



INDITEX

A Circular Economy Business Model Case

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Executive Summary

This report presents the case study corresponding to the textile company Inditex, which has been selected by the R2PI project given its importance in the world fashion market. The adoption of a circular model by fashion companies is extremely important, given the relevant environmental impact of this industry.

Based on the common methodology of the R2PI project, this report presents the analysis of the "Circular Sourcing" CEBM, although it also highlights other activities of circularity that complement the aforementioned and that the Inditex Group is partly implementing, such as "Co-product recovery" and "Resource-recovery", the latter in collaboration with non-profit organisations in Spain and other markets.

The objective of the report is, therefore, to offer a general view of how Inditex is facing the challenge of circularity, taking into account both contextual and internal factors, as well as to assess the level of circularity, the outcomes obtained and the SWOT. Finally, the report tries to offer key insights with regards to the "Circular Sourcing" CEBM pattern.

The analysis of the context indicates that there are certain factors in the policy framework that are conditioning the development of circularity in fashion, especially the regulations that affect garments trade, its labelling, and textile waste trade –and will do so even more in the future. The market situation and competition reveal important elements of influence, such as the general race among leading fashion companies towards more sustainable and circular business models. In addition, still uncertain economic factors, such as the evolution of raw materials, water and energy prices and wages, are pointing to the need to adopt measures towards a circular change. As far as the factors of the technological framework are concerned, there is a clear commitment to developing new raw materials and more environmentally friendly processes; likewise, developments in recycling technologies and other advances may change the face of the textile industry in a few years. Finally, while the fast-fashion consumer model continues to be very successful, there is already an increasing demand for healthier and environmentally friendly clothing.

The characteristics of Inditex's business model centred on circular sourcing are analysed in detail. This model is based on the group power along the value chain. Thus, a value network is formed in which some suppliers are key partners, because they share Inditex vision and are doing strong efforts towards a more circular sourcing, while also supporting the development of the local textile recycling industry. At the heart of the business model, Inditex continues offering fashion at competitive prices, but the group is increasingly searching for the environmentally friendliness attribute.

The analysis of the circularity of Inditex Group indicates that it is currently limited in the sense that it is still focused on the sale of a product, and the revenues and costs are clearly linked to the sale and manufacture of that product, not to added services, for example. Although garments are manufactured with more sustainable raw materials, the industry might become more circular yet if fashion companies decide to innovate the business model in more radical ways.

With regard to the financial outcomes, the available data allows to indicate that the manufacturing costs of more sustainable garments are generally higher than those of conventional garments. It is important to remark that Inditex does not pass this higher cost on to end consumers through a price premium. Moreover, sustainable garments are increasing greatly in Inditex's fashion sales.

Existing information points to important non-financial outcomes linked to circular sourcing: the reduction of environmental impacts, greater employment generated through social initiatives by means of projects linked to donated garments; and possibilities for the creation of a stronger industry and employment associated with textile recycling. In addition, technological innovation is very important to support this business model, with investments in R&D aimed at the development of new products (fibres) and processes (design, traceability, recycling).



Using a SWOT tool, Inditex business model is assessed and put in relation to potential circularity. Weaknesses are identified, such as the dependence of the Inditex circular business model on its ability to influence suppliers and the success of the current dominant business model based on continuous and quick sales. There are also strengths, such as the design skills and the ability to anticipate the market, the power to influence suppliers and to play an intermediary role in the fashion industry. As far as external aspects are concerned, the greatest opportunity lies in taking advantage of the favourable state of opinion and the general movement of the fashion industry towards the Circular Economy. The threats may also be high competition, but they rely mainly in the challenges of regulation for the clothing and waste trade and in the current low cost scenario (raw materials, energy and water, and labour), which make sustainable manufacturing more expensive.

Inditex's route towards the Circular Economy will be based on going deeper into the circular sourcing CEBM pattern, especially in the sense of trying to close the loops for some fibres; moreover, in the longer term, it is also part of its plans to explore other business models in which the services added to the product will take on greater relevance.

The business model analysed is replicable and transferable. In fact, a large number of leading companies in the sector are already taking action in the same direction. However, there is a need for greater commitment from industry and consumers. Based on this research, some policy measures are highly recommended to further promote the uptake of the circular business model, including: the establishment of clear objectives for garments reuse and recycling; regulation for favouring the implementation of eco-design, durability and quality of garments; and incentives and education for consumers to change towards more responsible and sustainable patterns of fashion consumption.



1 Introduction

1.1 Background and context

R2π – Transition from Linear to Circular is a European Union Horizon 2020 project focused on enabling organisations and their value chains to transition towards a more viable, sustainable and competitive economic model in order to support the European Union’s strategy on sustainability and competitiveness.

R2π examines the shift from the broad concept of a Circular Economy (CE) to one of Circular Economy Business Models (CEBM) by tackling market opportunities and failures (businesses, consumers) as well as policy opportunities and failures (assumptions, unintended consequences). Its innovation lies in having a strong business-model focus (including designing transition guidelines) as well as in the role of policy development (including designing policy packages).

The ultimate objective of the R2π project is to accelerate widespread implementation of a circular economy based on successful business models and effective policies:

- to ensure sustained economic development,
- to minimize environmental impact and
- to maximize social welfare.

The mission of the project is therefore to identify and develop sustainable business models and guidelines that will facilitate the circular economy, and to propose policy packages that will support the implementation of these sustainable models.

A core part of this project is to work with organisations who are on the journey towards developing circular economy business models, as well as those who have the ambition to do so but haven’t yet begun. The project has conducted case studies of 18 selected organisations.

The 18 chosen cases covered all five priority areas highlighted in the EU Action Plan on the Circular Economy: plastics, food waste, biomass/bio-based, important raw materials, and construction & demolition. Additionally, the cases were selected to ensure learning in each of the seven business model patterns defined by the R2Pi project: re-make, re-condition, circular sourcing, co-product recovery, access, performance and resource recovery, and these will be discussed in more detail in this report. To gather wide-ranging lessons from differing company sizes and maturities, the following were selected: 7 large corporations, 8 small, medium enterprises, 1 public entity, 1 entire value chain with both public and private organisations and 1 ongoing social project.

This report presents the case study of the Inditex Group. It was chosen due to its role in the fashion industry, as a global and leading company, and due to its efforts in adopting a more sustainable and circular business model.

The next section provides a more detailed overview of the case organisation’s business.

1.2 Business overview

Inditex Group is the largest fashion retail group. The business started in 1963 in A Coruña (NW Spain) as Confecciones GOA, a modest workshop making dresses and quilt dressing gowns for distribution. In 1975, after 12 years of making textiles, Amancio Ortega, founder of Inditex, opened the business’s first store in A Coruña.

By working closely together as a single company globally focused on the key elements of fashion production – design, manufacture, distribution and retail – the brand brought customers closer than ever to the products they wanted at affordable prices. The success of the first brand –Zara was



followed by international expansion at the end of the 1980s and the successive launch of new brands, that now have an integrated model of stores and online. Some major milestones along Inditex's journey include:

- In 2001 the company was listed on the Madrid Stock Exchange; it issued a Code of Conduct for Manufacturers and Suppliers and joined the Dow Jones Sustainability Index (DJSI).
- In 2006 Inditex launched its first Environmental Strategic Plan, with actions to carry out until 2010. This was followed by a new Environmental Strategy Plan, called Sustainable Inditex 2011-2015.
- In 2007 zarahome.com became the group's first online store and in 2010 Zara began to sell its products online and by the end of 2010 the online platform was live in 16 European markets. In 2011, the company launched online platforms for all its brands and Zara began to sell its fashions online in the US and Japan.
- In 2008 the first Zara highly eco-efficient store was opened in a landmark building in the commercial heart of Athens. In 2012, the opening of the 6,000 store was celebrated with the inauguration of the brand flagship eco-store in London's Oxford Street.
- In 2011 Pablo Isla, the CEO of Inditex since 2005, became the chairman of the group.
- In 2016 Inditex was named as group leader for the retailing industry in the Dow Jones Sustainability Index and top Greenpeace's Detox Catwalk, being described as 'exemplary' in its approach to zero discharge of hazardous chemicals during its production.

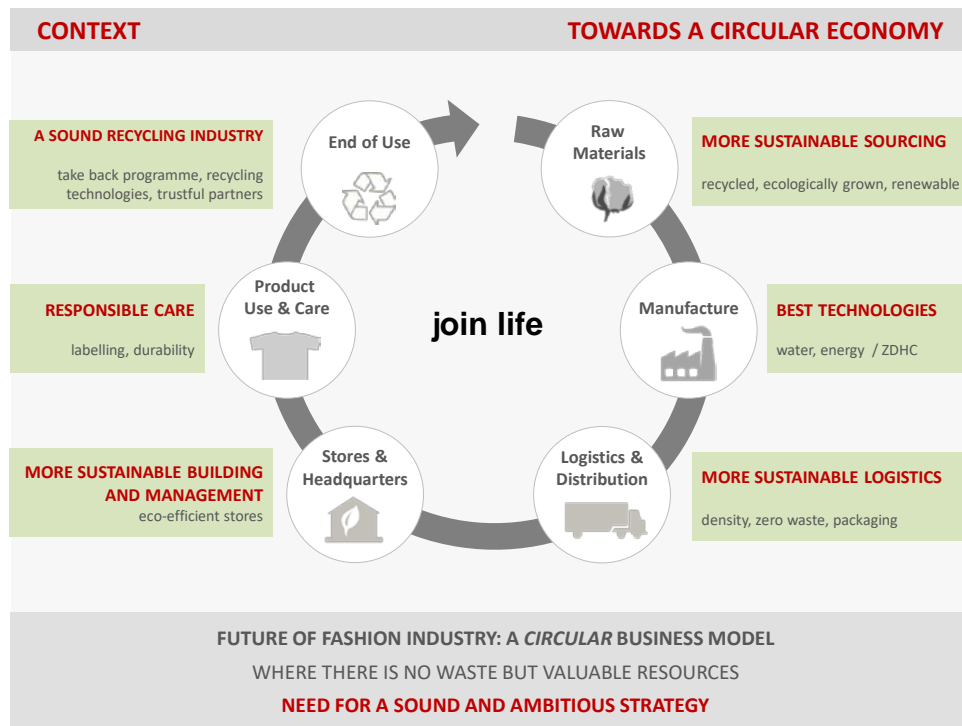
Through 2017, Inditex kept developing its integrated model of stores and online. At year-end 2017, Inditex had 7,475 stores in 93 markets, while its online platform was live in 49. During the year, the group opened a net 279 stores in 56 markets. Sales increased 9% to €25,336 million and net profit increased by 7% up to €3,368 million. These figures demonstrate the success of Inditex's business model. However, the fashion industry has strong social and environmental impacts and Inditex started to intensify their efforts in this area in 2006. The current sustainability strategic plan, which will end in 2020, has the following environmental objectives:

- Commitment to Zero Discharge of Hazardous Chemicals (ZDHC Commitment) with their suppliers.
- By 2020, reach the "Zero Waste to Landfill" objective, which concerns the generation of direct waste by their head offices, logistics centres, stores and Inditex factories.
- All the stores to achieve compliance with the requirements of the eco-efficient store standard, including new openings and renovations.
- Increase the manufacture of more sustainable products through the use of more sustainable fibres and employing the best available production techniques with the least environmental impact.
- Reduce emissions resulting from the value chain and promote a low-carbon economy.

A key part of the sustainability plans is the creation of *Join Life* sustainable collections. *Join Life* is the label that defines products with the 'best' processes and raw materials. It is also a key part of Inditex holistic approach to Circular Economy (Figure 1).



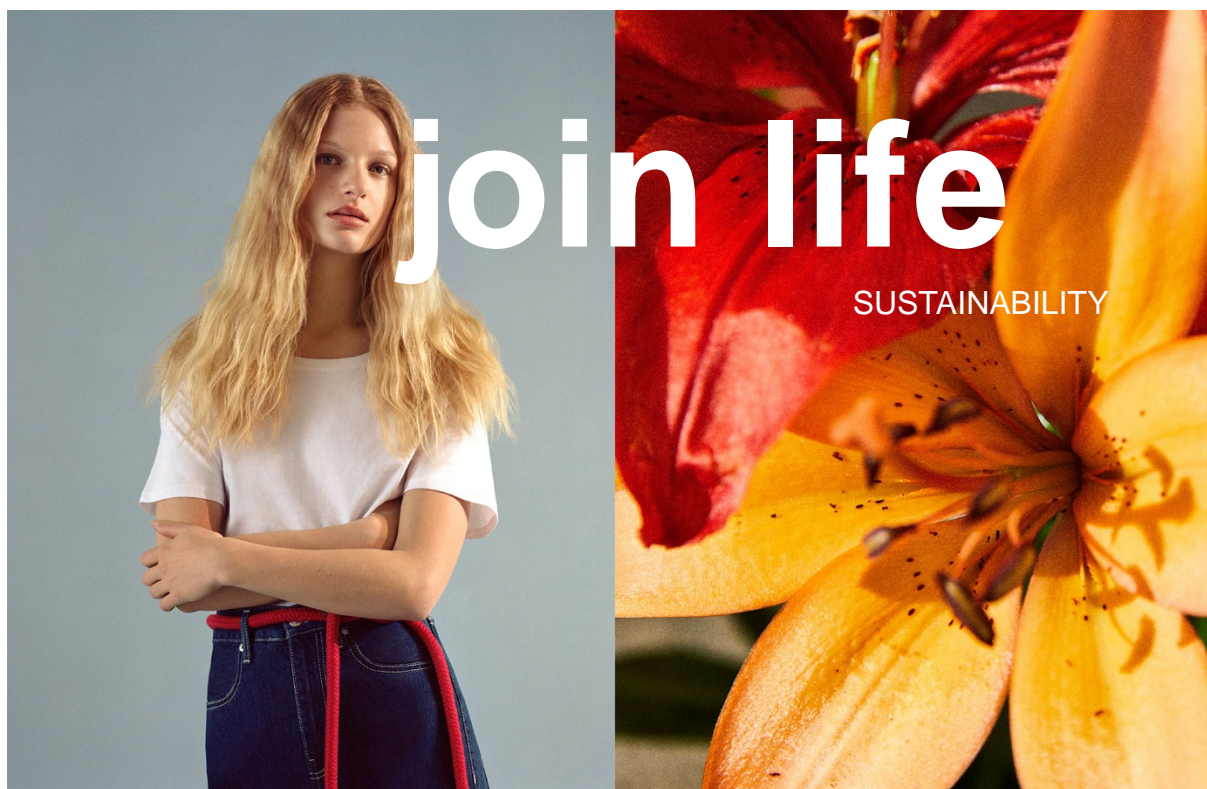
FIGURE 1. INDITEX CIRCULAR ECONOMY OVERVIEW



Source: Inditex

In 2017 Inditex increased the Zara *Join Life* sustainable collections and expanded this initiative to Massimo Dutti and Oysho.

FIGURE 2. JOIN LIFE SUSTAINABLE COLLECTIONS



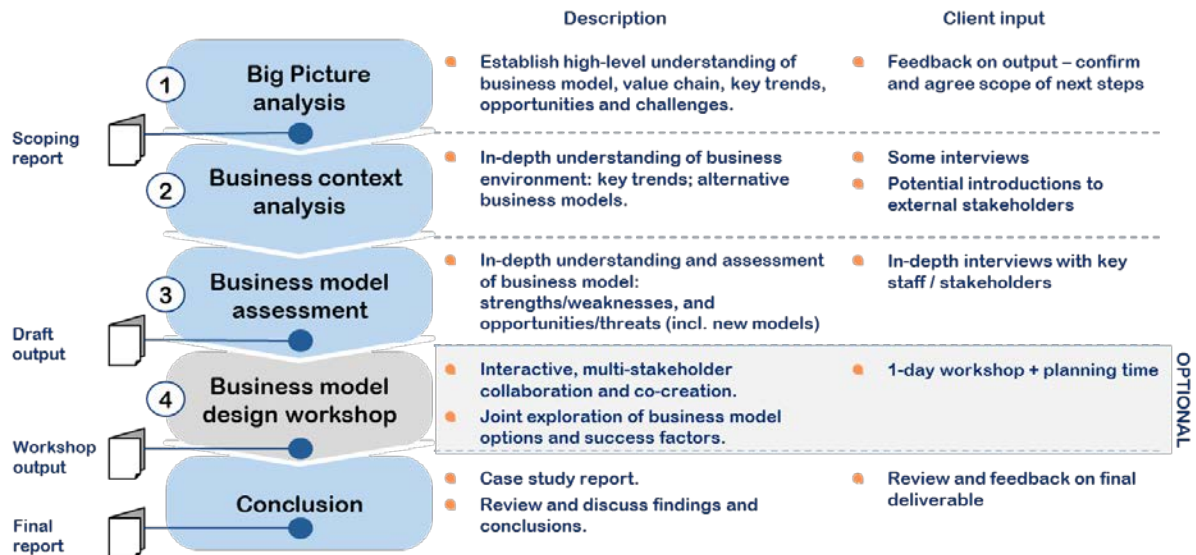
Source: Inditex



Within the framework of R2PI project, the case study will be mainly focused on the first stage of the fashion value chain, with a number of interlinked actions taken to guarantee a more sustainable sourcing of raw materials.

1.3 The case study analysis process

The case study process was structured in three main steps and concludes with this document as the final report (see diagram below).



All of the face-to-face interviews, telephone conversations and electronic correspondence were held with two employees from the Environment Department. The Communication Department also participated in the final stage.

From an internal organisation point of view, the Environment Department is responsible for elaborating Inditex Sustainability Strategy, which means to set the guidelines of the company way of doing business. Staff at this area takes the lead on defining the key strategic projects that support Inditex in its journey towards sustainability and more recently to circularity. Both participants have a deep knowledge of Inditex performance and philosophy, and are aware of the general developments and projects running in other areas of the company. Therefore, they are considered key internal informants.

The kick-off meeting took place on November 3rd 2017, though a previous meeting with full teams of Communication and Sustainability Departments had taken place on May 19th 2017. The scope of the analysis and the planning of next meetings was then arranged. From the kick-off meeting until the next interview, the USC team devoted the time to analyse internal documentation, Inditex annual reports and to carry out an analysis of context trends.

Before the second meeting, Inditex informants were asked to score the items included in the contextual analysis tool. The face to face interview on December 22nd 2017 was aimed at understanding their views and getting in-depth insights regarding the business context factors. The interviews lasted for 3.5 hours.

The next meeting was held on March 9th 2018. It was focused on analysing the business model circularity and conducting the SWOT assessments. In addition, other data and information was asked to the company in order to assess the financial outcomes and to draw the value and material flows.

Communication afterwards was kept by email and by telephone in order to get additional data and further explanations as the report was being written up.

1.4 Report outline

The first chapter has provided a high level overview of the case and case study process. Chapter 2 presents the big picture surrounding the business, showing the context in which it operates and the key external factors potentially affecting the circular business model. Chapter 3 is an analysis of the business at the building block level of the business model, including the circularity of the business, the financials and the strengths and weaknesses. Chapter 4 draws conclusions about the current state of the business and its future potential.



2 Inditex’s business context analysis

2.1 Scope of the business context analysis

The objective of the context analysis is to identify the main external factors that need to be taken into account in order to explain the success (or failure) of Circular Economy Business Models (CEBM), as well as their potential role in accelerating the transition towards a Circular Economy.

In the first stage, desk research was conducted in order to identify the country and sector-specific factors that may potentially affect the business model. To this aim, the check-list provided in D.3.2. Methodology was used. This overall information was collected from available data and information on websites, sectoral reports at the international level and scientific literature.

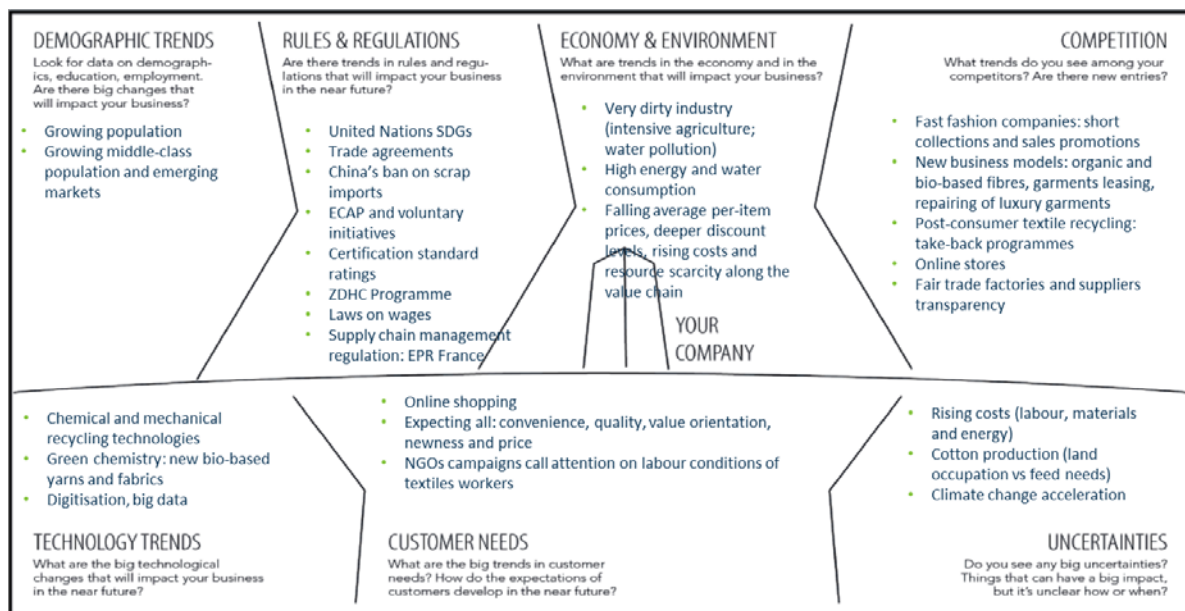
In the second stage, an in-depth interview with the Environmental Sustainability Manager and with the Head of Environment of Inditex was conducted. Both interviewees scored the items in the context analysis tool provided. Afterwards, the interview was aimed at understanding the scores and the reasoning behind.

2.2 Contextual factor analysis

This sub-section presents the different factors that affect the context of the fashion industry, from a Circular Economy perspective. Information presented is based on desktop research and does not include the view of Inditex informants on each matter.

The different factors that will be described below are integrated into different categories, namely: demographic factors, rules & regulations, economy & environment, competition, technology trends, customer needs and uncertainties.

FIGURE 3. CONTEXT MAP CANVAS



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Source: own research



2.2.1 Demographic trends

Demographic trends are increasingly affecting consumption patterns. In the last decades, the main demographic shifts are the aging of population, larger proportion of working women, decline of the middle class and increasing ethnic diversity. All the factors might have an influence in the consumption patterns of textiles products. A deep analysis of those trends is out of the scope of this report. Notwithstanding, this sub-section will focus on analysing a few key issues.

Estimates point to significant population growth in the coming years. From the point of view of the textile industry, while population growth may bring new market opportunities and growth, it will also bring significant challenges.

The world's growing population is increasing competition for resources such as productive land and fresh water. Food production can represent a significant limit to the production of textile fibres. According to GFA and BCG estimates, if the world population increases to 8.5 billion people in 2030 and per capita GDP grows at an annual rate of 2 per cent in developed countries and 4 per cent in the developing world, total garment consumption will increase by 63 per cent, from 62 million tons today to 102 million tons in 2030. Accordingly, the fashion industry will use 35% more land for cotton, forest for cellulosic fibres and pasture for livestock - a total of more than 115 million hectares that could be used to grow crops for an increasingly large and demanding population or to preserve. In addition, the scarcity of arable land could lead to higher land costs or even restricted access for non-food crops in the future (GFA & BCG, 2017).

Moreover, the growing population and its consumption of clothing generates a significant volume of waste, the management of which is becoming a challenge. According to ECAP (WRAP, 2017), the apparent consumption of clothing in the EU-28 is over 6.5 million tonnes, 68% of which is recorded by the five major textile producers in the EU, Germany, Spain, the UK, Italy and France. Italy and Spain have the highest waste per capita of clothing, 7.2 kg and 6.6 kg respectively (WRAP 2017).

In a linear scenario like the current one, it is estimated that more than 150 million tons of clothing would be landfilled or burned in 2050. Between 2015 and 2050, the weight of garment waste would accumulate to more than ten times that of the current world population (EMF, 2017).

2.2.2 Rules and regulations

This sub-section offers an overview of the main regulatory factors that affect the textile industry and as such, set the conditions that any business must observe when it addresses circular innovation.

2.2.2.1 EU textile and clothing industry regulation

The textile and clothing industry is regulated in the European Union by Regulation 1007/2011 on fibre names and related labelling and marking of the fibre composition of textile products. This regulation aims at protecting consumer interests and eliminating potential obstacles to the proper functioning of the internal market. To this aim, the basic elements it covers are: the general obligation to state the full fibre composition of textile products; the minimum technical requirements for applications for a new fibre name; the requirement to indicate the presence of non-textile parts of animal origin; the exemption applicable to customised products made by self-employed tailors; and reporting on the implementation, review clause, and study on hazardous substances to be undertaken by the Commission.

Other legislations affecting the industry are related to product safety (Directive 2001/95/EC of the European parliament and of the Council of 3 December 2001 on general product safety); and to industry emissions (Directive 2010/75/EU of the European parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)).



There are also documentation tools for eco-labelling of textiles (Commission Decision of 5 June 2014 establishing the ecological criteria for the award of the EU Ecolabel for textile products) and for green public procurement criteria (Dodd & Gama Caldas, 2017).

2.2.2.2 Global accelerators

The **UN's Sustainable Development Goals (SDGs)** set the global direction for the actions of all actors. As far as the textile sector is concerned, some objectives are particularly applicable: SDG 12, for instance, is committed to ensuring sustainable consumption and production patterns, including the use of natural resources, chemical waste, fossil fuels and the integration of sustainable practices into production cycles.

A number of SDGs have a direct relation to the garments industry: SDG 6 concerns water pollution, the release of chemicals and hazardous materials, waste water treatment and water use efficiency. SDG 13 emphasizes urgent action to combat climate change and its impacts. SDG 14 addresses the issue of marine pollution, such as microfibres and microplastics released into the oceans from fabric washing and manufacture. In addition, cotton production worldwide seriously degrades soil quality, requiring restoration according to the commitment made in SDG 15.

In 2012, the United Nations Global Compact launched the first sustainability initiative specific to the fashion industry in collaboration with the Nordic Fashion Association, which published a Code of Conduct for the fashion industry. They are now working with garment companies on water, supply chain and health issues, among others. While having made many efforts, the United Nations has not taken a comprehensive approach to address all aspects of sustainable development in the textile sector.

2.2.2.3 Trade agreements

One of the main regulations that affect the fashion industry has to do with international agreements of products and scrap trade. From 1 January 2005 onwards, after more than forty years of import quotas, the textile and clothing sector became subject to the general rules of the General Agreement on Tariffs and Trade (GATT). The liberalization process has been limited in practice, with some distorting measures prevailing such as import quotas of some mainly developing countries by country and product. In this sense, countries with comparative advantage in textile and clothing sectors (e.g. China and India) face binding quotas, while other countries face no quotas. Some studies (Nordås, 2004) indicate that the countries that are most likely to lose market shares are those located far from the major markets and which have had either tariff and quota-free access to the United States and EU markets, or which have had non-binding quotas.

With regards to Circular Economy, an important trade is that referred to textile waste. The EU defines used textiles as waste, and its strict rules on the transport, storage, and treatment of waste pose challenges for collection and recycling efforts. This has already been recognized as a problem and a proposal as part of the European Commission's Circular Economy Package suggests reclassifying recycled materials as non-waste whenever they meet a set of general conditions.

Moreover, China is setting banning imports of textile scraps in order to cut back on its own pollution. China notified the World Trade Organisation (WTO) that by the end of 2017 it would ban imports of 24 types of rubbish, as part of a campaign against "foreign garbage" and environmental pollution. This ban could curb global textile recycling progress, prevent China's manufacturing sector from accessing recyclable materials and minimize other eco-friendly opportunities for recycling. For recycled commodities such as recovered paper and fibre, plastic scrap, and copper scrap, China accounts for more than half of the world's total imports.

2.2.2.4 Supply chain management regulation

France is the only European country where there is a mandatory extended liability system for textile waste. The Extended Producer Responsibility (EPR) concerning textiles was introduced by Finance Act



No. 2006-1066 of 21 December 2006. This regulation is to engage producers in considering end of life of their products when putting it on the market. Every company that introduces clothing, household linen, and footwear items on the French market to sell it under their own brands, must either: set its own internal collecting and recycling program accredited by the French Public Authorities or pay a contribution to Eco TLC (the company accredited by the French Public Authorities to manage the sector's waste) to provide it for them.

2.2.2.5 Standards - ecolabels

Over the last few years, the textile industry has developed a series of standards regarding the sustainability of textile products. The following are some of the best known:

- **Oeko-tex Standard 100:** this standard evaluates the use and handling of chemicals, the use and disposal of water, the production of exhaust air, the generation of dust and noise, the use of energy, general conditions in the workplace and requires an environmental management system. The Oeko-tex 100 standard is now mandatory in several European countries.
- **Eco-label for textile products:** assesses the limited use of substances harmful to the environment, substances harmful to health, reduction of water and air pollution, shrinkage resistance and colour.
- **Global Organic Textile Standard (GOTS):** is an initiative of four renowned member organisations, namely OTA (USA), IVN (Germany), Soil Association (UK) and JOCA (Japan), together with other interested international organisations and experts. The aim is to define the requirements that are recognised worldwide and that guarantee the organic status of textiles from the harvesting of raw materials through environmentally and socially responsible manufacturing to labelling, in order to provide a credible guarantee for the consumer. Since its introduction in 2006, the GOTS has grown to 5,024 certified facilities by 2017. Entities participating in the certification scheme include processors, manufacturers and traders throughout the textile supply chain, from small-scale units to the largest vertical integrated companies producing primarily for the North American, European and Japanese sales markets.

2.2.2.6 Voluntary initiatives

The textile sector has joined along the last years in a number of initiatives that have been launched with the aim of creating a new sustainable and circular textile economy. Those different programs, though having a voluntary character, are pushing the garments industry towards a new way of performance. Some of the main initiatives are as follows:

The **European Clothing Action Plan (ECAP)** was begun with the aim of addressing the environmental challenges at every stage of the European clothing industry's life cycle. Eleven countries have signed up to the ambitious plan so far. These are: Denmark, Finland, Germany, Italy, Netherlands, Norway, Poland, Romania, Spain, Sweden and the UK. ECAP is based on WRAP's UK-only scheme, Sustainable Clothing Action Plan (SCAP). SCAP was launched to improve the sustainability of textiles across their life cycle from design to end-of-use. It brings together industry, government and retailers, in addition to running a campaign focused on changing consumer behaviour. ECAP has defined the following targets for 2019, starting from the 2015 baseline:

- Divert 90,000 tonnes of clothing waste from landfill and incineration
- Save 1.6 million tonnes of CO₂e
- Make 588 million m³ of water savings



The **Higg Index of the Sustainable Apparel Coalition (SAC)** is a set of tools that allows brands, retailers and facilities of all sizes to accurately measure and score the sustainable performance of a company or product. The Higg Index Transparency Roadmap is the SAC's phased approach to achieving full transparency by 2020. All SAC members can share their Higg Index scores based on reliable assessments and verified data, which triggers transparency. To create consistency, credibility and comparability of Higg Index scores, the SAC is creating verification programs for each of its tools.

The Zero Discharge of Hazardous Chemicals (ZDHC) Program recognizes the imperative of collaboration to address the challenges of the textile industry in relation to chemicals management. Now in its fourth year, the ZDHC Program has 19 signatory brands and 7 partners. The joint Roadmap streamlines efforts and promotes the achievement of the programme's zero discharge target.

2.2.2.7 Regulation on minimum wages

In many Asian countries, minimum wages in the sector are less than half the minimum wage of what can be considered a living wage. Strengthening the enforcement of minimum wage laws affects the fashion industry, especially those that are squeezed by extreme competition and tight margins. In this sense, concern for their international competitiveness has led many governments of producing countries to hesitate to set minimum wages that meet the basic needs of workers. Voluntary agreements abound, such as the ACT (Action, Collaboration, Transformation), bluesign to certify production processes, the UN Global Compact and the Bangladesh Fire and Building Safety Agreement. The International Labour Organisation publishes standards, but without the capacity to apply or enforce them directly. However, there is not one legal framework between countries that addresses all of them (GFA & BCG, 2017).

2.2.3 Ecological factors

Globally, the textile industry is a debated industry because of its severe impact on the environment due to the consumption of an enormous amount of resources, as well as the generation of 5% of total waste in the world (Fischer & Pascucci, 2017a). The carbon footprint of clothing consumed in one year, 2015, is 195 million tonnes of CO₂e within the EU. The use phase has been shown to have the largest carbon impact for the EU as a whole, although production also accounts for almost one third of CO₂e emissions. The total water footprint of clothing consumed in the EU in one year, 2015, is 46.4 billion m³.

Following Life Cycle Assessment (LCA) studies (Dodd & Gama Caldas, 2017), the production of textile fibres shows the worst impacts on agricultural land use, terrestrial ecotoxicity and eutrophication; the use phase has the most significant impacts on freshwater ecotoxicity, marine ecotoxicity and water depletion. Overall, the key lifecycle environmental impacts are (op. cit., 2017, p. 18):

- Hazardous effects on the aquatic environment due to the use of hazardous fertilisers and pesticides during the cultivation of natural fibres.
- Hazardous effects on the aquatic environment due to substances used during the processing of intermediate and final textile products.
- The use of biotic and abiotic resources from forestry, petroleum and natural gas to manufacture fertilisers and fibres.
- Greenhouse gas emissions, acidification and smog resulting from the production and use of electricity and natural gas used to manufacture synthetic fibres and to wash, dry and iron textiles.
- Early product failure which can result in the consequent waste of biotic and abiotic resources, and their landfilling or burning with potential for hazardous emissions to air and water.



Environmental impacts are due to many sources: natural fibres, such as cotton, which is dependent on a very intensive farming system, use large amounts of pesticides and fertilizers (Pesticide Action Network UK, 2017); over 8,000 synthetic chemicals are used in textile production globally, and 17-20 percent of industry-caused water pollution is estimated to be caused by textile dyeing and treatment; as well as intensive use of water in fabrics processing (Weetman, 2017).

Some figures are remarkable: cotton uses 22.5% of the world's insecticides and 10% of all pesticides, and occupies 2.5% of agricultural land. The world average water footprint of cotton fabric is 10,000 litres per kilogram. This means that a 250-gram cotton shirt costs about 2,500 litres. A pair of 800-gram jeans costs 8,000 litres. On average, one third of the cotton's water footprint is used because the crop has to be irrigated, contributing to water scarcity and the depletion of rivers and lakes. In comparison, hemp needs only 2,000 litres of water per kg (www.pan-uk.org).

Moreover, according to the International Service for the Acquisition of Agri-Biotech Applications (ISAAA), genetically modified (GM) cotton accounted for 64% of the cotton grown in 2016. The impacts of plant escapes from transgenic fields and the potential for crossbreeding are not sufficiently known risks. In addition, farmers cannot save their seeds and may become trapped in a cycle of indebtedness, without being able to cover the costs of more expensive agricultural inputs of seeds and chemicals.

The waste footprint over the entire life cycle of clothing consumed in Europe is 11.1 million tonnes. This includes waste from the supply chain, as well as all garments discarded at the end of their useful life. A large amount of fibre is lost during the production of fibres and clothing due to the release of natural fibres. The manufacture of garments, including cutting and make-up, also produces large amounts of fabric waste (WRAP, 2017).

If industry continues along the current path, by 2050, textile production would use more than 25% of the carbon budget for a 2°C route. The number of plastic microfibres entering the ocean between 2015 and 2050 could accumulate to over 22 million tonnes. With the use of water, the greatest challenge will be to access the water on which the textile industry depends in regions with scarcity. The management of textile waste will be increasingly challenging. If production and consumption patterns continue as they are today, more than 150 million tonnes of clothing will be landfilled or burned in 2050 (EMF, 2017).

2.2.4 Economy and market factors

Fast fashion, which is also critically known as 'throwaway fashion' (Weetman, 2017), emerged in the 1990s, as manufacturers developed quick response methods to speed up the textile processes, improved logistics and larger scale factories. Clothing and textiles represent around 7 percent of total world exports, and the market is growing at around 2.5 per cent each year. Around one third of sales are in Western Europe, one third in the USA and one quarter in Asia. Major players include H&M, Inditex, Adidas, Nike, Uniqlo, Primark, Gap, Levi Strauss, LVMH and TJX. Sales are through retail outlets and online, with the online channel growing rapidly (Weetman, 2017).

The recent Pulse of Fashion report projects that by 2030, brands could see a decline in earnings before interest and tax (EBIT) margins of more than three percentage points. This is due to estimated increases in labour wages and raw materials and energy prices (GFA & BCG, 2017).

Besides that, it is also worth to analyse the influence of NGOs campaigns NGOs in the behaviour of both industry and consumers. The Sigwatch 2015 report indicates that the ten largest corporations attracted between 50% and 70% of all NGO attention. The strategy of targeting the larger ones maximises the efficiency of NGO campaigns by attracting more attention from the media and political organisations, leading to changes in their business environment and also changes in the behaviour of



small and medium-sized enterprises (Sigwatch, 2016). The effect of NGO campaigns on the behaviour of garment, textile and footwear companies has been noticed in campaigns against sweatshops, leading to negative effects on sales and share prices, external evaluations of companies, Corporate Social Responsibility (CSR) ratings and corporate reputation (Bartley & Child, 2011).

According to Sigwatch (2015), 77 activist campaigns were registered in 2014. The LVMH Group is the first Fashion and Textile Corporation to have an impact on activism campaigns throughout the world in 2014, followed by Benetton Group S.p.A. Inditex ranks in the sixth position in this list of criticised companies. These campaigns are related to many issues, but the most important are supply chain responsibility, the use of chemicals and plastics in fashion, fur production and animal cruelty. Disposable fashion items took a discreet position in 2014, recording campaigns only in Europe.

2.2.5 Competition

Until recently, developments in the textile and clothing industry were focused on technological and cost aspects. Emphasis has been placed on keeping the price of the final product low within reason and increasing production efficiency. Products are designed and produced in accordance to trends that change regularly and allow for continued revenue stream. In this regard, over the years, textile manufacturing has moved to lower-cost countries and the shelf life of clothing has shortened.

A number of trends can be highlighted across the garments sector:

- Digitalisation has been advancing throughout the fashion industry's value chain;
- There is an acceleration in the pace of the industry (time limits from design to shelving);
- Brands are starting to experiment directly with the consumers, given them the possibility to co-create;
- New innovative business models are emerging;
- The store is being reinvented;
- Data is proliferating, which provides business opportunities and challenges in terms of control and security;
- Some platforms (Amazon, Zalando) are already pushing their own private label fashion offerings.

Moreover, several business initiatives are taking the fashion sector into a new circular paradigm, including: fashion business models built around the reuse of post-consumer and post-industrial textile waste, in order to create a large-scale upcycled fashion collection; consumer and community participation initiatives, such as workshops, clothing exchanges and consumer participation in the design process (Niinimäki & Hassi, 2011). Among the alternative pathways in the fashion industry, two patterns have been identified (Fischer & Pascucci, 2017b): the Status Quo (SQ) agreement, which refers to companies that focus on the optimization of up-cycling technologies and infrastructures in their circular relationships and collaborations; and the Product as a Service (PAS) agreements, which are implemented by companies oriented to provide products as services, either in B2B or B2C markets. This is the case with smaller initiatives, which radically change the linear business models of the fashion industry.

A study for the UK (Caniato, Caridi, Crippa, & Moretto, 2012) has identified the existence of alternative models represented by small manufacturers who, in addition to product design, are investing heavily in more environmentally friendly processes (e.g. sun drying and natural dyeing). Companies that use ecological criteria to select their suppliers and seek to promote sustainability throughout their



inbound supply chain (through local sourcing or in the context of fair trade), but the most radical change is the complete redesign of the outbound supply chain to exclude distributors and retailers and directly reaching the market.

There are nowadays a number of interesting initiatives. The Spanish Ecoalf uses high quality recycled fabrics to create more sustainable garments. Turntoo develops creative business models that enable companies to make their products available as a service, or to help customers who wish to provide these services. Mud Jeans is a Dutch brand of jeans that offers its clients the possibility of leasing a pair of jeans for a monthly fee. After one year, the customer can change to another pair of jeans and used jeans are sold as vintage jeans. Lena Fashion Library is a store where people can buy clothes and a library where they can rent clothes, so customers can change their clothes as often as they wish. Dutch Awearness is a company that rents garments from companies, offers a repair service and is responsible for the performance of the garments during the contract period. Patagonia is an outdoor garments brand, which promotes repairing and reuse of clothes and recycles them when they are no longer repairable.

Among the major international brands, H&M, C&A, Nike, Inditex, M&S and others, are taking action to modify their business model towards the circular paradigm, implementing models for a higher use of sustainable raw materials and fibres, the collection of used garments, later destined for second-hand markets or for recycling for the manufacture of new fibres, as well as experimenting with new business models. For instance, the C&A Foundation has recently approved five initiatives for the implementation of the Circular Economy in collaboration with different partners, which seek the development, innovation and diffusion of new circular business models, such as co-creation with the client and the promotion of changes in demand. Also disruptive is H&M Arket's new clothing brand, which incorporates sustainability into cradle to cradle development processes and the product life cycle. H&M Group has defined the brand concept around longevity, with an emphasis on durable design and quality.

2.2.6 Technology trends

Overall, general purpose digital technologies find different applications along the fashion value chain. This is in fact a disruptive factor that is transforming the sector. In addition, technological trends offer important possibilities for the transition to a more circular textile sector: they can radically support virtualization and dematerialization, transparency and intelligence based on feedback (EMF, 2017).

Some technological advances will be key for supporting a circular fashion industry in the next years (GFA & BCG, 2017):

- Chemical and mechanical recycling technologies: the level of development of each is uneven and each technology offers different possibilities to capture the value of the material. There are advances in mechanical fibre recycling, technologies for chemical recycling of polymers, chemical recycling of monomers, for mixtures of different fibres. The recycling of yarns is still under exploration.
- Technology to track products and materials, enabling easy inventory tracking and classification of materials after use.
- Custom design and manufacturing technologies: they will allow designers to create modular garments that can be adapted by users over time; adapt clothing with individual body shapes and styles, tailored clothing to scale; improve the aesthetics and functionality of clothing (e.g. odour neutrality and protection of the wearer from electrical radiation caused by mobile phones).



- New raw materials and fabrics: based on biotechnology, such as Lyocell, which is composed of cellulose fibres made from pulp dissolution, for example, from wood (Tencel™) or bamboo (Monocel®), bio-based Nylon 6.6, which comes from glucose and other renewable raw materials. Other promising areas include research and prototyping of fibre types; electronic/smart fabrics that integrate advances in nanotechnology and electronics.
- Technology platforms: they enable the resale market, peer-to-peer markets, free exchange, consumer awareness, etc.

Apart from that, increasing incentives exist for fashion brands to expand automation: robot costs are falling and technology continues to advance rapidly, which will allow for specialized machines called sewbots. 3D printing can be also an important technology in the industry, although its applications in fashion are limited at the moment.

2.2.7 Customer needs

According to the European Commission (2014), the environmental issues of greatest concern to European citizens are related to pollution, waste generation and the depletion of natural resources. The increasing amount of waste concerns a relatively high proportion of respondents in the EU-28 (43%). Moreover, the majority of Europeans (54%) say that sorting waste for recycling should be one of the three priorities of people's daily lives in their country to protect the environment, while less than a quarter identify with reducing packaging waste (24%). In addition, 75% of respondents in the EU are willing to pay more for environmentally friendly products. This figure is consistent with literature (Webb, Mohr, & Harris, 2008), which shows that companies' ethical, environmental and social behaviour are sometimes more important drivers of consumer choice than the price and quality of products. None withstanding, it seems that fashion consumers are moved by other factors yet.

A number of current trends are important to understand fashion customers needs: consumers are always connected and in control as well as seamlessly moving; the omnichannel during the shopping trip is growing; peer-to-peer sharing (information, reviews, opinions) is generalised; and consumers are simply expecting all when they do shopping, meaning convenience, quality, values orientation, newness and price (BOF & McKinsey&Company, 2018). Therefore, while looking at environmental and social values is calling increased attention among fashion customers, a number of other factors remain that push the demand of conventional fashion.

In line with the growing awareness of consumers, fashion companies have also begun to accept the importance of sustainability, with 42 out of every 100 fashion brands disclosing supplier information by 2017 (BOF & McKinsey&Company, 2018).

2.2.8 Uncertainties

The main challenges identified by the fashion industry for 2018 are the following (BOF & McKinsey&Company, 2018): coping with volatility, uncertainty and change in the global economy; competition from the network and the omni channel; improvement of the value chain and digitisation; as well as retail pressure.

- Economic uncertainty: according to McKinsey FashionScope, by 2018 more than half of clothing and footwear sales will originate outside Europe and North America. For many companies in the sector, focused on developed countries, they face a stagnant sales and profitability outlook, and must seek new sources of growth. Latin America is forecast to be a strong growth market, with growth rates between 5 and 7.5 percent. The economic outlook in Europe is stable, growth is expected to remain modest but steady at 2 to 3 per cent and the outlook for the US fashion sector is less clear; less affected by overall consumer confidence but more by the uncertainty of changes in fiscal and trade policy (estimates a modest growth of 1 to 2 per cent).



- Globalisation versus nationalism: the nationalist rhetoric is increasing in public debate, leading to the protectionist stance taken by many countries with initiatives such as 'Made in America' and 'Made in China 2025'. However, we are also entering a new phase of globalization, driven by digital connectivity and data flow.
- The adoption of disruptive technologies such as advanced robotics, mobile internet, advanced analysis, virtual and augmented reality and artificial intelligence is accelerating, with the potential to disrupt entire industries, including fashion.
- The global fashion industry is entering a decisive phase of digital adoption by consumers and online sales of clothing and footwear are expected to grow rapidly, especially in emerging markets. Selling through online platforms not only means relinquishing control of their own brand and merchandise presentation, but also delivers the collection and control of increasingly important customer data to the platform.
- The new digital system facilitates collaborative models between fashion companies and their foreign suppliers and service providers that can improve transparency, traceability and trust around the world; the value chain can be further enabled through the technology block chain. In this way, companies will be able to leverage global ideas, trends and talent pools faster and more efficiently.

Following estimates of the Pulse of the Fashion Industry report (GFA & BCG, 2017), with resources becoming even scarcer, the industry will face rising costs from labour to materials and energy. Based on conservative projections, fashion brands' profitability levels are at risk in the range of at least 3 percentage points if they don't act determinedly, and soon. Next are some estimations on the evolution of key variables:

- Between now and 2030, the industry's labour costs are expected to continue to outpace growth in retail value. While retail value is projected to grow at 2% annually, the cost of labour in large garment-producing countries is expected to grow between 4-5% a year. While it will benefit the workers, it will also increase the pressure on fashion brands' profitability.
- Energy prices are projected to increase steadily, with annual growth of at least 2.3% to as much as 3.5% over the same period. It is estimated that energy costs account for 6% to 10% of production and material costs. In this sense, oil prices, which are assumed to drive 50% of polyester price, may rise due to conflicts in the Middle East and in Venezuela.
- High water stress levels in cotton-producing countries such as China and India are projected to become even more severe in the next decade (40% shortfall between supply and demand by 2030). Thus, cotton-growing nations and the fashion industry may face the dilemma of choosing between cotton production and securing clean drinking water. Similarly, the necessary 60% increase in agricultural production in order to feed the estimated 8,500 million people, will result in the dilemma of whether to produce raw materials for textiles or to grow food. In addition, governments may raise prices of increasingly scarce water.

3 Business model assessment

This section focuses on the analysis of the Inditex business model. The objectives are to gain a deeper understanding of the circular business model and to map out the value chain and interactions in more detail in order to enable an analysis of the strengths and weaknesses as well as to consider the replicability and transferability of such a model to other entities and sectors. The business model assessment has been conducted through a combination of publicly available information, interviews with employees of Inditex and internal documents provided by the organisation.



3.1 Inditex business model

3.1.1 Business model overview

Inditex is one of the leading fashion groups in the world. With over 171,000 employees, it operates in 96 markets through its network of stores and online business. Its way of understanding fashion, based on commitment to flexibility and innovation, have allowed the eight group brands Zara, Pull&Bear, Massimo Dutti, Bershka, Stradivarius, Oysho, Zara Home and Uterqüe to respond to customers' needs at the right time to offer them the latest trends that they demand.

Inditex sustainable business model is characterised by a high degree of integration of all phases of the fashion process: design, supply, product and manufacturing quality control, logistics and retail through its 7,475 stores worldwide and in 47 online markets. This section provides an overview of the circular elements that Inditex has incorporated along the last decade.

Inditex is working to develop a more sustainable sourcing business model and has created the *Join Life* collection. *Join Life* labelled garments are those that are manufactured according to more sustainable raw materials and fibres, as well as adopting the best processes. Key milestones of this model are:

- Inditex is increasing the number of products in its collections that use renewable and circular raw materials, such as more sustainable and recycled fibres. Inditex brands (e.g. Zara) are the biggest buyers of more sustainable fibres such as Tencel™ Lyocell. The group is ranked fifth in the world in the consumption of organic cotton by volume.
- With a key supplier they have developed Refibra™, using Inditex's textile waste (from key suppliers) and wood sourced from sustainably-grown forests. All of the raw materials used by Inditex that come from forests (viscose, lyocell) are FSC® certified.
- Inditex acts as an intermediary in the supply chain, linking specific suppliers to take advantage of fabrics leftovers, which are added to virgin materials to produce new fibres that can re-enter the garment manufacturing processes afterwards. Moreover, Inditex own factories have trialled a re-make model: some garments that are not sold in stores come back to those factories to be redesigned. Instead of being sent for sales, recycling and second-hand markets, Inditex tries to improve their aesthetic and sell those new garments.
- Inditex has settled containers in all Zara and Bershka stores in Spain (and the company plans to implement them in other stores) to collect clothes from customers. The customers are also able to deliver their clothes when they receive online orders at home. Moreover, Inditex also supports third sector organisations in a number of markets to set urban garments collectors. All clothes collected are donated to targeted NGOs, which classify, clean, repair and recycle them. Third sector organisations have developed their own circular business in the fashion industry: they prepare garments to be sold in second-hand markets and prepare the garments that cannot be reused to enter a recycling process. Recycling of garments into new yarns and manufacturing of fabrics can re-enter the garment manufacturing industry.

Apart from circular elements implemented around the garment manufacturing, Inditex has also embedded circular patterns in its core activities, namely logistics and distribution:

- All the cardboard boxes coming from suppliers are reused five times on average before being recycled and remanufactured as small boxes for Inditex online deliveries. Along the supply chain, Inditex keeps service contracts with pallets suppliers, which are sustainably reused once and again. The company also reuses all the hangers and garments alarms in its stores.
- Eco-efficient stores: the objective is that by 2020 all of the stores will be eco-efficient. The efforts are focused on increasing energy efficiency and reducing emissions and waste in



logistic centres, stores and offices. New offices and logistic centres are designed according to eco-efficient architectural principles. Two centres in Galicia have obtained the Gold category in LEED certificate. Examples of measures in the central offices of Pull&Bear include: eco-efficient design of the building and location in a natural space, which recreates a native garden; a water treatment plant that favours water reuse for irrigation; efficient lighting, based on natural light management combined with smart led-based lighting; smart climate control; electricity entirely based on renewable energies; careful selection of materials, with furniture and wood elements coming from FSC® forests.

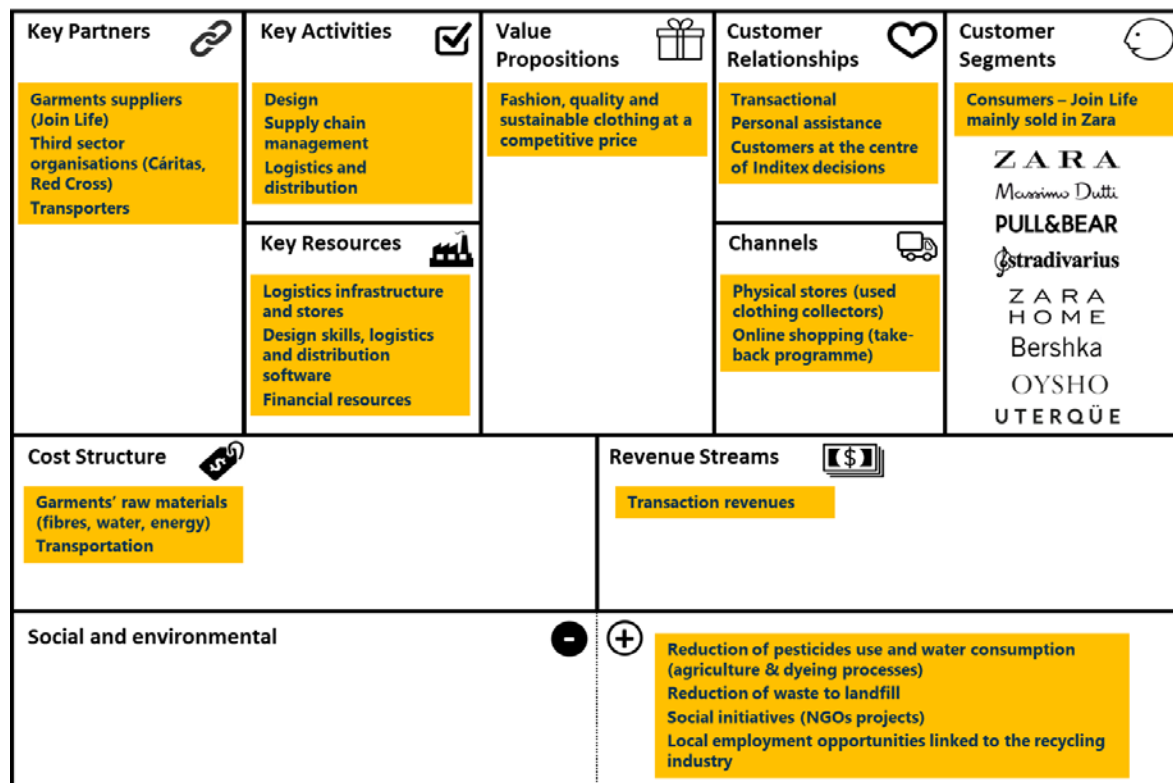
In the kick-off meeting, it was acknowledged that the R2PI research focus would be on the first stage of the fashion value chain, with a number of interlinked actions taken to guarantee a more sustainable sourcing of raw materials. The next sections offer hence an assessment of the business model centred around the *Join Life* collections.

In order to assess this part of the business model, two face-to-face interviews were conducted. The first one was the kick-off meeting and the second one was centred on conducting the SWOT analysis and the circularity assessment. The second one lasted for three hours. Three more telephone interviews were conducted and email correspondence was kept in order to clarify information and collect financial data to further assess the business model circularity.

Depicting the Business Model Canvas

Figure 4 shows the visual visual representation of Inditex’s business model, based on the Business Model Canvas. This is to incorporate the way in which: (i) the value proposition and customer needs assessment and; (ii) circular economy principles, are applied and embedded.

FIGURE 4. BUSINESS MODEL CANVAS



CC BY NC ND Strategyzer.com

Adapted by R2PI

Source: own research



Inditex's general business model is characterized by the search for proximity sourcing using 57% supply in or close to Spain (Portugal, Morocco, Turkey) to accelerate logistics process in adapting production to market demand. Inditex business model is also based on control of the supply chain in the various stages of design, manufacture and distribution. This enables the company to focus both its own and suppliers' production on changes in trends within each sales campaign.

The company's logistics system supports the continuous deliveries to stores, throughout each season, from the distribution centres of the various commercial formats. This system essentially operates through centralized logistics facilities for each of the concepts, at which inventory is stored and from which it is distributed to all the stores worldwide.

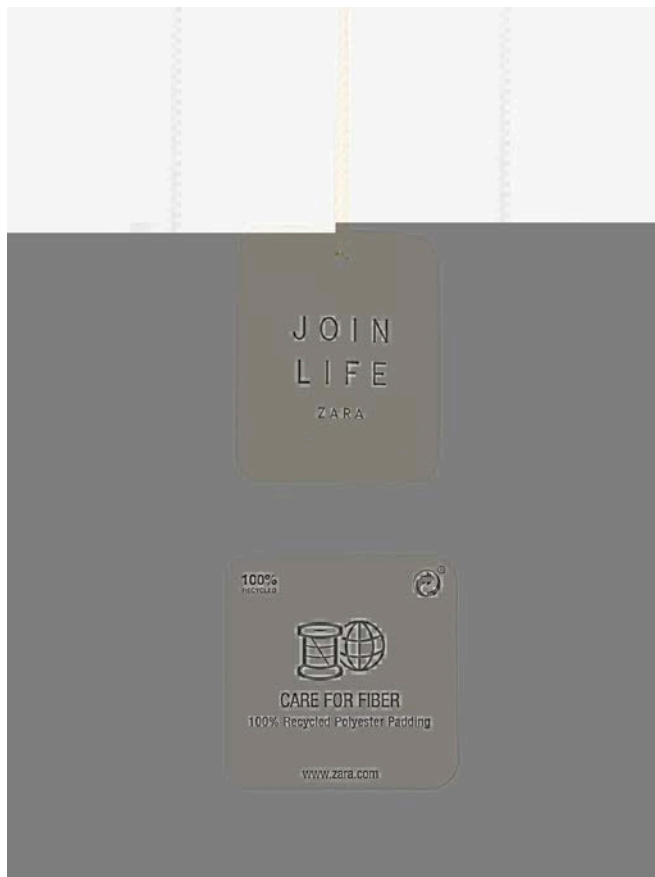
The building blocks of the business model from a circular perspective are described below:

3.1.1.1 Value proposition

Inditex value proposition consists of selling fashion and quality clothing at a competitive price. A key aspect of the value proposition is to quickly answer to demand for flexible fashion by consumers. Regarding *Join Life* garments, the value proposition is to sell fashion and quality clothing at a competitive price, while also being environmentally-friendly. It is worth noting that Inditex does not claim *Join Life* to be a differentiated product, it is not advertised in stores and the company does not charge a premium price for it. It is only on Zara online that *Join Life* is presented as a remarkable brand.

Therefore, the *Join Life* value proposition consists of a product with an environmental value, which has some links to a circular sourcing pattern. Thus, environmental sustainability of *Join Life* garments exceeds other cost-based criteria.

FIGURE 5. JOIN LIFE LABEL



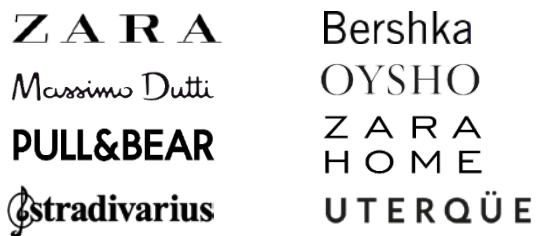
Source: Inditex

3.1.1.2 Customer Segments

Inditex is a group made of 8 different brands (Zara, Massimo Dutti, Uterqüe, Oysho, Pull&Bear, Bershka, Stradivarius and Zara Home). Each Inditex brand targets a different customer segment. Notwithstanding, sustainable garments are not aimed at differentiated segment markets. Sustainable garments are sold under the *Join Life* label but they are not targeted to more-environmentally aware consumers. Notwithstanding, Inditex has identified the higher interest in *Join Life* for children, due to parents' association of organic fibres with healthier garments.

Join Life garments can be bought by customers without realising that they are acquiring environmentally-friendly clothes. Those garments have a label which indicates that they belong to the collection, together with technical information about fabrics composition. At present, *Join Life* collections are mainly sold in Zara stores, but in 2017 Inditex spread them to Oysho and Massimo Dutti.

FIGURE 6. INDITEX BRANDS



Source: Inditex

3.1.1.3 Customer Relationship

Customer relationships vary from transactional to personal assistance. In principle, Inditex brands interact with their customers on a transactional basis. However, shop assistants are always in stores willing to help during the sales process. Social networks are also a channel that allows for interaction between the different brands and the customers. Sales teams play a key role in listening to customers' suggestions and demands and transferring this information regularly to Inditex decision makers.

Hence, customers are at the centre of Inditex decisions. Inditex success is highly dependent on creating attractive and responsible fashion, able to satisfy customer demands right on time.

3.1.1.4 Channels

Inditex uses direct channels: physical and online shops. Nowadays, the most important channel is direct sale in physical stores. They are usually located in very nice boulevards of cities and their architecture and interiors are carefully designed to match with customers' profiles. However, in the last few years, the online channel has been growing up strongly. In 2017 online sales grew up to 10% of all Inditex sales. Last year, Inditex websites received 2,418 million visits and 249,000 online orders were delivered. The online channel is an especially important channel for *Join Life* sustainable collection. It is through this channel where the most sustainable garments are advertised and easily clear to be identified by customers.

Integration between both channels is a strategical axis of Inditex. Distribution to physical stores occurs twice a week and online orders may be satisfied from both logistic centres and physical stores. The full integration of stock between both channels allows for more efficient and effective deliveries. Of course, logistics and distribution are strongly supported by ICT developments.

3.1.1.5 Revenue Streams

Inditex revenues are transaction revenues, meaning that they are based on a one-time payment for the garments. As indicated above, *Join Life* garments are not priced premium and currently the value proposition does not include any added value service.

3.1.1.6 Key Resources

The development of *Join Life* sustainable collections of Inditex relies on the following key resources:

- **Physical resources:** infrastructure for efficient direct and reverse logistics is the most important resource of Inditex. In relation to the circular journey of Inditex, it is important to highlight the advantage of online deliveries to take-back old clothes to logistic centres. Another key resources are the nice stores strategically located at city centres all over the world.
- **Human and intellectual resources:** they are related to key activities of Inditex, namely design, logistics and distribution. Designers and their design skills are crucial in developing new fashion based on sustainable and circular raw materials. In this sense, Inditex makes a strong effort in training designers and buyers (brands) to increase the importance of sustainable raw materials. Sales teams also play an important role in transmitting fresh information regarding customers' demands and needs. This information is key for producing and quickly delivering short collections to stores. All of the value chain strongly depends on a very high responsive logistics system, for which the development and implementation of specific software is a key resource.
- **Financial resources:** the high capacity of Inditex to design, produce and distribute fashion would not be possible without the support of a strong financial structure. It also allows the group to invest in sustainability and transforming the business towards a more circular model.

3.1.1.7 Key Activities

- **Design:** it requires accuracy, attention to detail, analysis, instinct, insight and simple human empathy – because Inditex designers have to know and understand their customers inside out. To do so effectively they must sense changing trends and listen to daily feedback from Inditex stores and sales teams. With new styles arriving in stores twice a week, Inditex collaborative design team must show extraordinary flair and ingenuity. It can take just 3 weeks from drawing board to store. Designers are at the centre of the circular value proposition: they must make sure that Inditex garments' future life is considered during the design phase. Regarding *Join Life* garments, design is the most important activity, because it is in this stage where decisions are made that will allow for moving the whole value chain, from buyers to manufacturers and key suppliers, towards further circularity. In this sense, the company is working at present to reinforce design activities through new software development.
- **(Out)sourcing:** Inditex works with suppliers and manufacturers across 53 different countries to source most of their products –57% of them are close to headquarters in Arteixo (A Coruña, Spain), mainly in Spain, Portugal, Turkey and Morocco. The circular journey of Inditex builds upon supporting more sustainable cotton production and wood-based fibres coming from FSC® forests. The company is also making efforts to close the loop, i.e. to create a life cycle for its products in which resources are used efficiently and nothing goes to waste. In this sense, Inditex pushes garment manufacturers and plays an intermediary role to support the process of producing more sustainable threads and fabrics.
- **Quality and health control:** Inditex has developed an extensive system of product testing and quality control, underpinned by some of the toughest health and safety and sustainability regulations in the industry. With the help of partner universities and laboratories, Inditex



applies rigorous standards to the entire manufacturing process and to all the items their brands sell and the suppliers they work with –including chemical suppliers and their subordinate facilities. The List, by Inditex, analyses and classifies over 20,000 chemicals used in manufacturing, involving 28 external laboratories. The Picking programme is Inditex tool for checking the quality of its products. First they assess each item’s potential risks during the design stage. Once in production, they take samples for analysis and testing in accredited laboratories. A detailed study of the results establishes whether items meet Inditex standards. The company is becoming quicker at establishing the quality of more products using fewer resources, and without compromising on the commitment to the health, safety and environmental quality of its fashion.

- Logistics and distribution: Inditex refreshes physical and online store collections twice a week and can deliver orders to stores anywhere in the world within 48 hours, and often sooner. A system this flexible and responsive has to be highly efficient. The 10 Inditex logistics centres are in Spain, close to the head offices of its eight brands. Almost a half of the production is also carried out in proximity, cutting travel distances, and reducing energy consumption and emissions.

All of the key activities represent the supply chain management and orientation towards customers of Inditex business model. Information and time are the two key variables that enable the success of the business model. Those characteristics are also important for the Inditex circular journey.

3.1.1.8 Key Partners

- Garment suppliers: Inditex has just 11 own factories. The manufacturing of clothes is outsourced to a large number of supplier all over the world. The key partners in relation to *Join Life* sustainable collections are a smaller number of suppliers, which are, at the end responsible for sourcing renewable and recycled raw materials. Those suppliers are actually supporting circularity of Inditex through investment in upcycling technologies and design of more circular clothes.
- External contractors: transportation is entirely outsourced to external distributors. They play an important role in the general business model of Inditex, allowing the quick response to fashion customers’ demands.

3.1.1.9 Cost structure

The most important costs for Inditex are related to garments and transportation. Own labour costs are mainly related to staff working at the headquarters and the sales teams at stores all over the world.

The success of Inditex business model is clearly linked to a very cost-efficient infrastructure and control along the supply chain. In the transition towards a circular business model, the recovery of fabrics leftovers is considered to save costs, since the upcycling of these materials will allow for reducing manufacturing and transportation costs and thus final garments costs.

3.1.2 The Value Network

The value network created to support the circular business model of Inditex on a very broad level is shown in Figure 7. First of all, there is the network of key suppliers, integrated by garments suppliers and the recycling industry. Sourcing of circular fibres and design of more sustainable garments allows for creating a more sustainable value proposition. It is important to remark that an 8.4% (153 out of



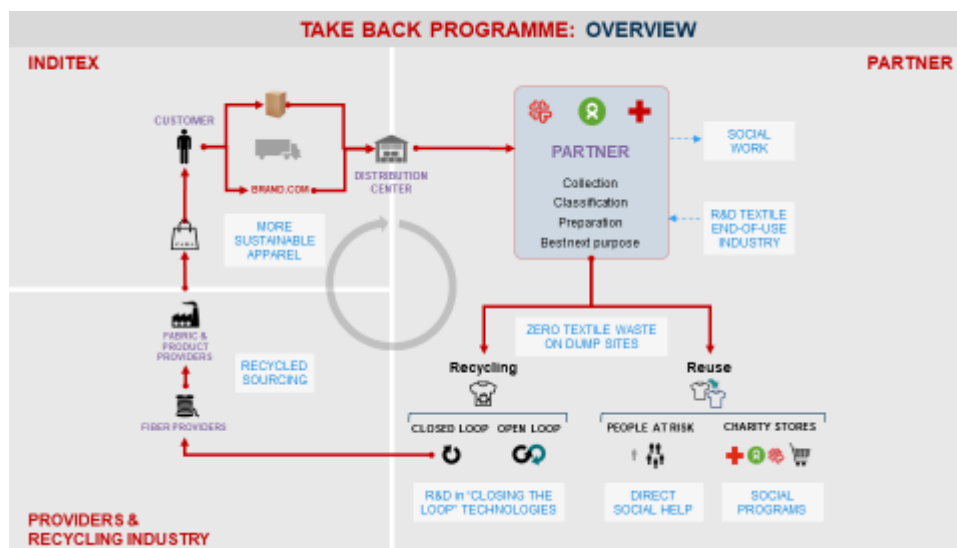
1,824) of Inditex suppliers are *Join Life* suppliers. In addition, a 62.7% of *Join Life* suppliers are located close to Inditex headquarters¹.

The value proposition focused on the sale of sustainable garments is enriched with the take-back program. Based on that, customers can deliver their old clothes to the network of collectors that Zara stores have implemented, as well as directly to the delivery person of online orders.

Old clothing is donated to local non-profit organisations; NGOs lorries pick up donated clothes to their own facilities, where they sort them and try to extend their useful life through second-hand sales or to close the loop through recycling. Those garments that enter the recycling process have the possibility to be used in other different supply chains or in the same garments' value chain.

Inditex supports non-profit organisations (e.g. Cáritas, Red Cross, Intermon Oxfam) and key suppliers to implement a sound local recycling industry. In this sense, it collaborates with research centres and other companies to develop and improve recycling technologies.

FIGURE 7. INDITEX VALUE NETWORK



Source: Inditex

3.1.2.1 Material Flow

The material flows associated to Inditex approach towards a Circular Economy are shown in Figure 8. *Join Life*, the sustainable collection of Inditex, is made of fibres such as organic cotton, Tencel™ Lyocell, recycled materials (cotton and polyester), and more innovative fibres such as Refibra™ Lyocell. In 2017, Inditex brand Zara sold more than 888.3 million pieces of clothing. From them, 67.9 million pieces of garments belonged to the *Join Life* collection, which represents the 7.64% of the total garments sold by the brand. *Join Life* garments made of organic cotton represented the 6.2% (54.7 million pieces of clothing); those made of Tencel™ Lyocell represented a 1% (8.9 million units).

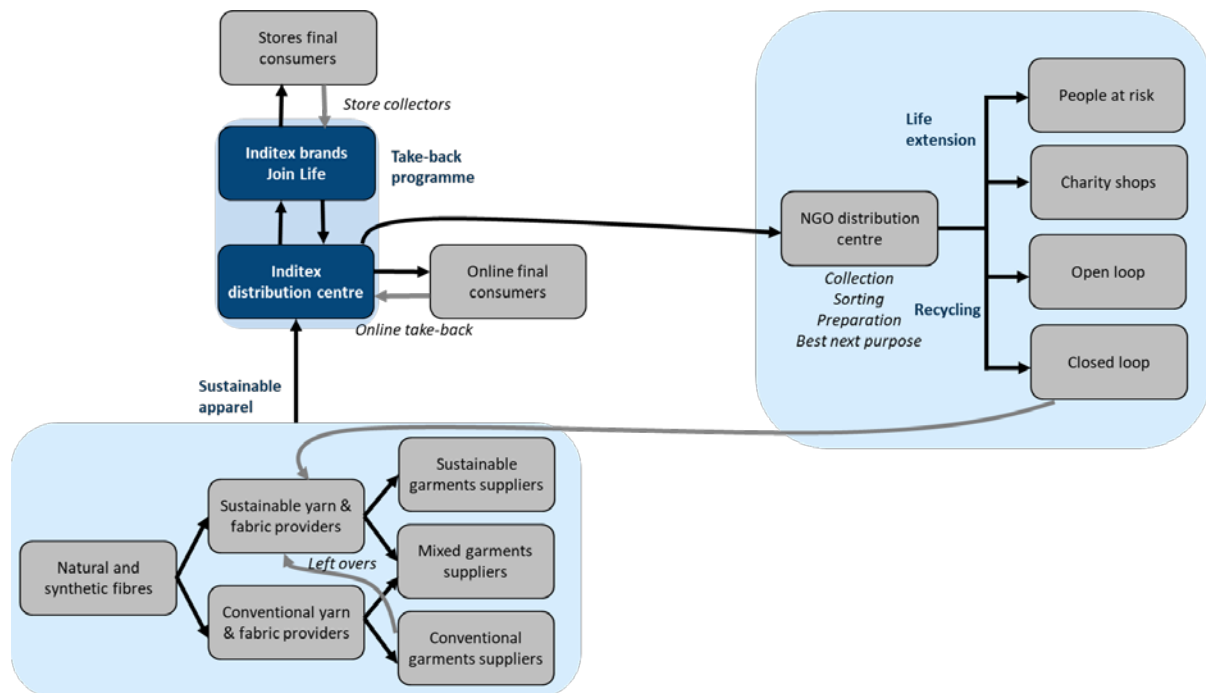
Another important aspect of material flows has to do with fabrics leftovers. Approximately, a 15% of fabrics are wasted in garments manufacturing facilities. Inditex is taking stock of fabrics leftovers to use them directly or through upcycling in new fabrics. In this sense, it plays a key intermediary role putting in contact garments suppliers which end with high amounts of fabric leftovers (mainly cotton

¹ Inditex defines close suppliers as those located in Europe, Turkey and Morocco.

fibres) with other key partners, such as Lenzing. This last company is then able to produce innovative fibres such as Refibra™, based on a mixture of recycled cotton and Tencel™ Lyocell.

With regards to the take-back programme of Inditex, “Closing the loop”, in 2017 Inditex collected 256 tonnes of used clothes. Approximately a 75% were collected in physical stores while the remaining 25% came through the online collection service. In 2017, collection of old clothes by the Spanish NGO Cáritas amounted to more than 12,000 tonnes. Approximately a 54% was reused through Cáritas donations and second-hand shops. Another 40% was derived to recycling in the insulation sector.

FIGURE 8. INDITEX MATERIAL FLOWS (CIRCULAR SOURCING & TAKE-BACK PROGRAMME)



Source: own research

3.1.2.2 Value Flow

The value flows associated to Inditex approach to a Circular Economy are shown in Figure 9. The circular business model of Inditex is highly dependent on key partners. This has to do with the nature of Inditex as a major retail fashion group, mostly depending on third party suppliers. Therefore, the circular business model of Inditex starts with some key suppliers, which are responsible for sourcing more sustainable fibres, based on Inditex buyers' orders. Thus, two different roles of suppliers can be identified:

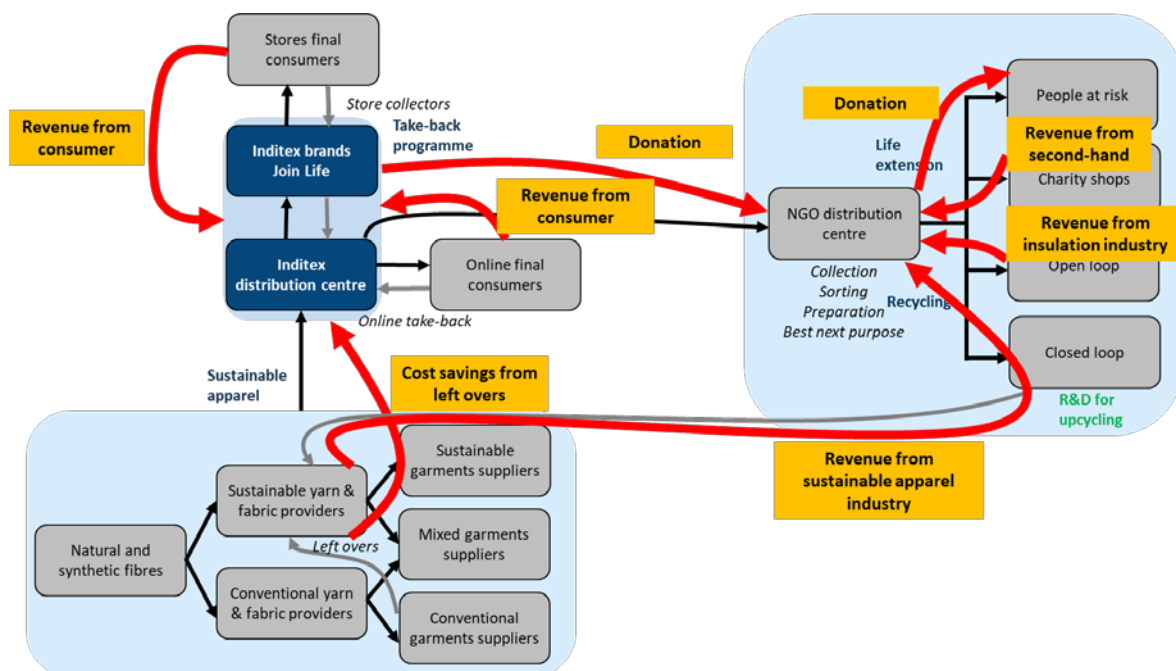
- Sourcing, designing and manufacturing more sustainable yarns, fabrics and garments. Key suppliers keep a very tight relationship with Inditex and test new fabrics and garments in their facilities.
- Providing fabrics leftovers for upcycling to other key partners. They are conventional garments manufacturers that provide materials to companies specialized in textile upcycling.

As far as the take-back programme is concerned, it is also important to identify key partners at the garments end-of-life. Non-profit organisations, such as Cáritas, Red Cross, Oxfam and the China Environmental Protection Foundation, among others, receive customers' used clothes collected by Inditex in its stores and through online services, for free.

Collaboration with those organisations meet three objectives: apart from lengthening the useful life of textile products and footwear, in Spain they follow a model that allows for the integration of people at risk of social exclusion, as well as free distribution of garments to people in need. Inditex supports social projects of those organisations, which are able to offer new jobs to people at risk of social exclusion.

For instance, last year Cáritas launched the “Moda Re” project, which aims at managing the complete life cycle of used clothing, including collection, sorting, reusing, recycling and second-hand sales. This is a social enterprise project, which supports the creation of social jobs, besides taking care of the environment.

FIGURE 9. INDITEX VALUE FLOWS (CIRCULAR SOURCING & TAKE-BACK PROGRAMME)



Source: own research

In addition, Inditex has partnered with MIT-MISTI (International Science and Technology Initiatives) in order to foster research to improve recycling of textile fibres from used garments and developing new fibres. The aim is to reduce the impact on natural resources and promote circular economy. Collaboration with a number of universities in Spain and industrial initiatives such as the Sustainable Apparel Coalition (SAC) is one of the key strategic axes of Inditex. By setting different partnerships, the company undertakes R&D and innovation projects in different areas.

It should be noted that Inditex does not have a specific R&D department. Staff working at any area in the company, especially those on the Sustainability Department, are supposed to be updated with the last trends in the sector. Thus, when a project is considered interesting, the employee can present it to the company for implementing it.

With regards to Circular Economy, apart from the program launched in collaboration with MIT, which is aimed at Spanish universities, Inditex is a member of the Sustainable Apparel Coalition (SAC). The company participates in forums organized by the SAC, where it can find the necessary partners for implementing specific research and innovation projects.

Moreover, the company has traditionally partnered with the Galician system of universities. Along the years, several research departments have been involved in Inditex projects.

3.2 CEBM within the business context

After presenting the main features of Inditex business model that are supportive of a Circular Economy, the aim of this sub-section is to provide inferences and insights on how the contextual factors characterising Inditex can be mapped out with CEBM patterns and characteristics. The different contextual aspects were assessed by Inditex informants as factors that affect or that might potentially affect in the future the implementation of circular business models built on the *Join Life* sustainable collection and the take-back programme.

International Trade Agreements allow some countries tax free exporting of clothes to Spain and to other markets. Import and export taxes are so important that a company can deviate its whole production from one country to another one just if trade taxes are null. In case trade agreements were much stricter due to Circular Economy and taxes to import and export were higher, this could be an important barrier. In other case, this factor could be an enabler, i.e. duty free to a country for Circular Economy products would be beneficial. This factor is related to the recent **prohibition of China on waste imports** to the country, especially cardboard and plastics for recycling. Since most polyester recycling facilities are located in China –glycolysis technology is mainly located in China and Japan, the recent ban will affect the possibility of using recycled polyester as a circular raw material in new garments. As a consequence, Inditex is focusing its efforts on promoting mechanic recycling of renewable fibres, which is mostly carried out in Europe. In addition, the dependence on recycled polyester from far countries like China might mean higher prices for this material in the future.

The current **price of linear raw materials** is an important barrier to circular models. Inditex's *Join Life* processes are competing against very cheap raw materials, such as conventional polyester. At the moment, it is very difficult that any garment made from recycled fibres will be cost-competitive in relation to conventional raw materials. In addition, another important cost-related barrier is the necessary **scale of recycling**. Shredding machines need to process a big amount of waste for a recycling process to be profitable. Thus, garment manufacturers need to have a **great buying capacity** in order to recycle a big amount of waste.

The development of appropriate technologies is also crucial to obtain price-competitive recycled fibres, namely cotton. Due to present **limitations of technologies**, obtaining recycled cotton may be very expensive depending on the nature and quality of waste (used clothing). While very long cotton fibres allow for getting the best quality, cotton obtained from basic clothes offers worse quality. In addition, the recycled thread that is obtained needs to be intertwined more times for, which leads to higher costs for a kg of fabric. The percentage of recycled fibre in garments usually ranks from 20-40% and for some fibres it is possible to achieve up to 52% upcycled.

With regards to mechanical recycling, an additional important barrier is the **different legislation on clothing composition labelling** from country to country. The EU legislation is the toughest and requires indicating the specific composition of the garment. The drawback with mechanical recycling is that using several clothes with different compositions, after mixing, shredding and creating a new yarn, makes it difficult to know the specific composition. The EU, China, Israel and Turkey are the strictest countries regarding clothing composition labelling.

Recycled materials also need to be improved in order to not affect the quality of the product. With mechanical recycling, limitations occur because the fibre is shortened, which requires to mix recycled



fibres with a high percentage of virgin raw materials. On the other hand, recycled polyester is more durable but it causes many problems due to microplastics dissemination. In this sense, Inditex is working with Lenzing, a European leading fabric manufacturer that has developed Refibra™. This is a new fibre obtained through chemical processes, based on a mix of recycled cotton (from leftovers of Inditex suppliers) and wood fibre. Refibra™ is made based on the technology of Tencel™ fibres. The TENCEL™ fibres won the EU prize for the eco-friendliest production process thanks to its closed loop production of 99.7% and its use of bioenergy. Wood as a renewable raw material from sustainable forest plantations is another important aspect when it comes to the sustainability of Tencel™ fibres. Refibra™ now combine both advantages - the recycling of cotton scraps and the most sustainable of fibre technologies.

Another issue regarding technologies has to do with **health and safety concerns**. In order to guarantee that recycled fibres are free of harmful substances, it is necessary to know exactly the composition of the waste materials, based on an accurate traceability system. This is easily controlled by Inditex when waste comes from its own suppliers. However, it could represent a problem if recycling factories use clothes and fabrics leftovers from very different origins.

At the moment, **environmental awareness of consumers and demand for environmentally-friendly** garments is low, but growing. Inditex sees a clear demand *Join Life* collection in child clothing, since parents associate organic cotton with child health benefits. Moreover, *Join Life* is still being created as a brand by Inditex, though collections are growing fast. The *Zara Join Life* commercial offer increased 60,5% in 2017, from 42.3 million garments in 2016 to 67.9 million garments in 2017 accounting for 8% of garments sold by the brand.

There are other factors that, due to their current weak development, are seen as light barriers for circularity. **ICT infrastructure** that allows tracking of clothing is missing at present and it means some difficulties with regards to recycling. The only reference recyclers have on used clothing is the label. For that reason, Inditex is focusing efforts on using post-industrial waste, which has a known composition, no other fibre contamination, zips, seams, etc. The company is currently working through demonstration projects to develop a microchip that allows for identifying garments at the end of its life span.

Raw materials information services are not common in this industry. A pilot platform has been developed by Circle Amsterdam. It works like a market place where companies inform about their waste, and recyclers can buy the waste. However, at the moment Inditex does not consider it to be a determinant of circularity. The company manages fabrics leftovers and used clothing based on its own infrastructure and internal capabilities, as well as working with partners.

Among the contextual factors that are seeing as opportunities and might indeed pave the future way towards circularity in Inditex business model, the informants identify some factors. One of them would consist of setting **objectives for a textile circular economy at the EU level**, and specially, if specific objectives were set on the national level. In general, setting clear **objectives for resources and energy efficiency**, together with regulation about waste, energy and efficiency are seeing as drivers, which mainly affect the garments' manufacturers.

As a member of the Sustainable Apparel Coalition (SAC), Inditex is actively participating in the European Union works towards the creation of an **efficiency label for footwear**, which is planned to be available in 2022. The company has committed to test this label in its stores.

End-of-life regulation and take-back programmes are also regarded as important factors that can foster circularity. However, opposite to **EPR collective schemes**, which works at France, Inditex is more interested in creating its own collecting and recycling system.

Greenpeace and other **NGOs campaigns** in relation to the fashion industry are very demanding and usually their agenda is set earlier than regulations. At present, NGOs are putting much pressure to oblige manufacturers to manage their own waste. Those organisations are leading the way, identifying what types of materials must be avoided, developing studies about environmental impacts and toxicity of different fibres and processes, etc. Specific NGO campaigns, for instance those focusing on chemicals in the supply chain, are very effective and strongly influence the public image of leading brands such as Inditex. Thus, NGOs actions are considered an important driver for Inditex actions.

Due to the high dependence of the fashion industry on natural resources, **rising prices of raw materials** (fibres and water) would be a major driver for circularity. Taken into account the fashion industry low margins, prices of raw materials highly influence decision making in the fashion industry. For instance, an increase in oil prices would lead fashion companies to search for recycling polyester, used clothing and garments with defects. Recycling represents an opportunity for savings in several dimensions: from transportation to dyeing and water. In addition, energy costs due to recycling may be reduced by using renewable energies, such as it is the case of some key Inditex suppliers. Therefore, facing a probable scenario of expensive raw materials, recycling would be an opportunity for the fashion industry.

The **race towards Circular Economy among competitors** in the fashion industry is evident. The fact that competitors (e.g. H&M, C&A, M&S and so on) are also taking action in CE is acknowledged as a key driver by Inditex. In comparison to other competitors, the differentiated strategy of Inditex is based on manufacturing and setting a recycling industry close to its headquarters in Galicia (Spain).

The **existence of a specialised recycling industry** close to Inditex headquarters and logistics centres is considered an enabler for circularity. Key Spanish thread and fabric suppliers of Inditex have traditionally done recycling and developed strong skills in the field. However, the development of a recycling infrastructure is still in development. In relation to that, Inditex is investing in R&D that will support the recycling processes of key suppliers. In addition, it is supporting very ambitious R&D projects of Spanish universities with the MIT and has also financed a project of the Spanish NGO Cáritas for clothing sorting and shredding.

That said, the development of **appropriate technologies for CE** will be a very important enabler. At the moment, the fashion industry is limited, mainly due to the results that can be obtained from mechanical recycling technologies. Those recycling technologies are of utmost importance because their impact on the environment is qualitatively lower in comparison to chemical recycling, though they require high energy use. Moreover, mechanical recycling is mainly implemented by the European industry and will allow for reducing dependency on non-renewable raw materials (e.g. polyester) and virgin fibres as well as closing the loops in geographically close areas.

Moreover, **stricter regulation on chemical harmful substances** than present regulation will be a factor because it influences the production stage of the supply chain.

Financial terms and R&D funds are considered an important enabler towards supporting fabrics and garment manufacturers, which are key stakeholders in the development of circular economy in the fashion industry.

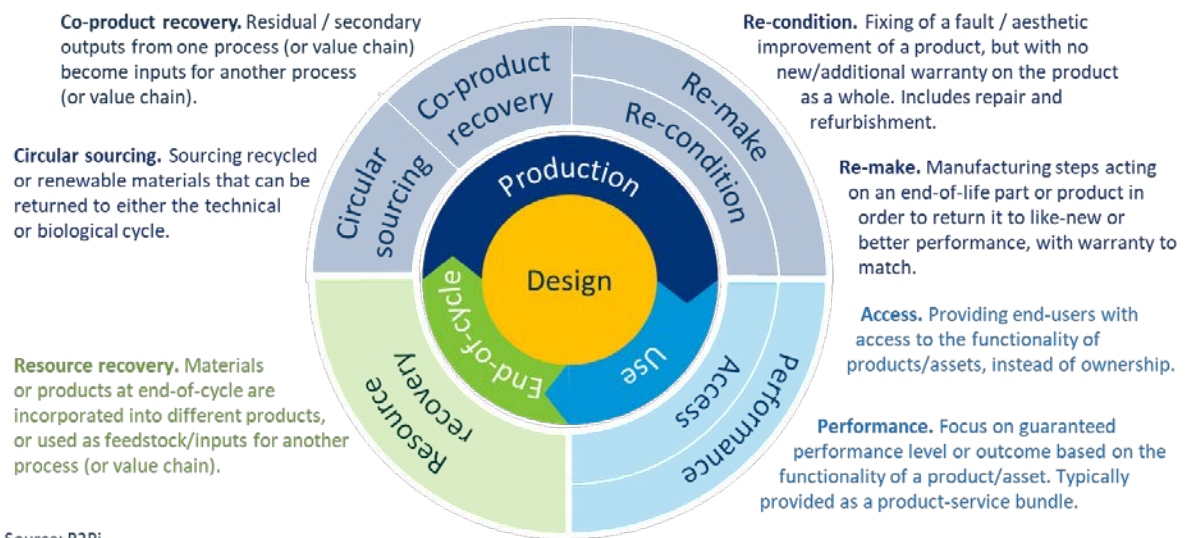
Training is considered a somewhat important enabler. Inditex works internally with designers and buyers, and externally with suppliers. In this sense, it will roll out training in circular design to all designers by 2020. In general, the company agrees that the consumer needs a more general education about sustainability and it would be also important for people working in the clothing sector.



3.3 Business model circularity assessment

The purpose of this section is to present an overall assessment of the business model ‘state of play’, following the seven Circular Economy Business Model patterns identified by the R2Pi project (Figure 10). Firstly, the circularity assessment, based on a circularity tool (see Annex) and discussion with Inditex informants is presented. Secondly, financial and non-financial outcomes of the business model are analysed, based on the case, literature and discussions with Inditex informants. The sub-section is closed with a discussion of the business model SWOT as well as enablers/ barriers to transitioning towards circular economy.

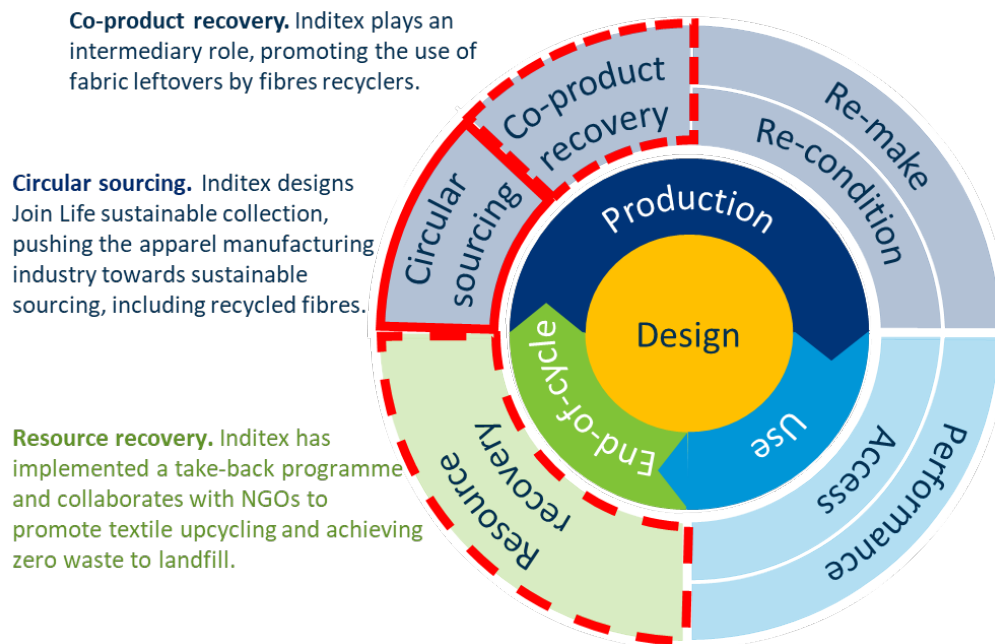
FIGURE 10. CIRCULAR ECONOMY BUSINESS MODEL PATTERNS



3.3.1 Circularity assessment

The analysis of Inditex business model presented so far (see 3.1.1. Business model overview) allows for identifying features of several of the Circular Economy Business Model patterns, namely “Circular sourcing”, “Resource recovery” and “Co-product recovery” (Figure 11).

FIGURE 11. CEBM PATTERNS IMPLEMENTED BY INDITEX



Source: own research

3.3.1.1 Circular sourcing

Inditex is working to develop a more sustainable sourcing business model and has created the *Join Life* collection. *Join Life* labelled garments are those that are manufactured according to more sustainable raw materials and fibres, as well as adopting the best processes.

A number of actions are being taken by the company to increase the circularity from the first stage of the garment life. This starts in the Design stage. Inditex designers are using a wider ranging of fibres and thinking of more sustainable apparel design. Afterwards, Inditex brands push suppliers by demanding more sustainable garments.

3.3.1.2 Resource recovery

Inditex has implemented a take-back programme, which allows customers to leave their used clothes in collectors placed in all Zara and Bershka stores in Spain as well as to deliver them when they receive online orders at home. Moreover, Inditex also supports third sector organisations in a number of markets to set urban garments collectors. All clothes collected are donated to targeted NGOs, which classify, clean, repair and recycle them. Inditex also supports these organisations through R&D projects aimed at improving upcycling of fibres and developing new recycling technologies.

3.3.1.3 Co-product recovery

Inditex supports circularity of the value chain by linking specific suppliers and using their fabrics leftovers to produce new fibres that re-enter the garment manufacturing processes afterwards. Moreover, Inditex own factories have trialled a re-make model: some garments that are not sold in stores come back to those factories to be redesigned.

In what follows, a circularity assessment is presented. The description corresponds to the views of the Inditex informants, who were firstly asked to score each of the items included in the circularity assessment tool (see Annex) at present and as a medium term objective, and secondly were asked in an in-depth interview to discuss the reasoning behind the scores.

3.3.1.4 Product circularity assessment

The assessment of the business model circularity of Inditex reveals interesting aspects (see Figure 12). The product assessed is a piece of garment, a product that is externally manufactured and sold by Inditex brands. The Circular Business model strongly depends on the design and composition of the garments. Thus, regarding the product circularity assessment, at present, Inditex has a strong control on materials and chemical composition of those materials. The company scores high on the use of recycled materials, from both own suppliers and third parties and still plans to go further in the coming years. In this sense, the plan is to be less dependent on external resources and try to recycle as many garments as possible. The current status of technologies is making this plan progressing rather slowly.

Inditex delivers stocks and garments with defects to non-profit organisations, which are able to remanufacture and refurbish clothing, and sell them in their second-hand shops. To a certain extent, garments that do not succeed in Inditex stores can be sporadically taken back to its own factories to be remanufactured. The company is planning to extend remanufacturing operations to stocks.

Inditex interest in rapidly renewable materials is important. At present, more than 50% of raw materials are natural fibres (cotton, wool) and artificial ones that come from FSC and PFC forests (viscose, lyocell). However, the company is aware of the dependence on non-renewable materials, such as polyester, due to the technical requirements of garments performance (e.g. characteristics suitable for sportswear).

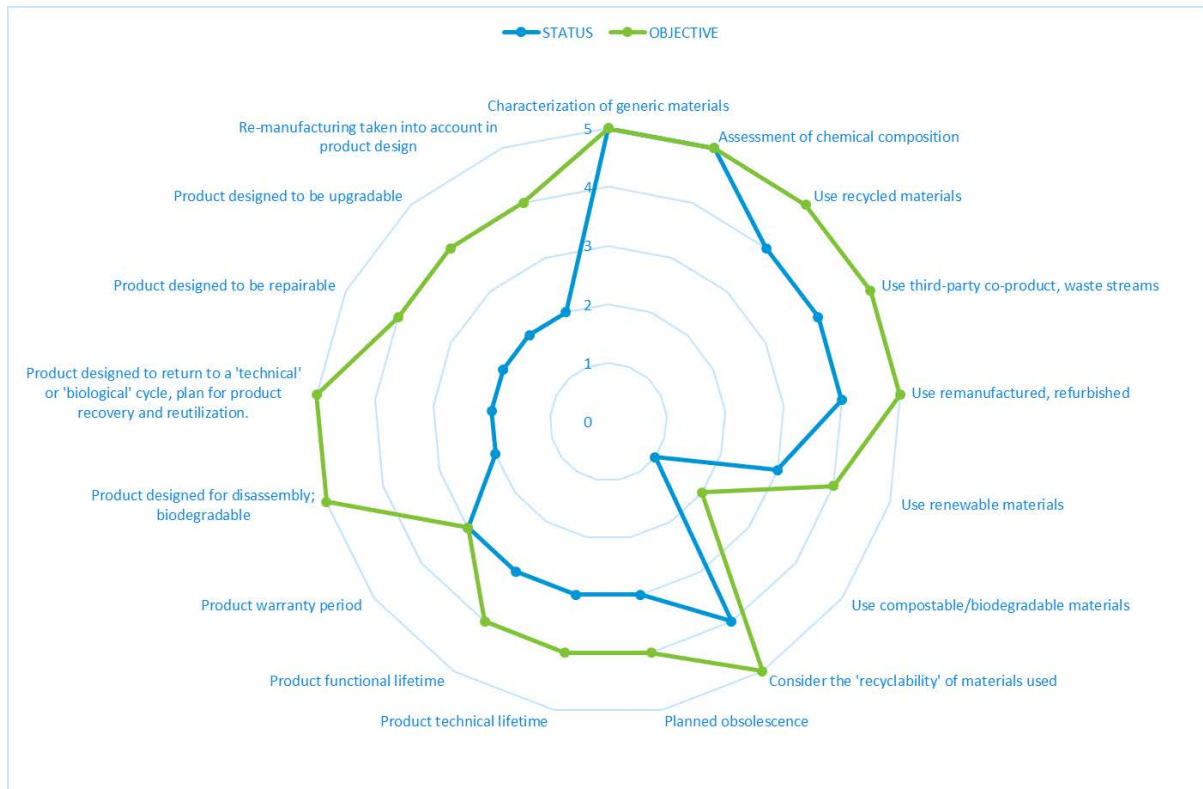
Using compostable / biodegradable materials in garments is not a priority objective. Inditex currently focuses efforts on durable and recyclable clothing. Rather than producing compost after use, their vision is that energy used in manufacturing fibres may be better optimised through recycling and entering the fashion industry once again.

Lifetime of Inditex garments is usually on the industry average and the company sets to increase quality as an important objective. In the same vein, the warranty is on the average.

Inditex recognises that it is a long way to design its garments according to disassembly, recovery and reutilization. They are scored as very important objectives in the mid-term. Garments design is also starting to set repairing, upgrading and remanufacturing as moderately important objectives.



FIGURE 12. PRODUCT CIRCULARITY ASSESSMENT (STATUS AND OBJECTIVE)



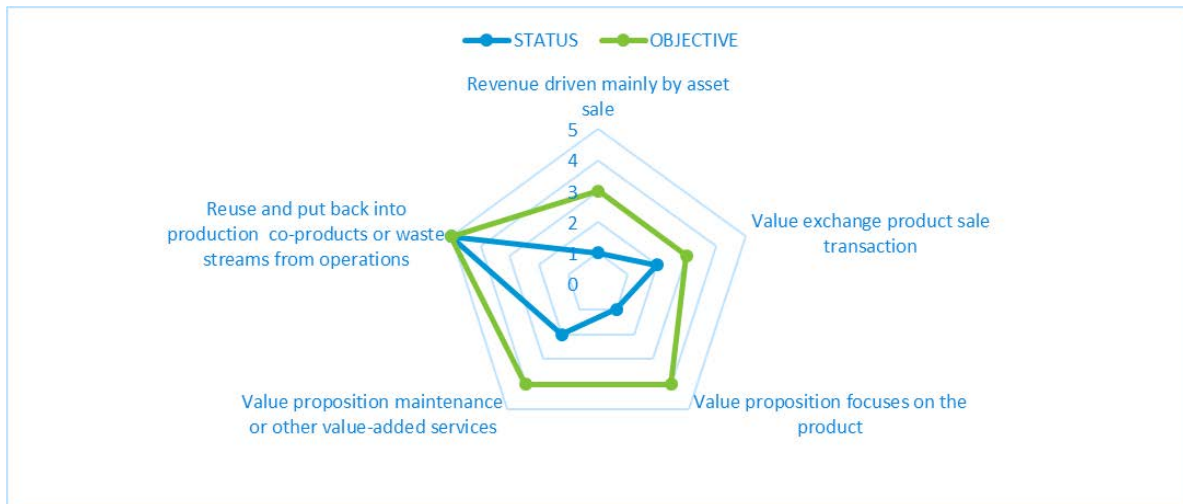
Source: own research

3.3.1.5 Business model circularity assessment

As far as the business model is concerned (see Figure 13), Inditex revenues are clearly dependent on product sale. Notwithstanding, the company is clearly aware of the tendency towards demanding value-added services and foresees to make progress in those aspects in the mid-long term: including new services in the value proposition and getting a new source of revenues. The newest service is RFID mirrors, which the company has launched in some of its stores and it will allow customers to have a virtual outfit experience before making a purchase decision.

A key aspect of Inditex business model, centred around logistics and distribution, is to reuse the co-products and waste streams of their own operations (e.g. reusing alarms and hangers, recycled cardboard boxes for online deliveries). However, if the garments are considered in this assessment, Inditex business model has a large opportunity to develop this further.

FIGURE 13. BUSINESS MODEL CIRCULARITY ASSESSMENT (STATUS AND OBJECTIVES)



Source: own research

3.3.1.6 System circularity assessment

The assessment of the system circularity focused on the fashion industry in which Inditex business model is embedded is shown in Figure 14.

Clothing tailoring has been a traditional business model for centuries. Despite having experienced up and downs, the sector is actually enjoying a new growth. The view of Inditex is that those services will go on growing in the near future.

At present, most of textile waste is down cycled, meaning that pre- and post-consumer are usually sold as filler to companies in the construction and automobile industries. Despite this option, Inditex is more interested in re-entering fabrics left overs and used clothes in the fashion industry. Other co-products and waste streams from the company (cardboard, alarms and hangers) are reused to the extent possible.

Inditex has made strong efforts in creating, in collaboration with third parties, a take-back scheme for clothing. Non-profit organisations in a number of countries are placing collectors in different urban spaces to collect used clothes. Collected clothes are managed by those organisations, for extending their life through second-hand sales and donations, as well as for recycling. Inditex's objective is to go further, trying to close the loop for their own garments (e.g. recovering and recycling exclusively Zara garments).

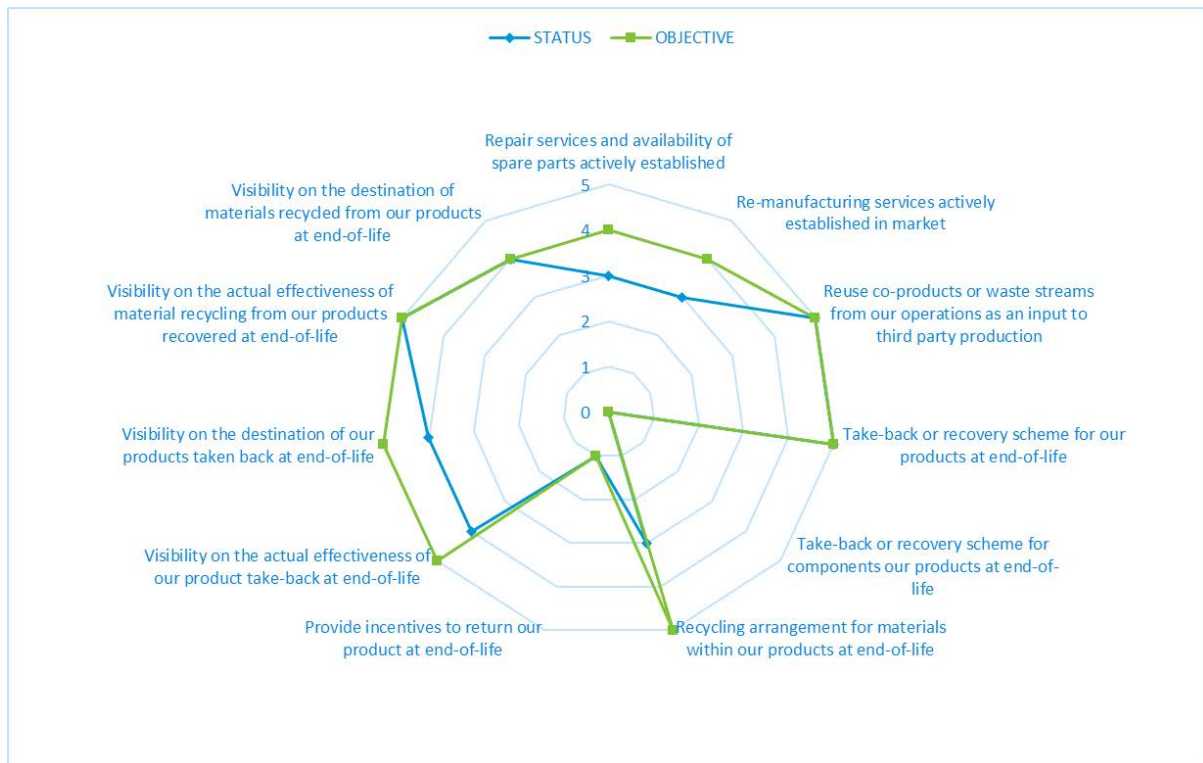
In order to make progress in the fashion system circularity, there is still a long way to create a recycling infrastructure. Key suppliers (yarn, thread, fabrics and garments manufacturers) are doing strong efforts to create the recycling infrastructure and Inditex is investing in R&D specially focused on exploring and developing the best opportunities for fibres upcycling.

Inditex does not provide any incentive to customers to return used clothes through their takeback scheme, neither it is an objective. The company view is that it is fair not to provide an economic incentive. The emotional incentive has to do with the 'feel good factor' linked to donating their clothes to NGO partners to help them raise money and to encourage customers to extend the life of their clothes.

Inditex has practically full visibility on the actual effectiveness of their product take-back, as well as on their destination. Data reported from stores and non-profit organisations is collected periodically and published in the company Annual Report. In addition, Inditex is working with non-profit organisations

to exactly know the destination of textile waste (downcycling, second-hand, upcycling). At the end, the objective of Inditex is to achieve a mass balance, equalling the amount of clothing sold with the amount of clothing collected.

FIGURE 14. SYSTEM CIRCULARITY ASSESSMENT (STATUS AND OBJECTIVE)



Source: own research

3.3.2 Financial and non-financial outcomes assessment

Generally, the majority of the fashion industry impact is caused on the raw material levels and by the fabric and component suppliers. The CEBM patterns that have been analysed in previous sections represent the early steps of Inditex towards a new model aimed at reducing those impacts.

Due to the complexities of Inditex value chain, it is difficult to offer an accurate representation of financial results. A comparison for one t-shirt, made of three different fibres, from the less to the most sustainable one, allows to see that differences in financial outcomes are mainly due to the raw materials costs, and the spinning industry costs (energy and labour costs). Since Inditex assumes the difference in prices for *Join Life* collections in comparison to conventional products, at present, the higher costs of more sustainable fibres are absorbed by the company. This is due to the commitment of the company with sustainability, so losses in some products are balanced with profits made with other collections.

Besides financial outcomes, the model can also have important environmental and socioeconomic outcomes along the value chain. The qualitative assessment shown in Table 1 is based on discussions with Inditex staff regarding those three key patterns of the circular business model: sourcing more sustainable raw materials –natural and recycled ones, taking advantage of fabrics leftovers and fostering the textile upcycling industry while supporting non-profit organisations.

For Inditex, the transition towards circularity is a strategy aimed at guaranteeing the resilience of the company in a future scenario of raw materials scarcity and strong volatility of prices. That means that

the sustainable proposition meant by *Join Life* collections is just the starting point of a future really sustainable fashion industry. The same benefit applies to *Join Life* suppliers. Due to the strong power of retail and textile brands, resilient suppliers will be those that are able to shift towards circular business models as early as possible. Moreover, key suppliers that are at present leading the transformation, will get the benefits of the technological leaders, through the development of innovative products and new processes. The use of more sustainable fibres such as Tencel™ lyocell, for instance, allows for improving efficiency in comparison to cotton.

The circular business model will be necessarily linked in the future to closing loops in proximity. Besides opportunities to develop a strong recycling industry, there is a necessity to develop new business models based on extending the use life of garments, through repairing, refurbishing, exchanging and second-hand sales. In this sense, the role of non-profit organisations may be key to develop those new business models. At the moment, non-profit organisations such as the Spanish *Cáritas*, are achieving clear socioeconomic benefits based on take-back programmes implemented by companies such as Inditex. The donation of old clothing supports the social projects of *Cáritas*, which are aimed at creating new jobs for people in marginal situations as well as to provide access to clothing to all segments of consumers, through donations and second-hand sales. In addition, through *Cáritas* business model, the fashion industry increases its circularity and sustainability: it extends the life of garments and guarantees that an important percentage of old garments are recycled, thus avoiding landfilling.

For instance, until 2017 the *Moda-Re* project by *Cáritas* has allowed for the setting of 80 donation and second-hand stores operating in Spain, 3,800 collecting points, 23 distribution centres and three centres for integral management based on the last technological advances. According to *Cáritas*, the project has created 750 social jobs in Spain and has united 1,000 volunteers.

Based on this business model, the benefits for consumers come through their contribution to a sustainable goal. As it is defined, *Join Life* customers do not pay a premium price. That means that they are able to get access to more sustainable garments at the same price as a conventional one. In addition, new fibres such as Tencel™, are healthier and safer than others. Moreover, customers contribute to the circularity of the fashion industry when they deliver their old garments. Thus, the business model, focused on circular sourcing and setting take-back schemes, fosters the development of a local recycling industry.

The benefits are wider for the whole society. Firstly, circular sourcing allows to diminish the importance of non-sustainable fibres, with its wide impacts on ecosystems. Benefits can translate into a better and healthier environment. Secondly, the development of a local recycling industry, brings new job opportunities.

TABLE 1. NON-FINANCIAL OUTCOMES

	Focal company (Inditex)	Partner 1 (Key supplier)	Partner 2 (Non- profit organisation)	Customer	Societal benefits
Socio-economic	Profitable growth business (resilience in a scenario of prices volatility and raw materials scarcity)	Profitable growth business (resilience in a scenario of prices volatility and raw materials scarcity)	Stability New opportunities for social employment Possibility to broaden the number of topics addressed	Sustainable fashion at competitive price	More local jobs Organic cotton growers Opportunities for entrepreneurship

	Improved brand reputation	Differentiated product Technological leadership Commitment to sustainability equals improving Inditex's trust (customer's loyalty)	(environment, local development...)		
Environmental	Reduction of environmental footprint	Reduction of environmental footprint	Reduction of environmental footprint	Contribution to sustainability goal	Improved resource productivity Reduced emissions Reduced landfill

Source: own research

As far as the environmental impacts are concerned, available data does not allow to make an accurate quantification derived from more circular sourcing. Notwithstanding, it is worth noting that improving the ratio of sustainable fibres may achieve environmental benefits, by reducing acknowledged impacts of traditional fibres along the whole life cycle (Dodd & Gama Caldas, 2017):

- Cotton ecotoxicity impacts associated with the production and use of fertilisers and pesticides, as well as impact of water irrigation;
- Climate change and ecotoxicity impacts associated with synthetic fibre production (acrylic, nylon, polyamide, polypropylene);
- Climate change and ecotoxicity impact of energy use to manufacture man-made cellulose fibres such as viscose;
- Raw material and feedstocks, such as timber and bamboo, required to manufacture cellulose fibre; as well as soaping agents and softeners associated with viscose;
- Process energy and ecotoxicity associated with the fabric weaving, finishing and printing and dyeing stages of production;
- Energy and ecotoxicity associated with the use phase of textile products due to the influence of fibres on washing energy and detergents.

Provided that Inditex is the fifth biggest worldwide consumer of organic cotton, it is worth noting the advantages of this fibre. In comparison with conventional cotton, organic cotton avoids the use of industrial fertilizers and pesticides and performs much more better from a LCA perspective, in categories such as global warming potential, acidification and eutrophication (Dodd & Gama Caldas, 2017). However, organic cotton has also some disadvantages: as the yield is lower by 20-50%, increased land and water may be necessary to produce it.

Inditex is also taking part in the Better Cotton Initiative, supporting a more sustainable way of growing cotton. In addition, the company is promoting cotton upcycling in collaboration with non-profit organisations and key partners such as as Lenzing and Hilaturas Ferre.



Moreover, the increasing use of innovative fibres such as Tencel™ lyocell has demonstrated beneficial features. Lenzing, the manufacturer of this fibre, has developed a closed loop process and states that its fibres lower water consumption over the life cycle and recover more than 99% of the solvent used. In addition, lyocell fibre is decomposable by biological means without leaving harmful residues behind.

There are even more innovative fibres such as Refibra™ that increase the benefits of lyocell by using cotton left overs, which helps to close the loops of the garment manufacturers.

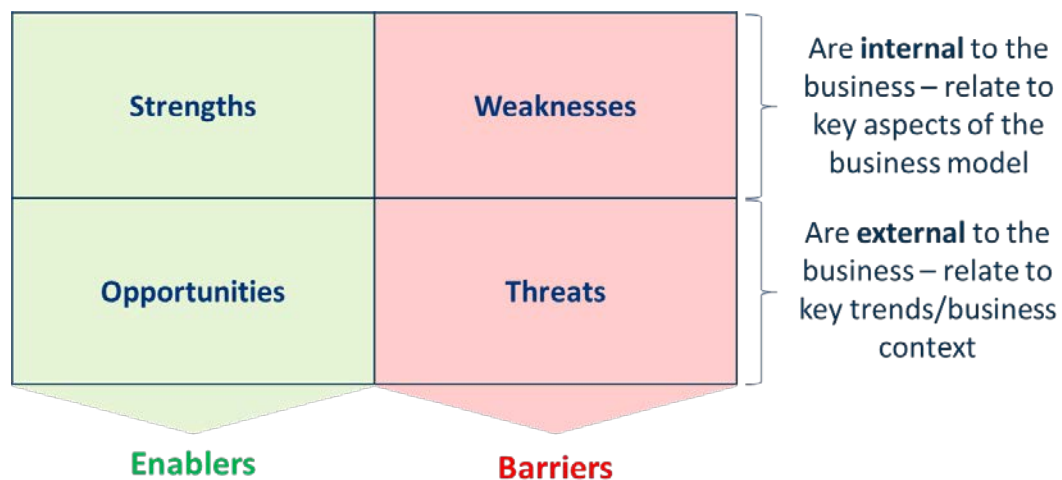
At the end of the garments value chain, social projects such as Cáritas Moda-Re allow for reducing environmental impacts linked to extended life of garments and recycling. Based on the organisation estimations, for 30,000 tonnes of clothing treated, 56 million m³ of water have been saved and 679,200 CO² emissions avoided with this project.

3.3.3 SWOT analysis

This sub-section contains an analysis of the Strengths, Weaknesses, Opportunities and Threats (SWOT) associated with Inditex business model focused on the Circular Sourcing pattern. As is customary in SWOT analyses, the Strengths and Weaknesses are internal to the case organisation's business model. Whereas, the Opportunities and Threats are external to the case organisation's business model, coming from the context in which they operate.

The purpose is to distil and highlight those key areas that result in enablers or barriers for the development of circular business models (Figure 15).

FIGURE 15. SWOT ANALYSIS FRAMEWORK



3.3.3.1 Value proposition

The value proposition of Inditex consists of selling good quality fashion at competitive prices. The capacity to fulfil all significant needs of targeted customers' segments allows the company to have highly satisfied customers. There is a lot of opportunity to tap further 'sustainability value' for customers and Inditex has started its journey to circularity, trying to capture sustainable value from co-products (fabrics left overs) and waste (used garments).

3.3.3.2 Cost / revenue

Revenues

Inditex margins are close to other similar competitors (they are higher in comparison to very low-cost fashion and lower in comparison to luxury brands). An important strength of the business model is that revenues are predictable; the company's success strongly relies in having a good control on

avoiding inventory build-up. However, each sale requires additional effort in the form of bringing new collections to the stores very often.

Costs

The cost structure of Inditex business model is considered a strength. The company tries to keep costs predictable. It has high economies of scale and they are mainly variable and widely aligned with customer segments. Due the high consumption of raw materials and energy and to the importance of labour, variable costs are the most important costs.

3.3.3.3 Operating model

Key activities

Key activities of Inditex are design, logistics and distribution. Through those activities, the company is able to design, manufacture and distribute to stores new collections twice a week, which implies a highly coordinated and efficient system of clothing production and distribution. It is supported by a high degree of vertical integration and proximity sourcing. Those activities are really hard to copy by competitors and are considered an important aspect to support the circularity of their business model. The only weakness is related to the fact that those activities need significant investment in order to scale with growth.

Key resources

Designers' skills are one of the key resources and they are of utmost importance for the circular economy. For garment designers, the circular economy means a broader range of options. Recycled and innovative fibres imply adapting design to achieve good quality as well as environment-friendly fashion.

Likewise, key resources in logistics are also important for reverse logistics, hence for circularity. Moreover, since the circular value proposition at present does not change significantly the conventional value proposition, the model will highly rely on very efficient logistics systems. Those key resources (including physical assets and intangible products, such as software) are very difficult to copy by competitors, not only because of the high required investment but also because of the knowledge developed.

At present, key resources are a weakness of the circular business model due to the fact that circular technologies are still being developed. This means that higher R&D efforts need to be made in order to create more circular raw materials (for instance, at present there is not any available technology for recycling mixed fibres, such as cotton with elastane).

Key partners

Key Inditex partners are the garment manufacturers. They represent the most important part of the business model. Highly tiered and committed garment manufacturers allow for success: besides the suppliers' production capacity to respond to Inditex strict time requirements, manufacturers also provide important knowledge.

Generally, the most advanced suppliers take complete control upstream. Inditex environmental and sustainability department promotes the use of circular fabrics among the design and purchases department. It is the responsibility of the supplier to get sustainable raw materials. Inditex also plays an intermediary role by putting in contact suppliers that have the specific fabric leftovers they need for manufacturing new fibres.

Factories in Galicia, Portugal and Morocco, where garments manufacturing is outsourced, are taking much more importance lately. This is due to the interest of Inditex in having a stricter control of the supply chain and especially for high fashion clothes that are more time sensitive, such as dresses, jackets and coats. Those factories have a strong experience and high control and quality standards.



Key partners are seen as clear enablers of circular economy. Even that R&D projects are undertaken by Inditex in collaboration with universities and research centres, the outcomes are tested with key suppliers. A very tight relationship with Inditex makes key suppliers willing to be involved in innovative projects. For instance, one of the key suppliers, Hallotex is a company that has made its own shift towards circular economy along the last two years. In this sense, key partners really contribute value to Inditex (for free).

Customers also offer some value for free. Feedback provided online points out to the satisfaction of customers with *Join Life*. In this sense, Inditex brands that are not so advanced in including sustainable collections are now starting to feel the customers' demands. Moreover, one of the key factors that explain Inditex success are related to the constant information that comes, instantly record of shops purchases and from information that shop assistants regularly communicate to Inditex.

3.3.3.4 Customer interface

Customer segments

The customer interface clearly reveals the strengths of Inditex. The renowned brand, Zara, is the paradigmatic example of a business model orientated towards customers. Along the years, the brand has demonstrated its ability to fully understand the value potential created for customers. With a very particular marketing strategy that does not include advertising it is able to achieve high customer loyalty, low customer churn, a high rate of new customer acquisition (new stores open each year in different countries) and a growing market.

Customer channels

Direct channels represent another strength of Inditex, which matches with customers' segments. Physical stores are considered a pillar of the marketing strategy: they are very well located in centric boulevards of cities and they offer an experience to their customers. Indeed, Inditex invests regularly in its stores to adapt them to the customers' styles. The online channel, which is growing importantly in the last years, also has an appealing aesthetic to customers. Therefore, customer channels are considered a strength by Inditex.

Customer relationships

Inditex brands have quite strong relationships with their customers. 10,000 people may enter an Inditex brand store each day. That means that personalized customer attention is not the model. However, shop assistants and online attention are always available for satisfying customer demand for information when required. The idea is that the shop assistants should be as they were not there, but when the customers need them, they can find them. However, there are some very loyal customers who even know the stores' managers and keep a very fluid relationship regarding new collection comings, etc.

Inditex view is that customer relationships are well aligned with customer expectations. The only weakness of the model in this sense is that customers are not locked into long-term relationships.

The framework below (Figure 16) summarises the SWOT analysis, including internal and external factors affecting Inditex and the fashion industry, centred around the Circular Sourcing CEBM. From an internal point of view major strengths of Inditex's business model rely on their skills for design and ability to foresee fashion trends, the strong position in the value chain, with capacity to influence key suppliers, as well as the financial stability of the group. There are also important weaknesses with regards to a broader Circular Economy paradigm: in essence, the great success of Inditex is based on the linear model of quick and repeated product sales; the circular sourcing business model is highly dependent on the existence of key suppliers that share the same vision; circular garments are costlier to produce than conventional garments in the current scenario.

When the context is taken into account (see section 3.2), it seems that opportunities are there for an environmentally sound fashion industry. Global fashion leading companies are joined in initiatives towards a more sustainable industry. The status and direction of technological developments are also pointing towards the support for a circular shift. However, the success of the incumbent fashion model, together with uncertainties regarding garments and waste trade, as well as current low cost scenarios represent threats to a quick advance to Circular Sourcing.

FIGURE 16. SWOT ANALYSIS OF INDITEX BUSINESS MODEL RELATED TO CIRCULAR SOURCING CEBM

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Skills of designers • Ability to foresee fashion trends • Power in relation to suppliers; capability to influence the whole supply chain • Strong relations with NGOs in take-back programs • Key suppliers committed to sustainable sourcing • Financial stability • Company's commitment to sustainability, innovation and the Circular Economy 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Business model focused on quick and repeated product sales. Profits depend on consumption of new garments and not on durable and high quality garments • Added value services are not in the value proposition • Inditex's strategy towards the circular economy is not currently taking into account innovation concerning its business model; it depends on supply chain management and manufacturing, hence on suppliers • Higher costs of circular garments
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • New technological developments (fibres, recycling technologies, ICT, traceability) • EU and national governments favorable to setting Circular Economy roadmaps and objectives • Fashion industry favorable movement towards a Circular Economy (competition among leading fashion companies) • Availability of financial terms and R&D funds for CE projects • Customers' increasing awareness and sensitiveness to sustainability (new demands of millennials) • NGOs campaigns on aspects related to Circular Economy (chemicals use) 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Dissimilar textile regulation among countries • Low prices of virgin raw materials and high costs of circular materials – lock-in in the linear model • Slow progress on key technological developments (new fibres, recycling technologies) • Limited recycling industry (chemical recycling is not a strong industry in Europe) • Uncertainty of consequences of the China Sword 2017 in relation to obtaining recycled polyester fibres

Source: own research

3.3.4 Final assessments

An in-depth analysis of Inditex business model related to the Circular Sourcing pattern has been presented throughout section 3. The environmental and sustainability department of Inditex plays a key role in defining the strategical choices of the company. The commitment with a more sustainable business model has to do with the vision of the company from a CSR and ethical perspective. Inditex informants also indicate that raw materials potential scarcity and prices volatility, together with NGOs campaigns are taken into account in decision making related to Circular Economy. Moreover, the company is aware of further developments that will probably change the fashion industry in the future, such as garments as a service model. However, Inditex informants think it will take a long way, especially because the customers are not ready yet. And even in the case some leasing models succeed, they will coexist with traditional business models based on selling and purchasing garments.

The analysis of Inditex circular business model indicates that the way forward for the group will be focused on pre-consumer waste as a key stage towards circularity. Collecting only used clothes from own Inditex brands might be the next step, in order to improve tracking and closing the loop. The aim would be to generate a gallery of waste with known compositions and adopt circular design elements that may be sorted and easily recycled.

In the next paragraphs, the final assessment will be focused primarily on the Circular Sourcing CEBM pattern and only complimentary on the Inditex case.

The Circular Sourcing and Co-Product Recovery (especially taking advantage of manufacturers left overs) CEBM can be replicated across the industry and easily drive further circularity in the fashion industry. Indeed, a number of leading worldwide companies are doing similar businesses and promoting joint initiatives with this goal. Moreover, the role of NGOs and customers is especially important for extending and closing the loops. The donation of used clothes fulfils a twofold objective in a Circular Economy: to extend the lifecycle of garments (donations, second-hand) and also to guarantee that waste is recovered at the end of life. In this last case, the challenge for the industry lies in promoting upcycling of fibres.

That said, there is still large room for going further in circularity in the fashion industry. Starting with product design, there are opportunities for designing more durable garments, modular designs, improving processes efficiency, etc. This also would be facilitated by increased awareness of consumers regarding the impacts of their fashion consumption patterns.

Based on the assessment of the CEBM conducted in this report, the main enablers and barriers are derived. Enablers / drivers are the following ones:

- A favourable policy environment: this is still limited, since the textile & garments industry has still not been targeted by the key programmes on Circular Economy by EU and most national governments. However, the general commitment with a circular paradigm at the EU level points out to the creation of framework conditions that will affect the textile industry too.
- A favourable industry environment: a number of initiatives have been launched along the last few years by the renowned brands of the fashion industry. Those initiatives represent a factor that clearly pushes the industry as a whole towards a new circular paradigm. Notwithstanding, this “circular fashion pulse” should be taken seriously and not like a passing fad that ends in testimonial actions.
- New technological developments: innovative fibres, recycling technologies, ICT applications for the industry will re-define the textile and garments sector in the near future. A number of technological applications on the product and process levels will be key for enabling full circularity of this industry.
- Collaboration with NGOs: since the fashion industry success is based on bringing new collections to the market, the way forward to circularity needs to extend the life of used clothes by implementing different strategies (sharing clothes, reuse/second-hand). The existence of social projects aimed at promoting job opportunities for people at risk of exclusion; second-hand markets and donation projects represent an important enabler of those business models.
- Recycling industry and infrastructure: there is a clear need for taking advantage of the amount of tonnes of old clothing that are generated. Though currently limited, the existence of a recycling industry will be a key enabler of the Circular Sourcing CEBM pattern.
- A potential scenario of natural resources scarcity (water, land for fibres cultivation) and raising prices of raw materials.
- Existence of a segment of consumers that are aware of the fashion impacts and that are willing to move to more sustainable patterns will be an important driver of further circularity.

There also some factors that emerge as clear barriers to the Circular Sourcing pattern in the fashion industry:

- The current raw materials market: the cheap availability of virgin raw materials such as polyester, cotton, viscose, etc. does not incentive the shift towards more sustainable fibres. In addition, the limited quality of fast fashion garments also limits circularity potential. In this



sense, it is only through the commitment of fashion brands with a more sustainable model that this barrier will be overcome.

- The slow development of recycling technologies: many recycling processes are still dependent on manual work, which increases the recycled fibres costs. Especially mechanical recycling presents still a number of limitations, which clearly demands for increasing R&D efforts.
- Differences between different countries' regulation and trade agreements may make it difficult for global companies to transport textile waste through certain borders in order to upcycle it wherever the technology allows them to. Moreover, it is preferable that the use of waste for upcycling be as close as possible to where the waste is generated. This requires an infrastructure and local industrial capacity, which at the moment may not be available, hence acting in the short term as an obstacle.
- The currently good results of the dominant fashion consumption model mean that there is no high pressure from the producer or consumer to switch to the circular model.



4 Discussion & Conclusions

This report has presented the approach of one of the world's largest textile fashion companies, Inditex, towards the adoption of a more circular business model. Although the group has a sustainability and innovation strategy that frames its commitment to the circular economy in a holistic manner, that is, with actions in each of the phases of the textile value chain, this report has focused mainly on the CEBM pattern identified as “Circular sourcing”.

The key activities of Inditex are design, logistics and distribution of garments. The group does not have manufacturing as its main activity, but it does maintain a vertical integration structure with external suppliers very close to it. From the design and purchases departments, Inditex is making an important commitment to the supply of garments made with more sustainable raw materials and based on more environmentally friendly processes, as well as taking steps, in collaboration with other stakeholders in the textile value chain, to extend garments life and close the loops. In this sense, Inditex's circular business model also includes the collection of used garments at the end of their useful life. Thus, in recent years it has placed collectors in its stores, and has established agreements with non-profit organisations in Spain and other markets to donate the old garments. Also, through the delivery of its orders online, the company offers the possibility of collecting used garments from customers, and thus taking advantage of reverse logistics.

Based on the thorough analysis of both the internal and external factors of Inditex business model, a series of enablers for Circular Sourcing CEBM have been identified and are summarised below:

- The commitment of the textile industry to change the fashion model towards the use of more sustainable and circular raw materials, as well as to design according to these raw materials and the use of fabrics leftovers or used garment parts;
- The technological possibility of new raw materials such as lyocell;
- The existence of a network of suppliers (yarn, fabric and garment manufacturers) committed to the circular model;
- The existence of a local textile waste recycling industry that is and will be even more important in a future scenario of virgin raw materials scarcity;
- The commitment of social organisations with the collection and treatment of used clothing for reuse, second-hand sale or recycling;

The model also presents a series of obstacles, which prevent greater circularity, at least at present time:

- The success of the linear model, given the good results of the large textile companies and consumers still eager for the latest models at affordable prices;
- The state of development of certain key technologies for upcycling is still weak or under development; it is also the case with new, more sustainable raw materials;
- The market price of conventional raw materials is low and makes the manufacture of sustainable garments comparatively expensive.

The Circular Sourcing CEBM is replicable and transferable to the extent fashion companies have the capacity to influence suppliers, which are the ones that ultimately make the effort to procure more sustainable raw materials. Also the model based on the recovery of garments at the end of life is replicable and transferable, in fact, it is already a trend among many fashion brands worldwide. However, there is still a long way to go between the recovery at the end of life and the upcycling of these used garments back into the fashion industry's productive cycle. Perhaps there are more possibilities in the co-product recovery model, which consists of taking advantage of the homogeneous leftovers from the factories to obtain new fabric. In this case, the technological



possibilities, together with a strong commitment from manufacturers and coordination efforts by fashion leaders such as Inditex, could be important steps towards further circularity in the sector in the short to medium term.

A number of recommendations to promote the adoption and diffusion of the Circular Sourcing CEBM for other businesses and policies may be recommended based on insights from this case study.

Business guidelines

- Importance of addressing the circularity of the fashion industry from a holistic perspective, including in any strategy all relevant stakeholders: raw material suppliers, key yarn, fabric and garment suppliers, retailers, consumers and non-profit organisations;
- As currently defined the circular model, the extension of the useful life of the garments is key, and this can be addressed from the design of more durable, modular and repairable garments as well as through reuse, second hand and donations;

Policy recommendations

- Despite the industry's significant environmental impact, the textile sector is not currently included as one of the key priority sectors of the Circular Economy in the European Commission's roadmap, although there are some plans at state level. It is important that specific targets are set for the reuse and recycling of textiles;
- Incentives to limit the concept of fast fashion: aimed at introducing eco-design and durable garments;
- Setting prices and regulations that truly reflect the total manufacturing costs of garments: raw materials, water, energy, labour;
- Educational and awareness-raising campaigns aimed at encouraging consumers to adopt more responsible models for the purchase and use of clothing.



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Appendix A: Inditex business context analysis tool

DRIVER						Please, rank the following according to how much of a driver / barrier you think they represented for implementing your CEBM (put an X where appropriate)	BARRIER					
Not at all important	Slightly important	Moderately important	Very important	Extremely important	N/A		Not at all important	Slightly important	Moderately important	Very important	Extremely important	N/A
				X		CE roadmap / initiative at the national / regional / local level						
X						Setting of end-goals and monitoring (CO2, noise, movements) at the national / regional level						
X						Activity permit (license)						
		X				Warranties law (e.g. second-hand products)						
X						Intellectual property rights (e.g. components susceptible of being reused)						
						International trade agreements (e.g. requirements in certain markets)						X
						Dramatic change in a target market regulation (e.g. banning the use of plastic bags in China)				X		
						Competition regulation (e.g. positive discrimination for CE products is not permitted in public procurement)	X					
X						Public subsidies that support linear economy (e.g. subsidies to fossil fuels, car purchase incentives)						
				X		Resource efficiency targets, requirements of reusing percentage of components and raw materials in new products						
				X		Waste regulation, recycling regulation, water regulation, energy regulation and choice restriction						
				X		End of life regulations						
				X		Mandatory take-backs						
				X		Extended Producer Responsibility						
				X		Material and design standards (national and across industries)						
				X		Controls and penalties (e.g. controls and sanctions on the use of specific products)						
				X		Fiscal measures (green taxes): land-value taxes, value-extracted tax, product levy and recovery rewards						
				X		Differentiated VAT rates (e.g. products with high recycled content included among VAT reduced goods)						
X						Green public procurement (e.g. performance procurement by public sector)						
	X					Public subsidies for eco-innovation, eco-design						
	X					Public support for demonstration and commercialisation of innovation in Circular Economy (technology platforms, pre-commercial procurement, lead markets)						
						Availability or prices of raw materials that support linear economy (water and energy included)				X		
				X		Availability or prices of raw materials and products that support CE						
			X			General economic "health" of incumbent companies in a sector (crisis, decline, stability, growth)						
				X		Competition trends in the market						
			X			CE-supportive business environment (technology providers, advanced services, eco-design businesses...)						
			X			Relevant and expanding CE / environmentally oriented market segment in the country / region						
						Market purchase capacity				X		
				X		Suitable infrastructure for recycling and recovery / other (e.g. supporting shared use)						
			X			IT-infrastructure (supporting transparency and information sharing; joint collection systems; match-maker mechanisms)						
				X		Extensive raw materials information service						
			X			Funding opportunities / venture capital for CE-related investment						
		X				(Green) lending programmes from banks						
				X		Appropriated technologies for CE						
		X				Major technological trends in the sector; new sectoral developments						
		X				R&D capacities and strengths (Innovation agency, university research groups supportive to CE)						
X						R&D capacities and strengths in green energy						
		X				Public support for CE-related R&D (new materials, new products/services, supply chain resource tracking)						
		X				Training in CE-oriented activities						
					X	Rural vs urban distribution of population						
					X	Ratio of young vs old population						
						Social attitudes towards waste and recycling in the country						X
						Social attitudes towards eco-friendly production and consumption in the country						X
						Social attitudes towards water use in the country						X
						Social attitudes towards energy use in the country						X
				X		Social movements pressure regarding environmental problems (NGOs, civil society)						
				X		Preference for green brands / products, services by consumers in the country						
				X		Perception of environmental problems by businesses in the sector / country						



Appendix B: Inditex business model circularity

Circular economy status and objectives

		S = Status today O = Objective within 3 yrs							
		Tending towards LINEAR model	N/A	1	2	3	4	5	Tending towards CIRCULAR model
PRODUCT	1	We have not characterised the identity of our products in terms of generic materials (e.g., aluminum, polyethylene, steel etc.)							SO The product is 100% characterized by its generic materials (e.g., aluminum, polyethylene, steel etc.) and/or product categories and names (e.g., coatings, paints, detergents, seating furniture).
	2	We have not assessed the chemical composition of materials (recycled materials included) used within our product.							SO We have fully assessed the chemical composition of all materials (recycled materials included) used within our product.
	3	We do not seek to use recycled materials in our product						S	O We maximise the use of recycled materials from pre- or post consumer waste in our product and source these from outside of the manufacturer's facility.
	4	We do not seek to use third party co-product or waste streams as an input to our own production						S	O We maximise the use of third party co-product or waste streams as an input to our own production
	5	We do not seek to use remanufactured, refurbished, or repaired parts and components within our products						S	O We maximise the use of remanufactured, refurbished, or repaired parts and components within our products
	6	We do not seek to use rapidly renewable materials in our product					S	O	We maximise use of rapidly renewable* materials in our product
	7	We do not seek to use compostable/biodegradable materials in our product		S	O				We maximise use of materials in our product that are commonly known to biodegrade or are able to undergo biological decomposition
	8	We do not consider the 'recyclability' of materials used in our products						S	O We only use materials in our products that are proven to be technically and economically recyclable (e.g. non-toxic, separatable into material streams, etc.)
	9	Planned obsolescence is built into product design					S	O	Product is designed for durability
	10	Product technical lifetime is below industry average					S	O	Product technical lifetime is above industry average
	11	Product functional lifetime is below industry average					S	O	Product functional lifetime is above industry average
	12	Product warranty period is below industry average					SO		Product warranty period is above industry average
	13	Product is not designed for disassembly to enable component/material recovery or reuse; nor is it biodegradable			S				O Product is designed to be economically disassembled enabling component/material recovery or reuse; OR is biodegradable with no further intervention needed to reclaim the nutrients
	14	Product is not designed with the intention to return to a 'technical' or 'biological' cycle, nor is there a defined plan for product recovery and reutilization.			S				O Product designed to return to a 'technical' or 'biological' cycle, and a plan for product recovery and reutilization is defined.
	15	Product is not designed to be repairable			S			O	Product designed to be economically repairable (by user or third party)
	16	Product not designed to be upgradable			S			O	Product designed to be upgradeable, adapting to changing customer needs (e.g. by being modular, via software upgrades, etc.)
	17	Re-manufacturing is not taken into account in product design			S			O	Product is designed to be economically re-manufactured
BUSINESS MODEL	18	Revenue driven mainly by asset sale		S			O	Revenue driven mainly by monetising usage and/or performance of asset	
	19	Value exchange mainly focused on driving a product sale transaction (e.g. competitive price)			S		O	Value exchange focuses on customer lifetime benefit (including reducing/controlling cost of ownership; asset performance)	
	20	Value proposition focuses on the product		S				O	Value proposition is positioned as a service (including product/service bundle)
	21	Value proposition does not include maintenance or other value-added services			S			O	Value proposition includes bundled maintenance or other value-added services
	22	We do not seek to reuse and put back into our production the co-products or waste streams from our operations.							SO We maximise the reuse of co-products or waste streams from our operations, putting them back into our production.
SYSTEM	23	Repair services and availability of spare parts are not actively established					S	O	Repair service network and spare parts are actively established in the market
	24	Re-manufacturing services not actively established in market					S	O	Re-manufacturing services actively established in market (own, or third party)
	25	We do not seek to reuse co-products or waste streams from our operations as an input to third party production (e.g. through direct or indirect supply relationships)							SO We maximise the reuse of co-products or waste streams from our operations by supplying them to third parties as an input into their production (e.g. through direct or indirect supply relationships)
	26	We do not have in place a take-back or recovery scheme for our products at end-of-life (own or via a third party)							SO We have in place a take-back or recovery scheme that fully covers all our products at end-of-life (own or via a third party, e.g. EPR arrangement)
	27	We do not have in place a take-back or recovery scheme for components our products at end-of-life (own or via a third party)	X						We have in place a take-back or recovery scheme that fully covers all components from our products at end-of-life (own or via a third party)
	28	We do not have in place a recycling arrangement for materials within our products at end-of-life (own or via a third party)				S			O A recycling infrastructure is widely available for this type of product, and the material is already commonly recycled in practice with no special disassembly required
	29	We do not provide incentives to return our product at end-of-life		SO					We provides incentives to return our product at end-of-life (e.g. deposit, exchange, cash)
	30	We have no visibility on the actual effectiveness of our product take-back at end-of-life						S	O We have full visibility on the actual effectiveness of our product take-back at end-of-life
	31	We have no visibility on the destination of our products taken back at end-of-life						S	O We have full visibility on the destination of our products taken back at end-of-life
	32	We have no visibility on the actual effectiveness of material recycling from our products recovered at end-of-life							SO We have full visibility on the actual effectiveness of material recycling from our products recovered at end-of-life
	33	We have no visibility on the destination of materials recycled from our products at end-of-life							SO We have full visibility on the destination of materials recycled from our products at end-of-life

Notes

6 'Rapidly renewable' is defined as being harvested in cycles of 10 years or fewer, or from controlled growth forestry plantation such as FSC and PEFC]



Appendix C: Inditex Circular sourcing CEBM strengths & weaknesses

Business model diagnostic

		Weaknesses					Strengths					
		N/A	1	2	3	4	5					
Value Proposition												
1	Our value proposition leaves significant customer segments' needs unmet						X	Our value proposition fulfils all significant needs of target customer segments				
2	Customer satisfaction is low						X	Customer satisfaction is high				
3	Our value proposition has no network effects						X	Our value proposition has strong network effects				
4	Our charging and pricing models don't meet customer needs and expectations						X	Our charging and pricing models effectively meet customer needs and expectations				
5	We do not capture 'sustainability value' created for customers	X	X					We fully capture 'sustainability value' created for customers				
Cost/Revenue												
6	Our margins are low compared with competitors			X	X			Our margins are high compared with competitors				
7	Our revenues are unpredictable						X	Our revenues are predictable				
8	Each sale requires additional effort		X					Each sale generates follow-on recurring revenue / repeat purchases				
9	We earn no revenue before incurring costs of goods/services sold		X					We earn revenue before incurring costs of goods/services sold				
Costs												
10	Our costs are unpredictable						X	Our costs are predictable				
11	Our product cost structure is substantially higher than that of competitors				X			Our product cost structure is substantially lower than that of competitors				
12	Our service cost structure is substantially higher than that of competitors	X						Our service cost structure is substantially lower than that of competitors				
13	Our cost structure has low economies of scale						X	Our cost structure has high economies of scale				
14	Our cost structure is asset-heavy and costs are mainly fixed					X		Our cost structure is asset light and costs are mainly variable				
15	Our cost to serve customers is misaligned with customer segments						X	Our cost to serve customers is aligned with customer segments				
Operating Model												
16	Our key activities can be easily copied by competitors						X	Our key activities are hard to copy by competitors				
17	Our key activities need significant investment in order to scale with growth		X					Our key activities easily scale with growth without needing significant investment				
18	Our key activities do not fulfil the core competencies we need						X	Our key activities match the core competencies we need				
19	Our key activities poorly support circular economy within our business model					X		Our key activities fully support circular economy within our business model				
Key Resources												
20	Our key resources do not meet the needs of our business model					X		Our key resources fully support the needs of our business model				
21	Our key resources poorly support circular economy in our business model		X					Our key resources fully support circular economy in our business model				
22	Our key resources can be easily built or acquired by competitors					X		Our key resources are very hard to build or acquire by competitors				
Key Partners												
23	Key partners do not provide us with competitive advantage						X	Key partners provide us with exclusive competitive advantage				
24	Key partners poorly support circular economy within our business model						X	Key partners enable circular economy within our business model				
25	Key partners do not contribute any value to us for free				X			Key partners contribute value to us for free				
26	Customers do not contribute any value to us					X		Customers contribute value to us (for free)				
Customer Interface												
27	We do not understand the full potential value that could be created for customers						X	We understand the full potential value that could be created for customers				
28	Customer loyalty is low						X	Customer loyalty is high				
29	Customer churn is high (customer retention is low)						X	Customer churn is low (customer retention is high)				
30	New customer acquisition rate is low						X	New customer acquisition rate is high				
31	Our market share is shrinking						X	Our market share is growing				
Customer Channels												
32	Our customer channels do not effectively communicate our value proposition						X	Our customer channels effectively communicate our value proposition				
33	Our customer channels do not effectively deliver our value proposition						X	Our customer channels effectively deliver our value proposition				
34	Our customer channels are misaligned to target customer segments						X	Our customer channels are well aligned to target customer segments				
35	Our customer channels do not effectively reach target customer segments						X	Our customer channels effectively reach target customer segments				
Customer Relationships												
36	Our customer relationships are weak					X		Our customer relationships are strong				
37	Our customer relationship model(s) are misaligned with customer expectations						X	Our customer relationship model(s) are aligned with customer expectations				
38	Our customer relationship model(s) are misaligned with our value proposition						X	Our customer relationship model(s) enhance our value proposition				
39	Our customers can switch to a competitor at any time	X						Our customers are locked into long-term relationships				

