeper into the IT solutions that are used. Before, it is important to note that all the systems are implemented in-house, even though some specialist companies also help sporadically. As a result, they don't use any standard ERP but they have designed their own IT infrastructure.

They use a private information management system, supported by an own network of severs that guarantees a real-time control and access to stores all around the world. As Gabriel Moneo, Department of Information Systems' director, said, "This network allows us to get enough information about what happens in each store, to have

access to all the trends and to link countries, logistic centers, stores and the online channel". (*El cerebro de Inditex,* 2011)

The network is managed and controlled from the headquarters in Arteixo (Spain) through two DPC (Data Processing Centers) connected to all local centers across the globe, thanks to 1,400 servers. One of these DPC, which uses an IBM Power platform, is used for commercial transactions and human resources activities. The other one, which is not operational but just informational, serves as a support to make decisions.

Moreover, Inditex uses a private *cloud*, a RAID of 200 servers connected via Internet, which can raise the computing speed in order to make decisions at "very critical moments". This is the reason why many processes do not last more than a few minutes.

The linkage between these "brains" located in the headquarters with the stores is done through Point-of-Sale Terminals. On the one hand, there are the PDAs that store managers use to make orders and send customer feedback. On the other hand, each store has a *management terminal*, which is used to manage human resources and control sales.

Connected to these two DPC, there are also many applications for the different supply chain activities, all implemented in-house. Therefore, some specific IT solutions are also used in the fields of purchasing, forecast and demand planning, inventory management and logistics.

6. COMPARISON

Now that we have analyzed these two outstanding companies of stable demand and fashion products, we can easily identify some differences between each industry and also some coincidences in the way they plan their supply chains. In this section, we will compare step by step the features of Unilever and Inditex in order to see how the supply chain planning changes depending on the stability of demand.

6.1. Supply Chain Configuration

6.1.1. Supply Chain Network

In this part we can already find the first differences, as the supply chain network is not configured equally in both companies. Unilever, for example, doesn't have its own retail stores as Inditex but has much more distribution centers spread all over the world, fulfilling the functions of Inditex distribution centers and hubs.

Regarding the suppliers, both companies carry out the procurement process globally, trying to reduce costs searching for cheap raw materials. The only difference is that while Unilever only buys raw materials to transform in its factories, Inditex also buys a lot of finished products.

This also applies to the manufacturing process. Unilever prefers to carry out all this process in its own factories and that is why it has so many factories around the globe. Conversely, this process is mainly outsourced in Inditex, delegating the production of its clothes to external companies located in lower cost countries, often close to its distribution centers to gain time.

In the part of distribution centers is maybe where we find a greater difference. On the one hand, Unilever has a lot of distribution centers spread over all the continents and strategically placed to be close to as many customers as possible. On the other hand, Inditex only has a distribution center per brand and all located in Spain. Therefore, while Unilever uses them as warehouses near the final destination to store their products and get faster and cheaper to the customers when they make their orders, Inditex uses them as a unique operations center to gain simplicity and speed in their decisions, regardless of the cost of having to make longer shipments.

Finally, regarding the customers, the ways used are also different. Unilever's customers are not the final consumers but the supermarkets, grocery stores and more, which sell its products and from other companies to the consumers. This prevents Unilever of having control, influence and knowledge about the consumers of its products. Instead, Inditex has its own retail stores and, so, they can have direct contact with the consumers, which, for them, is a very important part for their business strategy.

6.1.2. Main features of the supply chain network

Going into detail on the features of the supply chain network we also find some important points to highlight.

First, both have decided to have different supply chains depending on the brand or product to provide better quality and service. Concerning Unilever, suppliers and manufacturing sites are what mainly changes depending on the product, while, in Inditex, this differentiation occurs especially in distribution centers and stores. This, obviously, has to do with the nature of the products of each company since Unilever's portfolio is much more diverse (food, beverages, personal care, home care, etcetera)

than Inditex's one but all these products are sent to the same customers (supermarkets), while Inditex has to have different stores depending on the brand because each brand is for a different type of customer. Concerning Inditex, it is important to highlight that all the brands follow the Zara's model of supply chain.

Another strategy that is used in both companies is to get a global scale in sourcing. Both Unilever and Inditex try to reduce their costs in procurement and production searching for low cost locations to carry out these activities. Then, some Southeast Asian and African countries are often the places chosen to look for suppliers, production partners or, to set up new manufacturing sites (for Unilever).

Also in the case of partnerships we find a lot in common. Both try to get strategic partnerships with suppliers and third-party logistics companies and help them to grow so that they can provide better service to the company. Moreover, as both are large multinational companies, they can get cheaper prices from them ensuring large volumes of purchases always.

Perhaps the only important difference that we can find in this part is in distribution. As we have already said, Unilever has a highly decentralized system, consisting of local distribution centers to reach the customer more efficiently (faster and cheaper). On the other hand, Inditex prefers to have the distribution centralized in a single point to make decisions and operations simpler.

6.1.3. Other important aspects of the strategy

Concerning other aspects of the strategy that are important to understand the supply chain, we can identify that both prioritize to optimize customer service rather

than other variables. Both believe that providing a good service and ensuring that the products that consumers need are always available at stores or on shelf is what gives good results and incomes to the company.

However, the strategies used to achieve this goal are quite different. For example, at Inditex the ones who "rule" the supply chain are the stores because there is where they see what the customers want and, therefore, what have to be produced, changed or removed from the assortment. Instead, Unilever's supply chain is "ruled" by sales forecasts and, ultimately, customer orders.

Also the strategies to sell more products are quite different. For example, Unilever uses often promotions to attract more customers while Inditex only uses promotions to liquidate stock. Probably, this is also because most of Unilever products are manufactured by volume and, so, it is not a big change to offer more volume per product. Instead, for Inditex, the only way to promote a product is considerably lowering its price.

Finally, it is important to highlight the huge efforts that Unilever is doing the last years to source more sustainably and get more sustainable products. Being a lot of them food products, it is normal that they have set up this sustainable plan but, probably, Inditex should also carry out some actions in the same direction since this topic is, nowadays, increasingly important for our society.

6.2. Demand Planning & Consumer Information

6.2.1. Consumer Information

Here we can find one of the most significant differences between these two companies and, also, these two different industries. As we have said, Unilever doesn't have its own retail stores and, therefore, it is much more difficult for them to obtain valuable information directly from consumers. Moreover, supermarkets don't share a lot of information with them so the only way to understand consumer behavior is to look at specialist companies' reports such as Nielsen ones. This gives them an idea of what consumers buy but it doesn't allow them to communicate with consumers and identify their needs in order to develop new products.

Inditex case is completely the opposite. They are not only able to communicate with consumers in their own stores and identify their preferences, but they actually give a lot of importance to this consumer information. The Inditex model is based on consumers as the goal is to design the clothes that they want and, therefore, they are the ones who have to say which products have to be in the stores at any time. For this purpose, Inditex personnel try to communicate a lot with customers and get a lot of information about what products they prefer, what they think that Inditex should produce and it is not in the store, etc. Indeed, consumers lead Inditex's supply chain since store managers manage their store's replenishment through orders and are considerably involved in the assortment planning sharing the information that they have got from their customers.

This need to get so much information from consumers is related to the features of fashion products compared with those of stable demand products. As we already

predicted in section 3, fashion products depend more on social trends and consumer preferences and this is why consumer information is so important. Moreover, fashion products have a much shorter lifecycle so the assortment planning has to be done much more often and the only way to choose the right products for the next batches is to get a lot of information from the people who are going to buy them. Actually, Inditex changes its assortment every week for this reason, while Unilever almost never changes it, only if any product has been just released recently and it is not responding as expected.

6.2.2. Demand Planning

Also in demand planning we can identify great differences because of the nature of the products. On the one hand, Unilever, as its products have a quite stable demand, can forecast easily looking at past orders. Thus, they use shipment histories from the last three years to have a first reference and start producing several months in advance. As time goes through, they also use present orders to better predict the future ones. Moreover, because of the steadiness of the demand and the almost negligible changes in both assortment and consumer behavior, they can use always the same algorithms and other technological tools to do the demand planning.

On the other hand, Inditex's sales are very difficult to forecast. As they have such a short lifecycle, they are very seasonal and they depend so much on social trends, which change too easily, they don't carry out a conventional demand planning but they act as quickly as possible and trying to anticipate the future. Therefore, they design an initial plan for each season based on the latest fashion shows, magazines, companies and well-known designers and they keep changing this plan during the season according to the

information they get from consumers and sales. For this reason, they don't forecast more than few weeks in advance and they only produce small batches of each product.

6.3. Inventory Management & Physical Distribution

6.3.1. Inventory Management

Despite the different ways to plan the demand depending on the features of the products, both companies have the same goal in inventory management activities: to have no stock. Both Unilever and Inditex make great efforts to have as few products stored as possible, as they have large associated costs. Only in some kind of special products of Unilever, which have a very low rotation, it is cheaper to produce them all at once and store them during several months. In all other cases, both stable demand and fashion products, it is more efficient to continuously produce them and just the amounts that are necessary, to avoid taking up a lot of space in warehouses and distribution centers and becoming obsolete.

For this purpose, each company uses different techniques. As we have just seen, in the stable demand product industry, it is quite easy to predict the demand so this great performance is based on a very good forecast. Moreover, Unilever has set up sophisticated models in inventory management to control stock levels in all its factories and distribution centers that, as we already know, are spread all over the world and, therefore, it would be impossible to control without them.

Conversely, in the fashion industry it is very difficult to predict the demand so they have to use other techniques to achieve this goal. At Inditex, they use mainly two: on the one hand, they produce small batches of each product so that they can send them immediately to stores and nothing rests in the distribution centers. On the other hand,

they have set up a very fast supply chain through centralized distribution centers and a lot of manufacturing sites in countries close to them. Actually, they even produce some clothes in their distribution centers when they need to act very fast.

6.3.2. Physical Distribution

Therefore, as we have said many times, the distribution process is much more centralized in Inditex that in Unilever. This clearly affects the logistic section: as Unilever distribution centers are closer to its customers, transportation costs are lower for them as they run all the shipments by truck, while Inditex have to use air freight for many locations.

Indeed, Inditex uses the following modes of transport: plane (when the journey is long, as Spain-Asia or Spain-America) and truck (when the journey is short, e.g. Europe). Instead, Unilever products are transported by sea (in inbound and primary transports, which tend to be longer) or road (secondary transports which are short journeys from the distribution center to the customer location).

There are many reasons why they use different modes of transport, both because of the company and the industry. As we have said, Unilever products demand is easier to predict in advance so they use always the cheapest mode of transportation, regardless of the time used in inbound and primary transports. Moreover, as they have set up this large network of distribution centers, they are much closer to customers when they make the final order.

Conversely, Inditex products have a very short lifecycle and their demand is very difficult to predict. Therefore, they always try to act as quickly as possible and, as we

already know, sourcing, production, distribution and sales for a specific product can only last few weeks. More specifically, according to Inditex's strategy, the distribution process should not last more than two days. For this purpose, and considering that their distribution centers are all in Spain, they give much more importance to the time used rather than the costs. That's why they often use the most expensive mode of transport but also the fastest one: airplanes.

Finally, it is important to highlight that both companies use third-party logistics companies to carry out these transportation and distribution tasks. They both have chosen to outsource this part of the supply chain because it is very specific and expensive. So, as they are large companies, they usually have several specialized companies working for them and ensuring that all the shipments are carried out quickly, properly and safely.

6.4. Information Systems

In this last part we also find some significant differences. Actually, Unilever is spending a lot of money in IT (2% of its revenues and going up) while Inditex is spending much less (0.5% of its revenues, less than a half of their competitors). This important difference arises from several explanations.

On the one hand, Unilever needs more technological infrastructures, as all its processes are global. It has factories, distribution centers and offices all around the globe and that is why they are making such a great effort in integrating all these processes carried out at different locations in a global system (One Unilever), where all information is shared.

Conversely, Inditex has many more centralized processes and, so, it doesn't need so much IT to communicate between offices and factories, but to other purposes. Indeed, Inditex uses IT to get consumer information and get faster to retail. Moreover, they believe that the decisions have to be made by people, who are the ones that are in contact with consumers and can use their instinct or preferences in some issues. Therefore, they have opted for a hybrid model, in which IT is used to support people's decisions.

On the other hand, Unilever can use many more standard applications from IT companies due to the features of its products and its supply chain. So, they try to get the best standard application for each activity among the supply chain, implemented by any of their IT partners. Thus, they use solutions from important companies such as SAP, Microsoft or Terra.

Instead, Inditex has implemented all its technological structure in-house. As the fashion industry is much more inconstant and Inditex business model is quite particular, they think that implementing their own solutions in-house is a strategic tool to better support their business. So, they use very specific tailored applications for their also specific business model. Moreover, as we have said, these applications are mainly oriented to get as much consumer information as possible and make decisions quickly.

7. CONCLUSIONS

Having analyzed and compared Unilever and Inditex supply chains, now we can draw several conclusions from this study in how the stability of demand affects the supply chain planning. We have seen that these two companies use a lot of different techniques, mainly because of the differences between the products they sell. Obviously, we can also find some similarities, as there are features that do not depend on the product.

Anyway, they are two leading companies, both in their industries and in supply chain planning (they have the two best supply chains in Europe according to Gartner's Ranking of Top Supply Chain Organizations for 2013). Therefore, they clearly show us the best practices in each of their sectors, and this is what we will now explain in detail.

In the third section, we already guessed some features of these different types of products that could affect the Supply Chain Planning. After studying these two companies, we have to admit that all hypotheses have been confirmed. So, next we will show a table to remember these differences between stable demand and fashion products and, then, we will see how they really affect.

STABLE DEMAND PRODUCTS	FASHION PRODUCTS
Flat demand	Seasonality and strong tendency in demand
Easy to forecast	Very difficult to forecast
Long lifecycle	Short lifecycle
Depend on basic human needs	Depend on social trends and consumer preferences

Require more *inventory*	Require more *strategy*

Figure 7.1. Main differences between stable demand and fashion products

1	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Replenishment System	Assortment Planning

Throughout the study we have been realizing that what we already imagined in section 3, and we can find in the last row of the chart above, is completely right. As the fashion products have such a short lifecycle, the assortment has to be changed continuously. Actually, Inditex changes its assortment almost every day, adding new clothes, removing the old-fashioned ones and changing the existing products according to consumers' preferences. Therefore, the key process in this industry is the Assortment Planning, leaving the Replenishment System in the background, since the short lifecycle of the products forces the companies to constantly change their assortment and, so, what really gives you an advantage over your competitors is to choose the right products at the right moment.

Conversely, stable demand products have quite a long lifecycle and, so, there is no need to change the portfolio constantly. Actually, Unilever only uses the Assortment Planning as a checkpoint to identify the products that have been released recently and are not having the expected performance. Therefore, almost all the products remain in the assortment and very few changes are made from year to year. But as the same products are sold over the years, the process that is really important in this industry is the Replenishment System. To develop new products is not the secret, but to ensure that there are always the right amounts of the existing products in retail.

2	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Demand planning	Consumer information

From the point above we can draw a new important conclusion: while in the stable demand industry the demand planning rules the whole supply chain, in the fashion industry what rules the supply chain is the consumer information. Indeed, an efficient replenishment system mainly depends on a good demand planning, whereas the only way to choose the right products for the coming assortments is to know what consumers want.

Moreover, as we can see in figure 7.1, stable demand products are very easy to forecast using past and present references. In fact, Unilever uses shipment histories from the last three years and present incoming orders to predict the future demand. On the other hand, fashion products are very difficult to forecast because they depend a lot on social trends and consumer preferences. That is why Inditex has had to look for other solutions to predict the demand, and it has found them among its own consumers.

Actually, Inditex model is based on consumers. They have understood that, as fashion products depend so much on consumer preferences, the best way to choose the right products for their consumers is to ask directly to them. Therefore, the ones that really rule the supply chain are the store managers, as they are in contact with consumers and they can get a lot of valuable information from them.

3	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	External retailers	Own retail stores

Thus, it is not surprising that Inditex has its own retail stores while Unilever doesn't. As we have just said, a fashion company needs a lot of consumer information to choose the right products and the best way to get it is from the stores. This is one of the few problems that Unilever has, as the supermarkets where its products are sold don't share any information. However, as we have seen, this is not a big problem for Unilever because stable demand products do not need to be constantly changed and their demand is quite easy to predict basing only on past orders.

Moreover, as stable demand products depend on basic human needs, for consumers it is better to have them all in the same place (supermarkets, pharmacies, groceries... depending on their function), regardless of the brand or the company that produces them. It is for this reason that Unilever, as all its competitors, does not have its own retail stores but it sells its products to specialized retailers. Instead, fashion products are related to social needs such as belonging to a particular group or social class. Therefore, the brand is much more important in the fashion industry so it is almost mandatory to own retail stores.

4	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Optimizing customer service without storing any stock	

But let's get back to the supply chain planning. An important similarity that we have found while analyzing these two companies is that both have the same goal in terms of supply chain: to optimize customer service without storing any stock. Actually, if they are considered the two best supply chains organizations in Europe it is because

they mainly achieve it. Only in some particular cases, as Unilever low rotation products or some Inditex clothes that still work but have to wait for the next season, large amounts of stock are stored during months. In all other cases, both companies achieve to have no product stored on their warehouses more than few days. How do they do it? Each one has its own way.

	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
5	Sophisticated inventory management	Fast and flexible supply chain

As we already know, stable demand products have a long lifecycle and a quite flat demand curve and, so, it is easy to forecast and the production can be more or less continuous. Therefore, the point is to manage inventory as best as possible. For this purpose, Unilever has set up, with the help of its IT partners and other specialized companies, sophisticated inventory management solutions to control stock levels in all its factories and distribution centers. Indeed, in the stable demand product industry, good demand planning and inventory control ensure that products are available when they are needed and, as we have said, this is the most important goal.

Conversely, fashion products have a very short lifecycle and their demand is very difficult to predict. Therefore, it is not necessary to carry out a sophisticated inventory management, but to have a very fast and flexible supply chain. As products have to be changed as often and their demand can't be planned in advance (actually, as we have said, the consumers are the ones who *decide* what products have to be in store and they want them immediately), the point is to produce small amounts and get them quickly to retail. So, for example, what Inditex does is to manufacture small batches of each

product (only for three or four weeks) in external factories near its distribution centers in order to send them quickly to its stores.

6	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Decentralized distribution	Centralized distribution

Also, in order to have a supply chain as fast and flexible as possible and because it is very difficult to forecast fashion products' sales, Inditex has chosen to have a completely centralized distribution. As it is impossible to plan the demand in advance, a lot of last minute decisions have to be done in the fashion industry, so it is better to centralize them to be faster, simpler and more accurate. Instead, in the stable demand industry it is quite easy to forecast sales in advance. Therefore, it is more efficient to have a decentralized distribution, as both transport costs and time from distribution centers to customers are lower.

7	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Optimizing transport costs	Optimizing transport time

Related to this, we can find another important difference in the ways used to plan the supply chain in these two different industries. As we have said, in the fashion industry the most important thing is to get the products that consumers want quickly to retail, so all operations are very urgent, including logistics. Then, for a large company as Inditex, which has suppliers, manufacturers and stores spread all over the world but all its distribution centers concentrated in one country, transport costs are very high.

Indeed, all journeys outside Europe are done by plane, which is, by far, the fastest mode of transport but also the most expensive one.

Conversely, as we already know, stable demand products can be planned in advance so logistic operations are not urgent at all. This enables companies in this industry, such as Unilever, to always use the cheapest mode of transport. Therefore, when the journey is long (between different continents) they move the products by sea and where it is short they use trucks.

8	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Promotions to attract consumers	Promotions to sell off

Another consequence of having such a short lifecycle is that in the fashion industry it is very common that the demand of a certain product goes suddenly down and there is still some stock of that product. Especially, it happens at the end of a season, as a lot of clothes are seasonal and, so, they don't work anymore. Thus, the strategy used is to reduce prices gradually in order to sell them off.

Conversely, in the stable demand industry, there is hardly ever the need to sell any product off, as they last very long. Instead, they use promotions to attract more consumers because it is quite easy to carry out and it gives very good results. Indeed, Unilever, as most of its products are produced by volume, often offers more volume for the same price and, as these products are more related to basic needs than consumer preferences, manages to gain new consumers who buy them only because there are bigger or cheaper than other companies' products.

9	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Procurement in Best-Cost Countries	

But there are not only differences in the way these two companies plan their supply chains. Both make global procurement, trying to find the best-cost countries. In fact, we talk about best-cost countries instead of low cost countries because what they search is the best relationship between quality and price for their raw materials. For example, Inditex usually buys its fabrics in low cost countries such as China or Bangladesh, but when it needs very good fabrics to produce high-quality clothes, it buys them in France, Spain or Italy. Similarly, Unilever looks for the countries with the most appropriate weather or the biggest natural reserves of each raw material, so sometimes they are not the lowest cost ones.

10	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Strategic partnerships & outsourcing	

Also, they both have outsourced some parts of their supply chains, as procurement of raw materials or logistics, and set up strategic partnerships with companies specialized in these areas. This is very advantageous for multinationals, not only because these companies have more knowledge and means to carry out this specific function, but also because you can get cheaper prices by ensuring a continued and high workload. In addition, like this, synergies are created, which benefit all parties.

11	STABLE DEMAND PRODUCTS	FASHION PRODUCTS
	Standard IT solutions	In-house IT solutions

Finally, regarding information systems, we have also found some important differences. First, as stable demand industry depends so much on demand planning and inventory management, it is important to invest a lot in IT, as this is the best way to forecast sales accurately and control inventory levels. Moreover, as they are quite common processes, a lot of IT companies provide very good standard solutions that suit them. For these reasons, Unilever invests heavily in IT and uses standard solutions from different companies for each of its supply chain activities.

Conversely, in the fashion industry, processes as demand planning and inventory management are not so important, but the key process is to get valuable consumer information, and the best way to get it is through direct contact between personnel and consumers. Therefore, there is less need to invest heavily in IT. Furthermore, as processes are quite singular, more specific applications are needed, so a good option is to create a tailored technologic structure in-house, as Inditex does.

In conclusion, analyzing Unilever and Inditex we have seen that, although there are some good practices that do not depend on the product such as trying to do a global procurement to find the best-cost raw materials and setting up strategic partnerships with suppliers and third-party logistics companies, the Supply Chain Planning is very different in stable demand and fashion products, since they have opposite features and, so, require very different practices.

8. REFERENCES

Angeli, E., Wagner, J., Lawrick, E., Moore, K., Anderson, M., Soderlund, L., & brizee, A. (2010, May 5). *General Format.* Retrieved from

http://owl.english.purdue.edu/owl/resource/560/01/

Amado, Evaristo. (2011, February 1). *El cerebro de Inditex.* Retrieved from

http://www.abc.es/20110131/local-galicia/abci-cerebro-inditex-201101310707.html

American Production & Inventory Control Society & Blackstone, John K. (2010). APICS *Dictionary 13th Edition.* Retrieved from http://www.apics.org/

Belenguer, Quique. (2011, January 17). *Zara y los Sistemas de Información*. Retrieved from http://www.inmerco.com/home/39-management/269-zara-y-los-sistemas-de-informacion.pdf

Boix, Isidor. (2012, July). *Inditex: responsabilidad social empresarial con intervención social.* Retrieved from

http://www.fiteqa.ccoo.es/comunes/recursos/29/1420654-INDITEX_-_RSE_-_Intervencion_Sindical_-_2012.pdf

Cours de l'École Centrale Paris. (2011). *Gestion de Stock et Prévision de la Demande*

Elshof, Paul & FNV Mondiaal by Food World Research & Consultancy. (2005, July). *FNV Unilever company profile.* Retrieved from

http://es.scribd.com/doc/51263739/Company-Profile-Unilever

Fashion United. (2012, May 22). *Zara: tercer puesto en marcas de moda de ranking mundial.* Retrieved from http://www.fashionunited.es/News/Leads/Zara%3A_tercer_puesto_en_marcas_de_moda_de_ranking_mundial_201205229099/

Faiza Javaid. (2012, October 12). *MIS in Unilever: It, Privacy, Security, Supply and Customer relationship.* Retrieved from http://www.slideshare.net/faizajavaid16/mis-in-unilever

García Sabater, J.P. (2004). *Gestión de Stocks de demanda independiente*

Green, Chloe. (2013, June 25). *Unilever's business intelligence strategy.* Retrieved from http://www.information-age.com/technology/information-management/123457146/unilever---s-business-intelligence-strategy

Heartle, A. & Albert, C. (2012). *Fashion vs. Basic Assortment Planning*: *Developing the Appropriate Product Mix and Inventory Level to Maximize Sales and Profit.* Retrieved from http://www.parkeravery.com/povs/PAG_POV_Fashion_vs_Basic_Assortment_Planning

Hill, Kimberly. (2010, August 6). *Manugistics Supply Chain Management.* Retrieved from http://www.crmbuyer.com/story/19854.html

IBT, Industrial Solutions. (2013, March 20). *Unilever Saves Money with Better Inventory Control.* Retrieved from http://primemover.ibtinc.com/unilever-saves-money-with-better-inventory-control/

King, Leo. (2007, November 20). *Unilever uses information management to keep shelves stacked.* Retrieved from

http://www.computerworlduk.com/news/applications/6215/unilever-uses-

information-management-to-keep-shelves-stacked/

Lambert & Cooper (2000). *Issues in Supply Chain Management.*

Lawrence D. Frefendall & Ed Hill (2000, December 28). *Basics of Supply Chain Management.*

Marieke. (2013, February 20). *Unilever optimizes forecasting and significantly lowers inventory.* Retrieved from http://www.supplychainmovement.com/unilever-

optimizes-forecasting-and-significantly-lowers-inventory/

Mckee, Bob. (2014, January 15). *Transforming the fashion supply chain through collaboration*. Retrieved from http://www.sdcexec.com/article/11294304/a-

synchronized-value-chain-can-transform-the-traditional-sequential-product-design-

and-development-cycle-into-a-refinement-process

Pérez, Y. & Santos, K. (2009). *Supply Chain Management o Gestión de la cadena de suministro.* Retrieved from http://www.slideshare.net/kiberley/supply-chain-

management-scm-o-gestin-de-la-cadena-de-suministro-3602900

Prospects. (2012, July 8). *Role of IT at Unilever.* Retrieved from

http://ww2.prospects.ac.uk/cms/ShowPage/Home_page/Engineering__Science_and_Te

chnology/Features/Role_of_IT_at_Unilever/p!elkmef

Sigismondi, Pier Luigi. (2011). *Unilever: Becoming the best.* Retrieved from

http://www.unilever.com/images/ir_ist11-Continuous-improvement-in-the-supply-

chain-PLS_tcm13-276977.pdf

Supply Chain Standard (2013, February 20). *Unilever plan to lower European

inventory.* Retrieved from

http://www.supplychainstandard.com/liChannelID/23/Articles/4364/Unilever+plan+t

o+lower+European+inventory.html

Unilever's Internal Transport Organization. (2012, April 27). *UltraLogistik: A

success story about Unilever's European Transport Operations Centre in Katowice, Poland.*

Retrieved from http://www.youtube.com/watch?v=_EIgAVHnqDo

Van der Meulen, R. (2013, September 26). *Gartner Announces Ranking of Top

Supply Chain organizations for 2013.* Retrieved from

http://www.gartner.com/newsroom/id/2596615

Vermorel, J. (2012, January). *Stock Replenishment Definition*. Retrieved from

http://www.lokad.com/stock-replenishment-definition

Wikipedia's collaborators. (2013, October 3). *Unilever: Wikipedia, the free

encyclopedia*. Retrieved from http://es.wikipedia.org/wiki/Unilever

Wikipedia's collaborators. (2013, July 15). *Nielsen Company: Wikipedia, the free

encyclopedia*. Retrieved from http://es.wikipedia.org/wiki/Nielsen_Company

Wikipedia's collaborators. (2013, December 17). *Inditex: Wikipedia, the free encyclopedia*. Retrieved from http://en.wikipedia.org/wiki/Inditex

William Y. C. Wang, Michael S. H. Heng & Patrick Y. K. Chau (2007). *Supply Chain Management: Issues in the New Era of Collaboration and Competition.*

Women's Wear Daily. (2012). *Fashion and Design News and Trends.* Retrieved from www.wwd.com*Zara's Business Model, Information and Communication Technologies, and Competitive Analysis.* Retrieved on January 26, 2014 from http://www.123helpme.com/view.asp?id=97642

9. APPENDICES

9.1. Appendix I: Unilever's Official Information

INTRODUCTION TO UNILEVER

On any given day, two billion people use Unilever products to look good, feel good and get more out of life.

LIFE PARTNERS

With more than 400 brands focused on health and wellbeing, no company touches so many people's lives in so many different ways.

Our portfolio ranges from nutritionally balanced foods to indulgent ice creams, affordable soaps, luxurious shampoos and everyday household care products. We produce world-leading brands including Lipton, Knorr, Dove, Axe, Hellmann's and Omo, alongside trusted local names such as Blue Band, Pureit and Suave.

RESPONSIBLE BUSINESS

For us, sustainability is integral to how we do business. With 7 billion people on our planet, the earth's resources can be strained. This means sustainable growth is the only acceptable model of growth for our business. The Unilever Sustainable Living Plan sets out to decouple our growth from our environmental impact, while at the same time increasing our positive social impact. Our Plan has three big goals that by 2020 will enable us to:

- Help more than a billion people to improve their health and well-being.
- Halve the environmental footprint of our products.

- Source 100% of our agricultural raw materials sustainably and enhance the livelihoods of people across our value chain.

To embed sustainability into every stage of the life cycle of our products, we're working with our suppliers to support responsible approaches to agriculture. We're also learning from NGOs and other organisations, recognising that building a truly sustainable business is not something we can do without expert advice.

We believe that as a business we have a responsibility to our consumers and to the communities in which we have a presence. Around the world we invest in local economies and develop people's skills inside and outside of Unilever. And through our business and brands, we run a range of programmes to promote hygiene, nutrition, empowerment and environmental awareness.

IMPACT & INNOVATION

We realise innovation is key to our progress, and through cutting-edge science we're constantly enhancing our brands, improving their nutritional properties, taste, fragrance, or functionality.

We invest around €1 billion every year in research and development, and have established laboratories around the world where our scientists explore new thinking and techniques, applying their expertise to our products.
Consumer research plays a vital role in this process. Our unrivalled global reach allows us to get closer to consumers in local markets, ensuring we understand their diverse needs and priorities.

ABOUT OUR BRANDS

From long-established names like Lifebuoy, Sunlight and Pond's to new innovations such as the Pureit affordable water purifier, our range of brands is as diverse as our worldwide consumer base.

Unilever has more than 400 brands, 15 of which generate sales in excess of €1 billion a year.

Many of these brands have long-standing, strong social missions, including Lifebuoy's drive to promote hygiene through handwashing with soap, and Dove's campaign for real beauty.

UNILEVER FACTS

More than 2 billion consumers worldwide use a Unilever product on any given day. In 2012, we added nearly €5 billion of turnover, pushing through the €50 billion mark in the process.

BUSINESS FACTS & FIGURES

- Our products are sold in more than 190 countries, generating sales of €51 billion in 2012.
- Emerging markets now account for 55% of our business.
- We have 14 brands with sales of more than €1 billion a year.
- More than 173,000 people work for Unilever.
- We are the number 1 fast-moving consumer goods employer of choice among graduates in 20 countries.

- We are proud winners of the prestigious 2013 Catalyst Award which honours exceptional business initiatives for women in the workplace.

- Almost 80,000 entrepreneurs, including 48,000 women, in over 135,000 villages across India have now joined our rural selling operation, Shakti.

- We have reached 127 million with our Lifebuoy handwashing programmes since 2010, and 49 million people through our Brush Day and Night oral care campaign during 2010-2012.

- 100% of our palm oil purchases in 2012 were from sustainable sources.

- 39% of all our tea sourced comes from farms certified by Rainforest Alliance.

- The greenhouse gas footprint of the use of our products has reduced by around 6% since 2010.

- Over half of our 252 manufacturing sites across the world send no non-hazardous waste to landfill.

OUR VISION

Unilever is a unique company, with a proud history and a bright future. We have ambitious plans for growth and an intense sense of social purpose.

A CLEAR DIRECTION

We work to create a better future every day, with brands and services that help people feel good, look good, and get more out of life.

In 2009, we launched what we call The Compass – Unilever's strategy for sustainable growth. It sets out a clear and compelling vision of our future, in which our brands and services reach and inspire people across the world, helping us double the

size of our business while reducing our environmental footprint and increasing our positive social impact.

It's a goal we're seeking to achieve by developing new ways of doing business through which we can minimise our direct impact and improve hygiene, nutrition, opportunities and health for communities.

We're working with our suppliers, consumers and the retailers who sell our brands to improve their sustainability credentials too.

By combining our multinational expertise with our deep roots in diverse local cultures, we're continuing to provide a range of products to suit a wealth of consumers. We're also strengthening our strong relationships in the emerging markets we believe will be significant for our future growth.

And by leveraging our global reach and inspiring people to take small, everyday actions, we believe we can help make a big difference to the world.

"Achieving significant growth objectives while decoupling growth from environmental impact and increasing our positive social impact is a bold but challenging vision," says Unilever CEO Paul Polman.

"Not many companies have yet taken it on. But I believe it's the only viable vision. One that builds on Unilever's long-term heritage and achievement, while supporting a responsible future."

OUR PRIORITIES & PRINCIPLES

Unilever is committed to supporting sustainability and providing our consumers around the world with the products they need to look good, feel good and get more out of life. Five key priorities provide the foundation for our brand's campaigns. Read some examples of how different brands are upholding these principles.

A BETTER FUTURE FOR CHILDREN

- Our oral care brands Signal and Close-Up encourage children to brush their teeth day and night for optimal dental health. We also partner the FDI World Dental Federation, supporting oral health programmes around the world

- Brands such as Omo and Persil have helped parents believe the unconventional philosophy that Dirt is Good. Children learn through play, and mud spatters and grass stains can easily be removed with effective laundry products

- Unilever also partners the World Food Programme and launched the Together for Child Vitality initiative to bring our expertise in nutrition to children in some of the world's poorest countries.

A HEALTHIER FUTURE

- Our Flora/Becel margarine brands have been scientifically proven to help reduce cholesterol levels

- Vaseline has launched the Vaseline Skin Care Foundation, providing research into skin conditions and support for people affected by them

- Lifebuoy soap has long had a presence in developing markets around the world, and its campaign to promote handwashing with soap has reached more than 70 million people in rural India.

A MORE CONFIDENT FUTURE

- Dove's Campaign for Real Beauty uses real women instead of models in its advertising campaigns. The brand has also launched the Dove Self Esteem Fund which educates and inspires millions of young women

- Our Sunsilk hair care brand has partnered some of the world's leading hair specialists to co-create formulas tailored to treat conditions such as hair-fall, frizz, limp locks and uncontrollable curls

- Close-Up toothpaste provides an affordable oral care solution for consumers in developing markets, allowing them to take care of their dental health and closer with confidence.

A BETTER FUTURE FOR THE PLANET

- We're aiming to grow our business while reducing our environmental footprint and working across the supply chain for every brand to do so

- Our Laundry brands, including Surf, Omo, Persil and Comfort, have launched the Cleaner Planet Plan together, encouraging consumers to change their laundry habits to reduce water and energy consumption

- Our Lipton tea brand backs sustainable forest management projects in Africa

A BETTER FUTURE FOR FARMING & FARMERS

- Many of our brands contain ethically and sustainably sourced ingredients that are independently certified

- Among these are Lipton tea, which is accredited by the Rainforest Alliance, and Ben & Jerry's ice cream, which includes Fairtrade vanilla and almonds in various flavours

- Around half our raw materials come from agriculture and forestry, so we're working towards making our key crops 100% sustainable.

9.2. Appendix II: Inditex's Official Information

Our Group

Inditex is one of the world's largest fashion retailers, welcoming shoppers at its eight store formats -<u>Zara</u>, <u>Pull & Bear</u>, <u>Massimo Dutti</u>, <u>Bershka</u>, <u>Stradivarius</u>, <u>Oysho</u>, <u>Zara Home</u> and <u>Uterqüe</u> - boasting 6.249 stores in 86 markets.

The Inditex Group is made up of more than 100 companies operating in textile design, manufacturing and distribution.

The group's success and its unique business model, based on innovation and flexibility, have made Inditex one of the biggest fashion retailers in the world.

Our approach to fashion – creativity, quality design and rapid turnaround to adjust to changing market demands -- has allowed us to expand internationally at a fast pace and has generated an excellent public response to our retailers' collections.

The first Zara shop opened in 1975 in A Coruña, Spain, a city in which the Group first began doing business and which is still home to its headquarters. Its stores can now be found in prime locations in more than 400 cities on five continents.

Fiscal Year	2012	2011	12/11
Net sales[1]	15,946	13,793	16%
Net profit[1]	2,361	1,932	22%
Nº of stores	6,009	5,527	482
Nº of markets	86	82	4
Employees	120,314	109,512	10,802

The Inditex financial year is from 1st February to 31st January of the following year (1) in millions of euros.

Zara

Zara welcomes shoppers in 86 countries to its network of 1.808 stores in upscale locations in the world's largest cities. The retailer's international footprint proves that national borders are no hindrance to a shared fashion culture.

Zara's approach to design is closely linked to our customers. A non-stop flow of information from stores conveys shoppers' desires and demands, inspiring our 200-person strong creative team.

Zara is in tune with its customers, who help it give shape to the ideas, trends and tastes developing in the world. This is the secret to its success among a wide range of people, cultures and generations, who, despite their differences, all share a special fondness for fashion.

Pull & Bear

Young people's spirit is our source of inspiration. Since its creation in 1991, Pull & Bear has specialised in adapting to the needs of young shoppers, and is now a must-stop destination for casual, laid-back fashion.

We dress the world with a single product and speak a common language, as part of a global youth culture. At Pull & Bear we don't just make clothing and accessories, we design spaces for conveying the message and feeling behind the products we sell. Pull & Bear establishments are welcoming spaces with their own style, in which new fittings blend with repurposed objects to recall the sorts of homes our young customers would love to live in.

Pull & Bear has 834 outlets on the busiest streets and in the leading shopping centres in 62 countries.

Massimo Dutti

Massimo Dutti's 649 stores in 61 countries share a universal design which transcends national borders to connect with today's men and women, who are independent, urban and cosmopolitan. It offers a wide variety of collections, ranging from sophisticated high-end fashion to easygoing casual wear.

Massimo Dutti offers basic, contemporary styles in next-generation fabrics. Garments are always of a high quality, while at the same time practical and comfortable. Subtle textures, 100-percent natural fabrics and innovative blends result in a flawless look and the utmost comfort.

Massimo Dutti stores are found in prime retail locations and are designed with shoppers' comfort in mind. Personalised assistance is a key component of the stores' customer service policy.

Bershka

Bershka, which appeals to our youngest target market, was created in April 1998 as a new concept in retail and fashion. It now has 934 stores in 66 countries.

Bershka's large, spacious stores feature cutting-edge design. They are meant to be a must-see venue for street fashion, music and art. Visitors to Bershka shops can watch videos, listen to CDs and read magazines. Shopping at Bershka immerses you in the newest, hippest 21st century trends.

Stradivarius

Stradivarius takes a youthful approach to fashion with an original and dynamic twist on the latest trends in design, fabrics and accessories.

Stradivarius sells international trendwear featuring cutting-edge design. Its spacious stores, with their fresh, upbeat decor, offer a wide range of fashion for young people who crave an informal, funky look. Stradivarius' 842 stores in 56 countries offer an appealing mix of colour, light and trendy music in an expansive setting.

Oysho

Oysho sells the latest fashion trends in women's lingerie and intimate apparel.

At Oysho, in addition to fun, sexy and feminine lingerie, customers can find contemporary, urban and casual outerwear, comfortable and informal loungewear and unique accessories.

Oysho was founded in 2001 and now has 542 stores in 38 countries.

Zara Home

Zara Home specialises in home decor and linens. Its textile collections – bed, table and bath linens – are complemented by dishware, cutlery, glassware and decorative accents.

Zara Home stores offer inspiration in a range of themed display environments: Contemporary, Classic, Ethnic and White. Zara Home constantly updates the

merchandise in its shops to include the hottest trends in home decoration.

Zara Home was founded in 2003 and it now has 388 stores in 42 countries

Uterqüe

Uterqüe, the newest Inditex Group retailer, sells accessories, fashion extras and a carefully-chosen selection of top-quality fabric and leather garments. Its collections, which are 100-percent designed by the Uterqüe creative team, mix the latest catwalk trends with the retailer's unique merchandise.

Uterqüe was launched in 2008. The appearance of the stores, 88 in 18 countries, is elegant and sophisticated. Interiors are designed to be functional and offer shoppers the last word in comfort.

New merchandise is constantly delivered to Uterqüe stores in an irresistible combination of high quality at an attractive price.

Our Stores

Zara	1.808
Zara Kids	164
Pull & Bear	834
Massimo Dutti	649
Bershka	934
Stradivarius	842
Oysho	542
Zara Home	388

Uterqüe	88
TOTAL	6.249

Our team

The Inditex Group has more than 120,000 employees worldwide. The workforce is international –55% of Inditex's employees are based outside of Spain- most employees (80.4%) are female, and the average employee's age is 26 years.

Inditex's corporate culture is based on teamwork and open communication, and performance expectations are very high. These principles underpin each staffer's personal commitment to meeting customers' needs.

Inditex offers its employees a dynamic, international working environment in which ideas are valued and internal promotion is a priority. We value job stability and a culture of ongoing training.