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MASTER OF SCIENCE IN MANAGEMENT ENGINEERING

SUSTAINABLE BUSINESS MODELS: AN EXPLORATORY STUDY OF THE MAIN DRIVERS IN THE FASHION INDUSTRY

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Table of Contents

Abstract

This work started with a consistent literature review with the goal of acquiring a deep knowledge about the topic of sustainability. In the specific, that meant studying what are the current sustainable practices, the existing sustainable business models, the frameworks applied, the sustainable archetypes and the drivers leading to sustainability. At the end of this phase, it was identified an integrated sustainable business model framework able to individuate all the characteristics of the company, in term of economic, environmental and social sustainability.

The literature review activity had the further goal of defining the research framework of the work, which was a case study research. Hence, two questions were identified in order to bridge the gaps detected in the literature. In particular, the goal of the research was understanding which are the drivers that bring to each specific sustainable archetype and the differences existing between companies that were born sustainable and companies that adopted it only afterwards.

What emerged was that the drivers recognized could belong to two different levels. Some drivers explain the decision of becoming sustainable, differing in case the company considered is born sustainable or not (first level). Then, after the decision of becoming sustainable, other drivers occur in the decision of adopting a sustainable archetype rather than another. Hence, the contribution of the work was understanding first what are the drivers that explain the adoption of sustainability (discriminating between born sustainable companies and non-born sustainable companies) and then, what are the drivers that explain the implementation of a specific sustainable archetype.

Abstract

Il primo passo di questa tesi è stato quello di studiare in maniera dettagliata la letteratura esistente riguardante il tema della sostenibilità, in modo da acquisire una consistente conoscenza al riguardo. Nello specifico, sono state indagate quali sono le possibili pratiche sostenibili, i sustainable business models, i framework applicati per studiarli, gli archetipi di sostenibilità e i vari driver che portano le imprese ad adottarli. Al termine di questa fase, è stato presentato un "integrated sustainable business model", capace di individuare tutte le caratteristiche più importanti delle aziende considerate, in termine di sostenibilità economica, ambientale e sociale.

Lo studio della letteratura ha avuto anche lo scopo di identificare il framework di ricerca di questo lavoro, che si è svolto come una ricerca attraverso lo studio di casi. Da questa letteratura sono emersi dei gap nella conoscenza esistente e perciò delle domande di ricerca volte a colmarli. In particolare, questi gap riguardavano la mancanza di conoscenza di quali sono i driver che portano a ogni specifico archetipo di sostenibilità. Inoltre, non era riportata nessuna informazione riguardo a possibili differenze esistenti tra imprese che sono nate sostenibili e imprese che hanno deciso di adottare pratiche sostenibili in un secondo momento.

Da questa ricerca è emerso che tra i driver identificati si possono riscontrare due livelli. Il primo è quello che riguarda i driver che portano le imprese a scegliere di essere sostenibili. In questo caso è possibile identificare driver tipici di imprese nate sostenibili e imprese che hanno iniziato in un secondo momento. A questo punto, dopo la decisione di essere sostenibili, altri driver hanno avuto ruolo nel definire quale archetipo è stato adottato.

Il contributo di questa tesi è stato proprio quello di capire quali sono i driver che caratterizzano i diversi archetipi e le differenze esistenti tra le imprese nate sostenibili e quelle che lo sono diventate in un secondo momento.

List of Figures

List of Tables

Introduction

Sustainability is acquiring continuously more importance nowadays, as the impact of the human population on the Earth is becoming more sever. Luckily, government and public institutions are starting to show a higher engagement regarding this issue, but the real impact can spread only with a change in the mindset in the industrial reality. So far, the main goal of entrepreneurs was usually related just to profit maximization, without taking into consideration the consequences of this unlimited research of richness. But this behaviour has serious impacts on the globe and continuing in such a way could lead to terrible future situations. Pollution, resource depletions, waste production are only few of the issues that could undermine the health and the well-being of the human population in the future. One big problem which hinders a real change is the existence of a diffused lack of knowledge regarding the topic of sustainability. People usually know only few basic practices such as recycling and energy efficiency, but the possibilities of sustainability applications are countless and do not regard only the environment, but also the society and the protection of the human rights. In addition, sustainability and profit are not always divergent (which is the main preconception), but it is possible to recognize many cases where the adoption of a sustainable practice contributed also to profit generation. However, if this knowledge is not shared and made public, the situation will not change so fast. Hence it is important pushing towards an increased education and involvement of the mass, so that they become aware of the broadness of the issue and all the potential applications.

Researchers can play an important role in this direction. In fact, through researching activities they can expand the existing knowledge related to practices and methods of implementations. Further, they can identify the dynamics behind sustainable behaviours, the patterns that led to responsible business and the elements that facilitated that process. In this way, they can strongly support the transition towards a cleaner and more responsible world by sharing the knowledge obtained through publications and scientific papers.

The goal of this thesis was increasing the knowledge mentioned before through a research of the dynamics and the reasons that brought to the existence of a sustainable company. Hence, starting with the identification of several sustainable business models, it was

performed a case study analysis with the objective of identifying the drivers that pushed the entrepreneurs to a business model rather than another. In this way, it was possible understanding which are the reasons at the base of the many realities belonging to the sustainable industry.
Additionally, the case study research tried to detect the differences existing between companies that were born sustainable and the companies that embraced it afterwards.

The structure of the thesis is the following: before it will be presented a deep literature review, with the goal of presenting in a detailed and comprehensive way the topic of sustainability. Hence, this chapter will touch several aspects such has the history of sustainability, the possible sustainable business models, the frameworks presented in the literature to represent and study them and much more.
After this first part, a chapter will be dedicated to the research framework adopted in the case study research and the methodology adopted. Here it is possible understating how the work was carried out and the sources of information used as input to the research process.
Finally, the third chapter will show the analysis performed on the information obtained and the results derived from the work.
Hence, a part will be dedicated to the conclusions, which will identify the contribution produced by this thesis to the literature and the implications that this knowledge can have for managers and governments.

Executive summary

Literature Review

The human being has become with no doubt a force that shapes consistently the planet Earth. Its presence is having an impact on the globe at every level and results of these impacts are phenomena such as air and water pollution, resource depletion, loss of biodiversity and acidification of the oceans (IGBP,2015). Even from the social side, the situation on the Earth is not positive. In fact, although the human being is very oriented to the production of richness, that is distributed in a unequal way, which leads to a great disparity between people living in developed countries respect those who live in the countries that still have to emerge. As the population acquired awareness of this situation, the governments started to pay more attention to these topics. Hence, the topic of sustainability started to get importance and to appear in the public discussion. Events such as the United Nation's Brundtland Commission in 1987, or the Earth Summit hold in Rio de Janeiro in 1992 started to define what sustainability is and which are the guidelines to be adopted to preserve the environment and defend the human right of all the population (UN, 1997; Brundtland, 1987).

Step by step, sustainability has acquired increasingly more relevance and also the industries started to be interested about this topic. Business models that were previously only oriented towards customer value, started including also environmental and social value in their structure. This transition happened through many sustainable innovations, which brought to the birth of several sustainable business models, that can be classified according an important and famous framework ideated by Bocken et al. (2014).

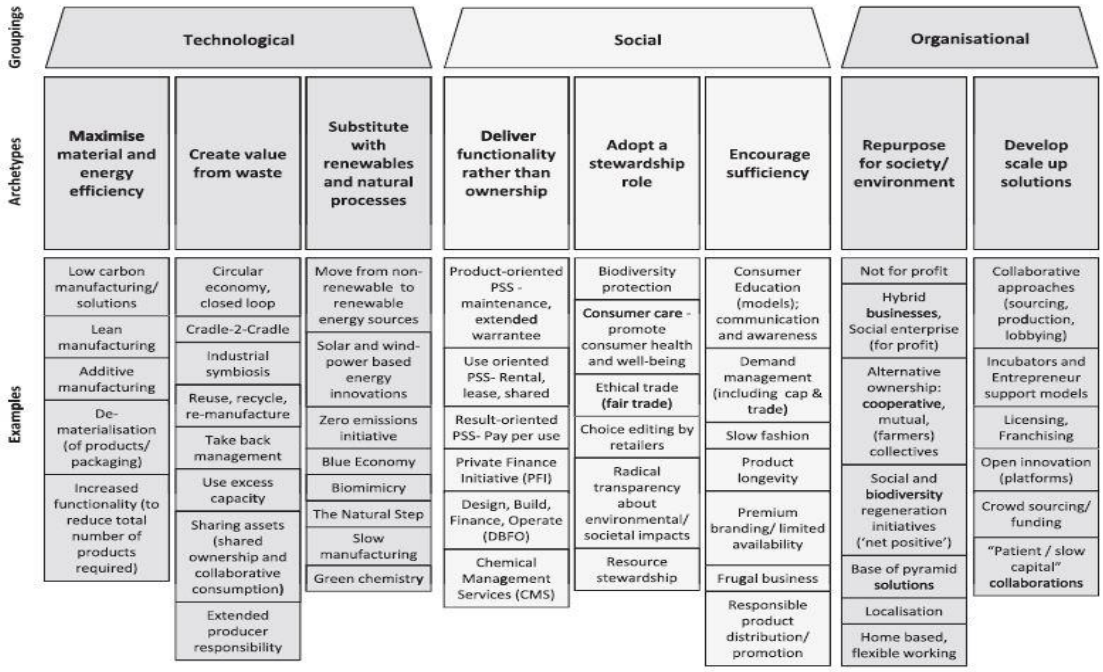

Figure 1 Sustainable Business Model Archetypes (Bocken et al., 2014)

Such classification present three main macro areas of innovation (technological, organizational and social) and eight archetypes:

- Maximize Material and Energy Efficiency: this archetype includes business models that aim at increasing the efficiency in term of material and energy consumption, thus reducing the environmental footprint.
- Create Value from Waste: this archetype includes business models that adopt disposed products as valuable input for their processes, thus reducing the demand of virgin resources.
- Substitute with Renewable and Natural Processes: this archetype includes business models that implement renewable and natural resources and processes, hence not harmful for the environment and not affecting the globe base of finite resources.
- - Deliver Functionality Rather Than Ownership: this archetype includes business models that want to substitute the current paradigm where the product's ownership is essential, with a new paradigm where the same product is enjoyed by many users and the ownership stays in the hand of the manufacturers. These business models contribute to products demand's reduction.
- Adopt a Stewardship Role: this archetype includes business models where the well-being and health of the stakeholders affected either directly or indirectly by

the activities of the company are guaranteed and protected (e.g. ethical trade, fair wages, green procurement, radical transparency)

- Encourage Sufficiency: this archetype includes business models that want to encourage sufficiency in resource consumption. Hence, the products are designed to last long, and the customer are incentivised to use the products as much as possible.
- Repurpose the Business for Society/Environment: this archetype includes business models that have as primary goal a social or environmental mission. Hence, they put social and environmental benefits' generation before the maximization of profit.
- Develop Scale-up Solutions: this archetype includes business models that want to expand the scale of certain positive practices through partnerships and collaborations.

The sustainable business models belonging to these archetypes were generated through several practices' innovation. Such innovations might be pushed by several drivers identified in the literature. Such drivers could be related to economic incentives by the government, or pressures from external actors (media, NGOs, suppliers, customer etc), or can derive from the founder personality. Such drivers are the reasons that pushes the company to start sustainable or to embrace it afterwards (Saeed et al., 2017; Tello and Yoon, 2008; Ghazilla et al., 2015; Esposito et al., 2017; Todeschini et al., 2017; Kasurinen et al., 2017; Vieisa et al., 2017).

Sustainable business models can be adopted independently of the industries considered. It is however true that some industries are more burdensome in term of social and environmental impact than others. One of the less performing is the Fashion Industry, which is cause of many negative externalities such as consistent water pollution, solid waste generations and depletions of many resources (Allwood, 2006). Additionally, it is negatively recognized also in the social side, since it is well known for offshoring the production in countries where the wages are very low and workers' rights are not respected (Hethorn and Ulasewicz, 2008). Such phenomenon depends mainly on the current trend of fast fashion, where the demand is very high, pushed by very low products prices. In order to contrast such situation, several business models belonging to the

previous mentioned archetypes were implemented. From the literature it is possible to observe that the practices that fall in the archetype of "Maximize material and energy efficiency" and in the "Develop scale-up solutions" are the rarest. "Substitute with renewable and natural processes" provides many example of applications, ranging from the adoption of cleaner processes to the ideation of new eco-friendly materials, such as hemp, viscose, flax, bamboo, organic cotton etc. (Todeschini et al., 2017; Pal, 2017). Usually, sustainable practices are certified so that providing the customer with evidence of sustainability (an example is the certificate GOTS, which proves the adoption of organic cotton). Further, under the archetype of "Crate value from waste", new materials are continuously created with recycled waste (Todeschini et al, 2017). Under the archetype "Deliver functionality rather than ownership", PSS systems creates services where the clothes are rented for a short period to the customer, which then give them back to the producer (Tukker, 2004). The archetype "Adopt a stewardship role" includes certifications, such as the already mentioned GOTS certificate, the general practices aiming at guaranteeing the well-being of the workers and the responsible procurement. "Encourage sufficiency" as the name suggest aim at reducing the consumption, through marketing and consumer education. An example is the Patagonia campaign "Don't buy this jacket" that encourages the customer to buy something only if needed (Ekvall et al., 2014). Finally, under the "Repurpose for society/environment" there are examples of companies that sell products made in underdeveloped countries or that employ and support underprivileged people to create the products (Reddy, 2014; Pal, 2017).

These sustainable practices lead to the definition of sustainable business models. Many frameworks have been proposed in the literature to capture the essence of a business models. Authors such as Richardson (2008) or Osterwalder et al (2005) developed their respective business model frameworks with the goal of capturing the economic side of the company. These two frameworks are presented here below:

Pillar	Business Model Building Block	Description
Product	Value proposition	Gives an overall view of the company's bundle of products and services.
Customer Interface	Target customer	Describes the segments of customers a company wants to offer value to.
	Distribution Channel	Describe the various means of the company to get in touch with its customer
	Relationship	Explains the kind of links a company establishes between itself and its different customer segments.
Infrastructure Management	Value Configuration	Describes the arrangement of activities and resources
	Core Competency	Outlines the competences necessary to execute the company's business model.
	Partner Network	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialize value.
Financial Aspects	Cost Structure	Sums up the monetary consequences of the means employed in the business model
	Revenue Model	Describes the way a company makes money through a variety of revenue flows.

Table 1 Nine Business Model Building Blocks (Osterwalder et al., 2005)

Pillar	Description	Element
Value Proposition	What the firm will deliver to its customers, why they will be willing to pay for it, and the firm's basic approach to competitive advantage	The offering
		The target customer
		The basic strategy to win customers and gain competitive advantage
Value creation and delivery system	How the firm will create and deliver that value to its customers and the source of its competitive advantage	Resources and capabilities
		Organization: the value chain, the activity system, and customers
		Position in the value network: link to suppliers, partner and customers
Value capture	How the firm generates revenue and profit	Revenue sources
		The economics of the business

Table 2 The Business Model Framework (2008)

These frameworks are of paramount importance when a business model has to be analysed and comprehended. However, they are limited only to the economic side of the company, leaving aside the aspects of environmental and social sustainability. Hence,

considering the definition of environmental and social values identified in the literature, as well as the concepts of Value Creation&Delivery and Value Capture in the sustainable perspective, an Integrated Sustainable Business Model was defined in order to encompass of the element of the Triple Bottom Line (Elkington, 2004). This framework is presented here below:

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- Product - Customer target - Customer relationship	Environmental value	Social value
Value creation & Delivery	- Key partners - Key resources - Key activities - Channels	Green supply chain - Green procurement - Green design - Green operations Green marketing Certification/labels	Corporate social responsibility - Upstream stewardship - Ethical and fair trade - Volunteering - Philanthropy Social marketing
Value Capture	- Revenues - Costs	Environmental benefits and costs	Social benefits and costs

Table 3 Integrated Sustainable Business Model

Research Framework and Methodology

After a deep literature analysis, it was possible to identify some areas not addressed by any authors (alias literature gaps). Such gaps are related to the lack of knowledge about the drivers that brought to the adoption of a specific archetype's business model rather than another. In fact, even if a literature about drivers exists, such literature does not explain which drivers are relevant to the adoption of one archetype rather than another (the archetypes mentioned are those identified by Bocken et al., 2014). Further, it was identified a gap in the knowledge related to the differences between drivers of sustainable born companies compared to those who adopted sustainability only afterwards. In order to address and bridge such gaps the following research questions were identified:

RQ1: What are the drivers to explain the adoption of a certain sustainable business model archetype in the fashion industry?

RQ2: For each archetype, which are the differences between the drivers for the companies born sustainable and the non-born sustainable companies (i.e.the companies that were not born sustainable, but became sustainable)?

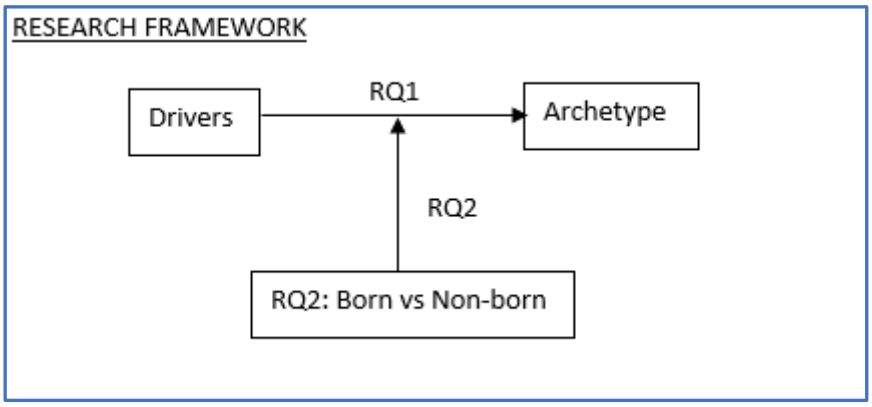

Figure 2 Research Framework

Starting from this research framework, a questionnaire was developed in order to assess the elements of the sustainable business model of the company and the drivers that brought the company to sustainability.

After the definition of the questionnaire, several lists of sustainable companies in the fashion industry were screened to select the firms to be contacted. These companies needed to possess some specific criteria (explained in the Table below).

Selecting criteria	Explanation
Fashion industry	Companies that operate in the fashion industry.
Sustainability	Companies that had evidence of being truly sustainable. That evidence emerged from certificates, such as the B Corp certification, and from information present of their website or other sources connected. Such information could be other certificates obtained by the company, or the materials and practices adopted.
Position in the supply chain	The companies considered were positioned at the same point of the supply chain, which was retailing and production of the final good.
For-profit companies	Companies were all for-profit

Table 4 Selecting criteria

Next, the table below shows the list of the companies selected and analysed. The information was collected through different means (Interviews, emails, secondary sources, official website).

Name	Product	Country	Size	Year	List	Type of interaction
Nisolo	Shoes	USA	97	2011	Bcorp	Emails
Eileen Fisher	Clothes	USA	1200	1984	Bcorp	Interview
TS Design	Printing t-shirts	USA	11-50	1977	Bcorp	No interaction
Elvis & Kresse	Accessories	UK	10	2005	Bcorp	Previous interviews shared with me
Reformation	Clothes	USA	400	2009	Huffpost	Previous interviews shared with me
Mayamiko	Clothes	UK, Malawi	18	2013	Nomadtribe	Previous interviews shared with me
Amara Tulum	Swimwear	Mexico	3	2014	Girlvsglobe	Interview

Table 5 Selected companies

This sample of companies has the quality of possessing an interesting variety of archetypes and of born vs non-born sustainable companies, which allow to identify similarities and differences among the groups considered. In this way, it was possible to recognize specific patterns for each archetype and for the categories born- sustainable against non-born sustainable.

Firm	Born?	Archetype
Nisolo	Yes	Repurpose for society/environment
Eileen Fisher	No	Substitute with renewable and natural processes
TS Design	No	Substitute with renewable and natural processes
Elvis & Kresse	Yes	Repurpose for society/environment & Create value from waste
Reformation	Yes	Substitute with renewable and natural processes
Mayamiko	Yes	Repurpose for society/environment
Amara Tulum	No	Create value form waste

Table 6 Firms' characteristics

Analysis and results

From the analysis of the cases considered, seven drivers emerged which are:

- Personal values/lifestyle
- Desire to have a social/environmental impact
- Recognition of gap (with the identification of three different kinds of gap, i.e. in the supply chain, in the competences, and in the circular supply chain)
- Recognition of product value from human competences & activities
- Recognition of product value in material input
- Drastic event in the supply chain (occurred or potential)
- Risk of future disruption

From a cross-case analysis it emerged that some drivers are specific of a particular archetype, while others discriminate between born-sustainable and non-born sustainable companies. Additionally, it was possible to identify two levels towards the adoption of the sustainable business model. The first level is the decision to adopt sustainability, while the second is the decision of the archetype. The analysis revealed that some drivers have an active role in the first level and that differ in case the company analysed is a sustainable born company or a non-born sustainable company. Instead, other drivers have an impact in the adoption of a business model belonging to an archetype rather than another.

Starting, from "Personal values/lifestyle", it emerged that this driver is common to all the companies considered. This can be explained by arguing that such driver is a sort of breeding ground for the development of sustainable practices.

Then, the drivers “Recognition of a gap” and “Recognition of product value from human competences & activities” are those which bring the company towards the archetype “Repurpose the business for society/environment”. In fact, the companies of this archetype started with the desire of solving the problem related to a gap, existing in the supply chain, or in the competences. However, they also recognized a potential value that could have been unlocked if the gap had been filled. Hence, the founders coherently decided to start the company belonging to the archetype of “Repurpose for society/environment” as one of the main characteristic is the priority given to a social mission.

The driver “Recognition of product value from material input” is the driver that leads the companies to adopt a sustainable business model belonging to the archetype “Create value from waste”. This is reasonable, as the decision to centre the business model to such archetype needs to be based on the recognition of a significant value in the material obtained from waste products.

The driver “Risk of future disruption” is instead correlated to the archetype “Substitute with renewable and natural processes”. In fact, on the one hand such archetype allows the company to rely on non-finite resources, thus mitigating the risk from upstream supply chain disruption and on the other hand it can be a survival strategy, as it can act as a mean to gain a better market position, thus escaping the risk of failure from a downstream supply chain disruption (loss of customers). Finally, in a broader perspective, this archetype can prevent a disruption in the whole industry, deriving from reaching a non-return’s point in the environmental condition of the globe.

The other two drivers “Drastic event in the supply chain (occurred or potential)” and “Desire to have a social/environmental impact” are related to the status born sustainable and non-born sustainable. In fact, it emerged that the companies that born with sustainability in their DNA were started by people who wanted to have a direct impact in the world, while the non-born sustainable companies embraced sustainability only after that a drastic event occurred in the supply chain.

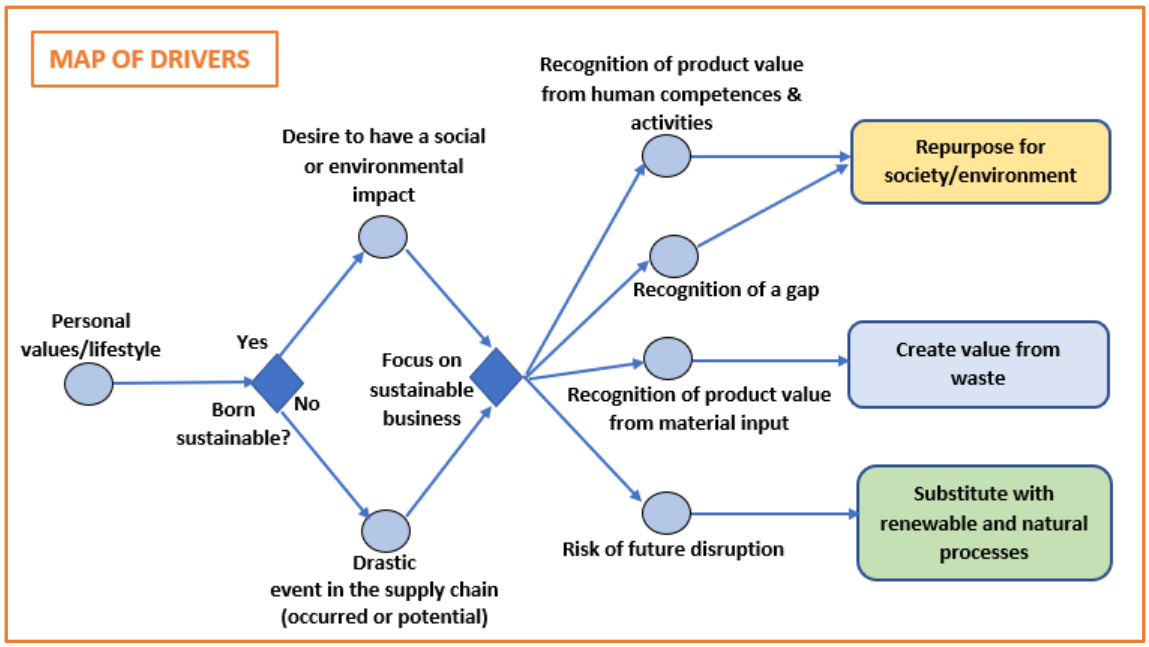

Figure 3 Map of drivers

Conclusions

The answers to the research questions provided some managerial implications. First, it emerged that the adoption of the archetype "Substitute with renewable and natural processes" can be a good strategy to face the risk of a supply chain disruption. In fact, the adoption of new sustainable materials can be an effective decision to overcome issues related to access to traditional resources, that may become difficult or costly to obtain. Additionally, the adoption of renewable and natural processes can be a way to increase the brand reputation in the market and this proved to be an effective mean to overcome the risk of failure of TS Designs, linked to the loss of its previous customers.

Another managerial implication is that a good opportunity to start a social business derives from the recognition of a "gap" that could unlock some economic value if bridged. This sets some implications also for policy makers. In fact, international governmental organizations should be able to recognize in an easier way these gaps and then they should incentivise private entrepreneur to address these gaps.

The limitation of this work is that it comprises only three of the eight archetypes recognized by Bocken et al., 2014, hence further research could be done to include also the remaining ones. Additionally, the number of companies considered per archetype was limited, hence it would be interesting to expand the knowledge coverage for each archetype by adding more cases.

1

LITTERATURE REVIEW

1. Literature Review

Sustainability has acquired a critical relevance in our lives. Institutions and governments are at the forefront in driving the world toward a cleaner and more ethical reality and an increasing number of companies carry out their business with a sustainable approach. The road to get to this point has been slow and there is still a lot of path to be travelled but the world is moving in the right direction.

This chapter presents a literature review about many aspects related to this topic. First, it is provided a brief overview of the challenges that the world is undergoing, such as pollution, significant increase of the population, resource depletion etc. Then, it is provided a description of the history about the development of sustainability and how the governments started step by step to recognize it as a problem that has to be addressed. Due to this public and institutional attention, sustainability started to be included in the business models of several firms, driven by regulations but also by other drivers such as costs, competitiveness, personal beliefs etc. For this reason, the concept of the business model is explained, with several definitions and frameworks. Afterwards, the chapter starts to deal in a thorough manner the literature on sustainable practices existing in business, with a particular focus on the fashion industry.

1.1 Global Environmental and Social Challenges

The human population has become with no doubt a planetary force, able to drastically shape the Earth in its continuous desire to improve its own living conditions. There is a precise terminology that defines the era, or even geological epoch, which we are living in, that is characterized by the tremendous power acquired by man, that has become comparable to forces like climatic or geological ones. This geological epoch is termed "Anthropocene" (Fisher-Kowalski and Krausmann, 2004). There is no consensus about the moment in which this epoch started: some argue that it happened when humans abandoned the life of hunters and gathers to became agriculturalists, around 12000 years ago (Kaplan et al., 2009; Ruddiman, 2003); some state that it started with the industrial transformation, back to the latter part of the 18th century (Crutzen and Stoermer, 2000); others say that it began with the "Great Acceleration", after the World War II, where industries underwent a period of incredible growth (Steffen et al., 2007). However, the

latter period was clearly the one where impacts on Earth became more severe and warning. Industries are exploiting our planet in a brutal way, using it like a landfill for all the waste produced and extracting resources and resource at a continuous increasing rate. The level of exploitation of resources can be shown by an indicator, called "Ecological Footprint", that assesses the level of human consumption compared to the regenerative capacity of the Earth. Data show that nowadays human appropriation of bio-productive area is exceeding of 50% the available bio-capacity. In other words, this means that we are now consuming one-and-a-half planet (Boruckea et al., 2012). Further, with all our activities, we are increasing the level of pollution, both in the air and in the water, we are reducing the natural biodiversity, we are causing a desertification of many areas, we are generating an increase of the temperature (which in turn has generated catastrophic events, such as hurricanes, droughts, downpours, whirlwind, etc), as well as other negative consequences (Starkel, 2016). The importance of the impacts is made possible by a boost of technology innovation as well as by a dramatic increase of population over the last decades.

All these situations are summarized by a so-called "Planetary dashboard", developed by the International Geosphere-Biosphere Programme (IGBP), first published in 2004 and updated in 2015. This dashboard comprises several socio-economic trends and Earth-system trends. Here below some of these trends are shown in order to have a clear insight about the importance of the issue (IGBP, 2015):

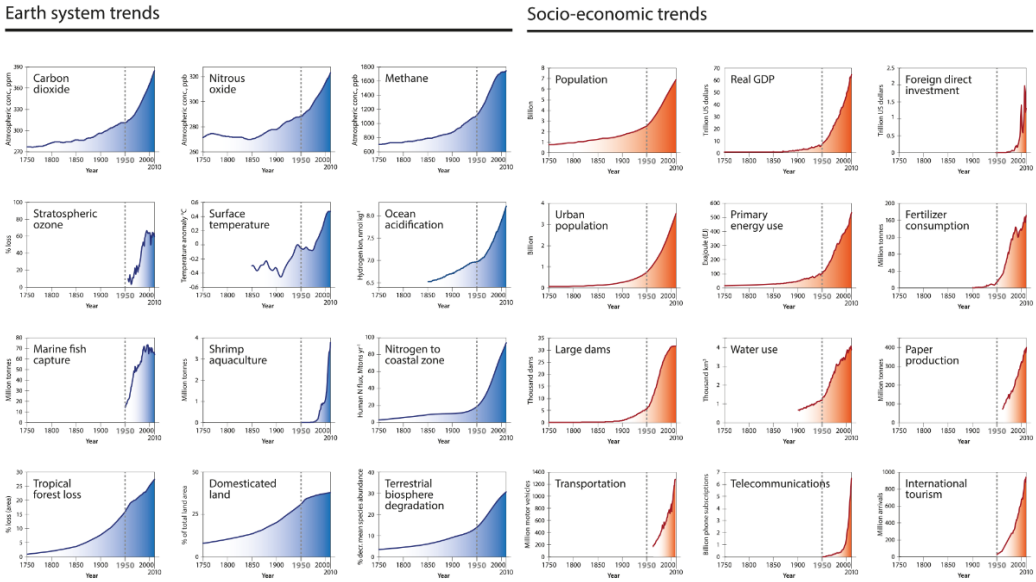

Figure 4 Planetary Dashboard (IGBP, 2015)

However, even if the production is continuously increasing and resources are continuously extracted, there is still a tremendous disparity in the living conditions among the global population. While part of it has access to all the kinds of comforts and its rights are protected by governments and institutions, there is a big part that suffers many deprivations: difficult access to water and food, no basic human rights, exploitation on the work-place, no health service, etc (UN, 2018).

1.2 Raise of the Sustainability

All these pressures have caused many alarming events that should catch the attention of the public and make the situation change towards a sustainable behaviour.

Before arriving in front of governmental attention, the awareness of the environmental problems caused by human activities was stimulated and promoted by private citizens belonging to several areas of study. A critical importance in this direction belongs to the "Club of Rome". This club was founded in 1968 by Aurelio Peccei, who was an industrialist and a philanthropist and comprised people like politicians, scientists, economists etc. They were united by the preoccupation about the future of the Earth and they followed the idea proposed by the mathematician and researcher Dennis L. Meadow, who wrote in his report "The Limits to Growth (1972)" that the resources would have reached their limit during the life of the next few generations (Meadows et al., 1972). What this club wanted to do was to raise the public awareness about the situation and to urge the institutions to start addressing this problem in a consistent way (Mihailov and Sakeralieva, 2016).

This step was made during the UN Conference on the Human Environment held in Stockholm in 1972. Even if the concept of sustainability was still not defined, the issue of environmental protection was brought to governmental attention (Rita Yi Man Li and Don Henry Ah Pak, 2016). This conference highlighted the harming effect that human behaviour can have on the environment if not managed properly and the critical consequences that this would have caused to the well-being of people. It also highlighted the existence of a gap in the living conditions among the populations and that this gap needed to be reduced. These problems are responsibility of everyone at all levels, starting from governments and continuing with institutions, communities, enterprises and

citizens. This was specifically stated by one of the 26 principles identified during the conference:

"Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperilled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development."

United Nations, Stockholm, 1972

After the Stockholm Conference, a first step towards a more sustainable world was made through the creation of the UN Environment Program (UNEP), on 15th December 1972. This organization is the leading global environmental authority that assesses environmental conditions and trends, develops environmental instruments and co-ordinates institutions and agencies with the goal to improve the quality of life without compromise the future generation (Momtaz, 1996; UNEP, 2018). However, even if the concept of sustainability was already clear, the most used definition of sustainable development appeared only after, during the United Nation's Brundtland Commission in 1987, where it was defined as:

"... a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations".

Brundtland, 1987

Still during this Commission, several critical objects were outlined for environmental and development policies with the aim to drive the world towards this direction:

- Reviving growth;
- Changing the quality of growth;
- Meeting essential needs for jobs, energy, water, and sanitation;
- Ensuring a sustainable level of population;
- Conserving and enhancing the resource base;
- Reorienting technology and managing risk;
- Merging environment and economics in decision making. (Brundtland, 1987)

After the UN Conference held in Stockholm in 1972, there were no other significant governmental meetings about environmental topic for many years. It was only after 20 years, that a new crucial meeting was organized. This was the famous Earth Summit, held in Rio de Janeiro from 3rd to 14th of June in 1992. This UN event was unprecedent in term of size and of importance and was organized in order to help Governments to rethink economic development and find a way to stop pollution and irreversible depletion of resources. During this event, three main and historical agreements were made among governments:

- Agenda 21: it is a programme that contains detailed proposals of actions in social, economic and environmental areas, such as how combating poverty, protecting the atmosphere, preventing the deforestation and many others.
- The Rio Declaration of Environment and Development: it defines rights and responsibilities of States through principles such as those that state that to reach a sustainable development is necessary to give central importance to human being, to fight social disparities and eradicate poverty, to involve full women participation.
- The Statement of Forest Principles: it was a non-legally binding statement for a sustainable management of forests.

This Summit is considered as the beginning of a new Era, where the attention towards sustainability started to become concrete and where Governments started really to implement the sustainable measures (UN, 1997). Many years have passed from that moment and now the concept of sustainability has acquired a great importance both in term of public opinion and in term of applications from the enterprises. Economic, social and environmental sustainability are considered important and even strategic aspects of the management of a company and are encircled by the Triple Bottom Line framework, provided by Elkington (2004), which aim at measuring these three pillars of sustainability in order to enhance them (José Julio Ferraz de Campos Jr., 2017. These sustainable aspects are now integrated in the business model of the companies and influence their practices and decision-making processes.

Figure 5 Triple Bottom Line (Elkington, 2004)

1.3 Business Model

This chapter will deal with the concept of "Business Model", a concept that is of critical importance to understand the value chain of a company and to manage it in a proper way. This chapter will present first of all a brief history of the raise of the concept of business model, showing some definitions derived from the literature. Then, there will be a part of the chapter dedicated to the several frameworks used to capture the essence of a company's business model, with a particular focus of those ideated by Osterwalder et al. (2004; 2005., and Richardson.

1.3.1 Business model history & definitions

The first time in which it is possible to observe the term "Business Model" dates back to 1957, where it was first mentioned in an academic paper written by Bellman et al. and after in the title and the abstract of the paper of Jones in 1960 (Novak, 2014). However, the real momentum for the concept of Business Model arrived just with the advent of Internet in the late of 90s. The literature on this topic at that time was more related to the concept of e-business at an extent that they were considered also synonymous and that the main goal of the papers was to explain how to migrate to a profitable e-business model. Always during that time, there was the development of many software to facilitate the task to define the business model of the company. Among such software it is possible

to mention Edrawsoft, AccuProcess Modeler, Gliffy, and BPWin, one of the most famous (Gorevaya and Khayrullina, 2015; Nielsen and Lund, 2014). However, after the blow of the dot-com era, being e-business could have a negative effect and therefore, companies started to shift the business model's focus from the specific Internet relevance to a broader for-profit formula, thus increasing the variety of fields where it was possible to adopt it. It arrived a moment in which the literature on business model started to analyse cases in which it was used even outside the traditional business sphere, such as cases as the care for hospitalized older adults by Capezuti et al. in 2013, of other healthcare units by Schlein in 2013, medical drug development by Philippidis in 2011 and many others (Novak, 2014). Also, due to this broad variety of application, the definition of business model is not straightforward and clear. Here below there is a table of some of the several definitions that appear in the literature review:

Author(s) & Year	Definition
Timmers, 1998	The business model is 'an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenues' (p. 2).
Mahadevan, 2000	A business model is a unique blend of three streams that are critical to the business. These include the value stream for the business partners and the buyers, the revenue stream, and the logistical stream. (p. 59)
Afuah & Tucci, 2001	A business model is the method by which a firm builds and uses its resources to offer its customers better value than its competitors and make money doing so. It details how a firm makes money now and how it plans to do so in the long-term. The model is what enables a firm to have a sustainable competitive advantage, to perform better than its rivals in the long term. (p. 3-4)
Amit & Zott, 2001	The business model 'depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities' (p. 511).

Weill and Vitale, 2001	Description of the roles and relationships among a firm's consumers, customers, allies and suppliers that identifies the major flows of product, information, and money, and the major benefits to participants
Tapscott, 2001	A business model refers to the core architecture of a firm, specifically how it deploys all relevant resources (not just those within its corporate boundaries) to create differentiated value for customers. (p. 5)
Chesbrough & Rosenbloom, 2002	The business model provides a coherent framework that takes technological characteristics and potentials as inputs and converts them through customers and markets into economic inputs. The business model is thus conceived as a focusing device that mediates between technology development and economic value creation. (p. 532) It "spells out how a company makes money by specifying where it is positioned in the value chain" (p. 533)
Afuah and Tucci, 2003	Method by which a firm builds and uses its resources to offer its customers better value than its competitors and to make money while doing so. It details how a firm makes money now and how it plans to do so in the long term
Morris et al., 2005	A business model is a 'concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets' (p. 727).
Chesbrough, 2006	At its heart, a business model performs two important functions: value creation and value capture. First, it defines a series of activities that will yield a new product or service in such a way that there is net value created throughout the various activities. Second, it captures value from a portion of those activities for the firm developing the model. (p. 108)

Johnson, Christensen and Kagermann, 2008	A business model, from our point of view, consists of four interlocking elements that, taken together, create and deliver value. The most important to get right, by far, is the customer value proposition. The other elements are the profit formula, the key resources and the key processes. (p. 52-53).
Morris, 2009	Description of a whole system, a combination of products and services delivered to the market in a particular way, or ways, supported by an organisation, positioned according to a particular branding that, most importantly, provides experiences to customers that yield a particular set of strong relationships with them.
Zott & Amit, 2010	They conceptualize a firm's business model as 'the system of independent activities that transcends the focal firm and spans its boundaries. The activity system enables the firm, in concert with its partners, to create value and also to appropriate a share of that value' (p. 216).
Osterwalder and Pigneur, 2010	A business model describes the rationale of how an organization creates, delivers, and captures value. (p. 14)
Demil & Lecocq, 2010	A business model concept refers to 'the description of the articulation between different BM components or 'building blocks' to produce a proposition that can generate value for consumers and thus for the organization.' (p. 227).
Teece, 2010	A business model 'articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering that value. In essence, it embodies nothing less than the organizational and financial 'architecture' of a business' (p. 173).
Cavalcante et al., 2011	A business model is 'an abstraction of the principles supporting the development of the core repeated standard

	processes necessary for a company to perform its business' (p. 1329).

Table 7 Business Model definitions

This table above is made through selection extracted by the works carried out by other authors who already provided a collection of definitions (Fielt, 2013; Novak, 2014; Goyal et al., 2017).

As it is possible observe from the table above, there is not unified view about the business model. Starting from the description of the structure, some authors are quite vague in its definition. While some delineate specific macroblocks such as Value Capture, Value Creation and Value Proposition (e.g. Chesbrough, 2006; Osterwalder and Pigneur, 2010), some adopt a totally different view, by considering the streams that go through the organization, such as the product stream, the service stream and the information stream (e.g. Timmers, 1998). Another divergence is that some definitions include aspects such as costs, profit and revenues (e.g. Teece, 2010; Johnson et al., 2008), while others do not take explicitly economic and financial items into account. There are also some differences in the broadness of the supply chain considered explicitly, since some authors mention the buyers, the suppliers and the stakeholders involved (Mahadevan, 2000, Timmers, 1998), while others do not refer to the actors involved, staying more at more general level (e.g. Cavalcante et al.,2011). Confusion exists also on the focus of the business model. Some authors focus more on the roles and relationship of the parts (e.g.Weill and Vitale, 2001), in contrast to others that focus more on technologic development (e.g. Chesbrough & Rosenbloom, 2002), or on brand experience (e.g. Morris, 2009). Instead, one element which is quite unifying among the several definitions is the term of value, even if different authors mentioned different phase related to value. Some mentioned just the creation phase (e.g. Demil & Lecocq, 2010), others include also the delivery (e.g. Teece, 2010) and the capturing (Osterwalder and Pigneur, 2010). However, it is not always cleared what they mean for value, if it is the customer value or other.

1.3.2 Business model frameworks

In the literature it is possible to find several types of frameworks able to capture the essence of the internal processes of a company, by highlighting the critical elements of the business and the relationship existing between them. These types of framework may

vary a lot among each other in term of level of detail and elements considered. These differences are in line with the variety of definitions existing in literature about business models. In the table below, it is possible observing 5 different frameworks:

Author(s)	List/Framework and elements	
Osterwalder (2004); Osterwalder and Pigneur (2010)	Business Model Canvas	
	• Customer Segments • Customer Relationship • Value Proposition • Communication, Distribution & Sale Channels	• Key Resources • Key Activities • Key Partnerships • Revenue Streams • Cost Structure
Chesbrough and Rosenbloom (2002)	Technology-market mediation	
	• Value proposition • Market segment • Value chain	• Cost structure & profit potential • Value network • Competitive strategy
Morris et al., (2005)	Entrepreneur's business model	
	• How do we create value? (factors related to the offering) • Who do we create the value for? (market factors) • What is our source of competence? (internal capability factors)	• How do we competitively position ourselves? (strategy factors) • How do we make money? (economic factors) • What are our time, scope and size ambitions? (personal and investor factors)
Johnson et al., (2008); Johnson (2010)	Four-Box Business Model	

	• Customer value proposition
	  ○ Job-to-be-done
	  ○ Offering
	• Profit Formula
	  ○ Revenue Model
	  ○ Cost Structure
	  ○ Target Unit Margin
	  ○ Resource Velocity
		• Key Resources
		• Key Processes
		  ○ Processes
		  ○ Business Rules & Success Metrics
		  ○ Behavioural Norms

Richardson, 2008	Richardson's framework	
	• Value proposition	• Value capture

	○ Offering ○ Target customer ○ Basic strategy to win customers and gain competitive advantage • Value creation & delivery ○ Resources and capabilities ○ Organization: the value chain, activity system and business processes ○ Position in the value network: links to suppliers, partners and customers	○ Revenue sources ○ The economics of the business

Table 8 Business Model frameworks

As it is possible to see, there are some differences among the presented frameworks, like the fact that Chesbrough and Rosenbloom focus their business models on technological innovation, while Morris discusses it from an entrepreneurship perspective. In addition, also the level of detail of the analysis change among the models and the authors present some peculiarity related to some aspects discussed. For example, Johnson considers aspects such as rules, success metrics and target unit margins, ignored by others, while Chesbrough and Rosenbloom, and Morris take into consideration the aspect of corporate strategy and finally, Osterwalder and Pigneur (2010) as well as Richardson (2008) are the ones who show a specific pillar dedicated to customer. Then, it emerges that each author has its specific way of looking at the business model concept.

In any case, it seems that the frameworks developed by Richardson on the one hand and by Osterwalder et al. on the other, are the most complete and detailed and also very similar. The difference stays most in the fact that Richardson provides a detailed level of analysis but also a higher one, composed by "Value proposition", "Value creation & delivery" and "Value capture". However, if looking the level below, there appear all the elements present in the "Business model canvas". In any case, these frameworks are those considered most important for the scope of this thesis and only these will be taken into consideration in the rest of the work.

1.3.2.1 Business model canvas (Osterwalder et al., 2005)

One of the most known and complete framework to define the business model of a company is that proposed by Osterwalder et al., (2005). They performed a deep literature analysis about the business model in the companies and about the elements that constitute could constitute a business model framework. After their work, they arrived to a specific definition of business model, which is stated here below:

> "*A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams."*

As it is possible to observe from this definition, business model is a tool that comprises all the elements of the supply chain, since it takes into consideration the customers, the partners and the company itself. In this way, it is possible to have a complete overview about the situation of the company and how it interacts with the other players on the business. According to its definition, they defined 9 specific building blocks that would constitute their "Business model canvas". These 9 blocks cover all the aspects of the previous cited definitions and are shown in the Table 9:

Pillar	Business Model Building Block	Description
Product	Value proposition	Gives an overall view of the company's bundle of products and services.
Customer Interface	Target customer	Describes the segments of customers a company wants to offer value to.
	Distribution Channel	Describe the various means of the company to get in touch with its customer
	Relationship	Explains the kind of links a company establishes between itself and its different customer segments.
Infrastructure Management	Value Configuration	Describes the arrangement of activities and resources
	Core Competency	Outlines the competences necessary to execute the company's business model.
	Partner Network	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialize value.
Financial Aspects	Cost Structure	Sums up the monetary consequences of the means employed in the business model
	Revenue Model	Describes the way a company makes money through a variety of revenue flows.

Table 9 Nine Business Model Building Blocks (Osterwalder et al., 2005)

These blocks are very specific for each area to be assessed, and this completeness allows this tool to be useful in many situations:

- Understanding and sharing
- Analysing
- Managing
- Prospects
- Patenting of business model

Understanding and sharing

People have always different mental mode to see things, with the result that sometimes people know about a part of the business and not the rest, or they understood it in a wrong way. The business model framework proposed by Osterwalder et al. (2005) is very useful because it allows to capture all the critical concept of the business model in a unique and standardized way, which is common to all the people involved. Moreover, usually this framework is presented in a form of Business Model Canvas, thus making the explanation of the model visual. This facilitates a lot the understanding of the

concepts, which sometimes could be also very articulated. Instead, with the canvas, it is possible to visualize it in a simple form, thus getting an immediate comprehension. In such a way, it makes it easier to communicate inside the company, both if it is about informing about the current situation of the company and the case of communicating some change in the traditional processes.

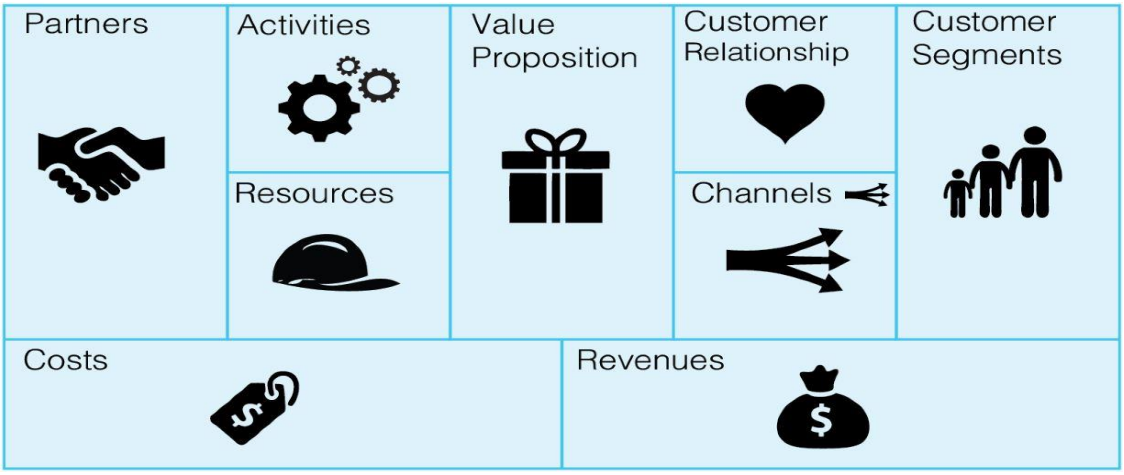

Figure 6 Business Model Canvas

Analysing

The business model framework is very important also in order to analyse the actual business. In fact, it highlights the key areas and aspects that should be measured, thus facilitating the definition of the proper Key Performance Indicators (KPI), in the optic of creating an effective balanced scorecard, that would allow the measurement of all the relevant aspects of the company's activities. In this case Kaplan and Norton (1992), identified an effective balance scorecard in a dashboard that considers financial, customers, internal business and innovation perspective. Additionally, the analysis can be done also with the goal to compare the company's business model with other competitors. This comparison would be more complex if a clear and unique framework would not be defined.

Manage

This framework is very useful also in term of company managing and this happens under many ways. First of all, when it is needed a design of a new business model, or the

redesign of an old one it is critical to have a clear and integrated tool, since in a firm, the different aspects works together, and it is necessary that they work in synchrony if the business model wants to be effective. For this reason, the integrated view is of critical importance, in case of a change of the actual situation or the design of a new reality. It is also useful for decision making and to react to external events, that require internal adaptation (Osterwalder et al., 2005)

Prospect

According to what explained before, business model framework can also foster innovation. In fact, it is like giving to a business model designer a box of Lego blocks, that it can put together in many different ways, thus creating new forms and patterns (Burgi et al. 2004). In this way, the designer is able to arrange many different solution, test them and see which is the most suited one.

Patenting

Business model can be useful also for legal aspects. In fact, sometimes the company wants to patent the very business model, because maybe it is particular and the source of competitiveness in the market. In that case, having a framework that helps in this way desirable (Beresford 2001).

Among all these potential utilizations, in this thesis the framework will be adopted mainly with the goal of understanding deeply the firms selected in the sample, to catch all the critical concepts related of what they do and finally to be able also to compare them among each other, to see the degree of similarity among them

1.3.2.2 Business model framework (Richardson, 2008)

Similar to the work of Osterwalder et al. (2005), Richardson too performed a deep literature review about business model and likewise, it developed its own business model framework, which of course present similarities with other authors' frameworks. For example, it presents many similarities with the "Business model canvas" of Osterwalder,

as it is possible to see in the table considered before. However, the framework developed by Richardson has the advantage to look at the business model in a more aggregated view, considering three main areas:

- Value proposition
- Value creation & Delivery
- Value Capture

Then, within these areas it will possible to identify many of the building blocks determined by Osterwalder, but the higher level of aggregation allows an easier comprehension of the enterprise's reality.

Value proposition

This macro area refers to the definition of the offer provided by the company to the market, that the customer will value enough worthy to pay for it. Hence, in this area it is specify which is the product/service sold by the company. However, a product or a service can be a different value according to the customer who is evaluating it. Hence, in this area it is also defined the type of customer addressed with the company's offer. It will be given some characteristics about the market segment served by the company, for example in term of personal data, interests etc. Further, this area deals also with the position of the offer considering also the competitors, since the value embedded in an offer depends also on its competitiveness. The more the offer is unique and the more it outstrips the competitors, the higher will be the value.

Value creation & delivery

This area is strictly connected with the value proposition and deal with all the activities and the resources that the company carries out in order to create, produce, sell and deliver the value defned in the value proposition. In order to have a general idea about what activities could be involved, it is presented the "Value chain" model proposed by Porter (1985).

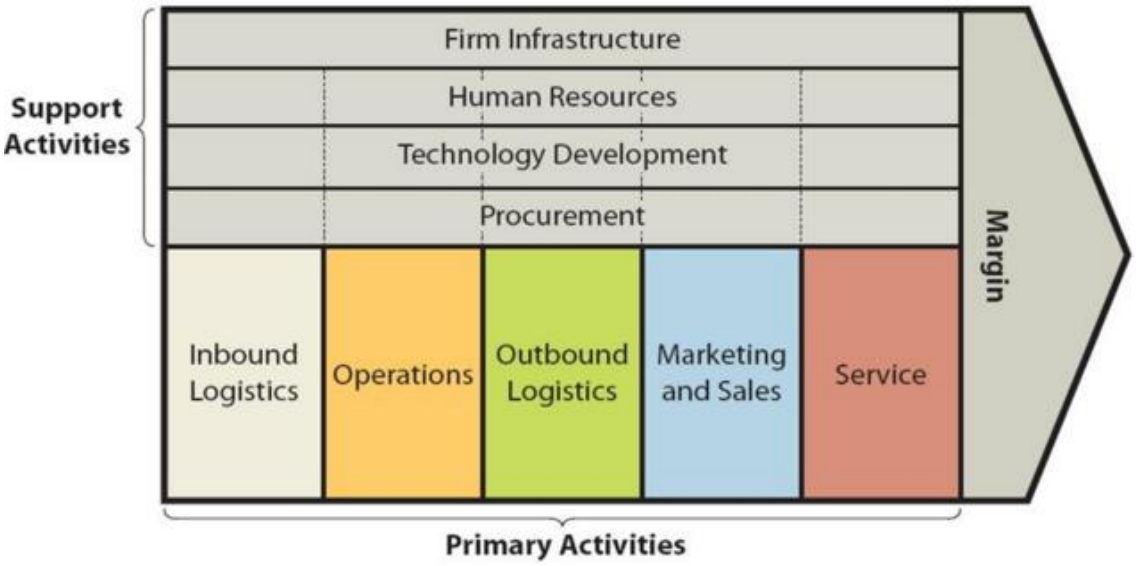

Figure 7 Value chain (Porter, 1985)

As it is possible to observe, in a company there are many different activities that can be subdivided in "Primary activities" and "Support activities". All of them have an importance within the firm. However, some of them are most relevant than the others, since are those that provide the competitive edge that allow the organization to be superior to competitors and gain in that way a superior margin. The section "Value creation & delivery" deals exactly with those activities, that guarantees a consistent level of competitiveness to the company. Yet, that area is not only about the activities or the processes within the company, but it considers also the whole network around it, with the goal to point out the suppliers, the partners and the collaborations that most contribute to the creation and the delivery of the value proposition.

In order to understand if an activity or a network's player or a particular resource is critical to competitiveness it could be useful adopting the VRIO framework (Barney, 2002). The letter VRIO indicate these concepts:

- Value
- Rarity
- Inimitability
- Organization's ability to capture the vale

In fact, an activity or a resource or a partner, should have different characteristics to guarantee competitiveness in the short as well as in the long run. It has to be valuable, in

term of customer's appreciation and in term of new opportunities opened by it. It has to be rare, so that it is available just by few. It has to be costly to imitate, so that being able to maintain the source of competitiveness (if competitors acquire the same characteristic, the company will lose part of its competitiveness). And finally, there is to be an organization able to capture the positive benefits deriving from this resource/activity. In any case, VRIO framework will not be used in the analysis of results, since the it was possible to understand the criticality of an element, through the interviews.

Value capture

This area includes the revenue model as well as the economic model of the firm. The revenue model considers which are the source of money of the company, while the economic model deals with costs, margins and other financial aspects of the firm.

Pillar	Description	Element
Value Proposition	What the firm will deliver to its customers, why they will be willing to pay for it, and the firm's basic approach to competitive advantage	The offering
		The target customer
		The basic strategy to win customers and gain competitive advantage
Value creation and delivery system	How the firm will create and deliver that value to its customers and the source of its competitive advantage	Resources and capabilities
		Organization: the value chain, the activity system, and customers
		Position in the value network: link to suppliers, partner and customers
Value capture	How the firm generates revenue and profit	Revenue sources
		The economics of the business

Table 10 The Business Model Framework (Richardson, 2008)

1.4 Sustainable industry

This chapter will present a brief history of the development of economic theories towards sustainability, then a description of different degree of responsibility that a company can adopt regarding this topic. Then, it will be shown an ontology regarding the definition of sustainable business models. Finally, it will be discussed the application of sustainability in supply chain and a list of sustainable practices divided according to the stage of supply chain involved.

1.4.1 Sustainable development in economic theories

The traditional theory from which we are coming from is the neoclassic economy, together with the Keynesian economy. The basic ideas behind these theories is that the economy and the market push continuously towards the maximizations of the proper welfare and utilities. For this reason, the market is considered the best resource allocator, with a trend towards an increasing maximization of resource efficiencies. (Harris, 2000). Event though, resource efficiency is a positive aspect in favour of sustainability, this is absolutely not enough, also considering that the neoclassical view does not consider any limit to the growth and it does not give importance to the natural capital. This mentality brought to a situation where firms care only about private costs and ignores all the externalities produced, that are very burdensome in term of environmental and societal costs (Hanley & Spash, 1993). Contrary to this view that the market is the best ruler in the market and in the economy, Toman (1992) suggested that the market can play a positive role in some aspects such as efficiency, but for other aspects it is important to respect the so called “safe minimum standard”. According to this concept, the society should operate in a way that it does not overcome a certain threshold of cost and irreversibility. The market is not able to set these limits by its own, hence it is important the intervention of the government and of the societal values, which set some specific guidelines that prevent the economy to produce an intolerable impact. Therefore, following this direction of natural capital preservation, economic theories started to blend with ecological and societal perspective (Harris, 2000). This integration is required, because on the one hand, ecologist can help economists to set the limits of consumption and production in order not to overcome the aforementioned threshold. On the other hand, social and environmental aspects are often interrelated, as it has been observed that

poverty and inequity accelerate environmental degradation since displaced people put greater pressure on fisheries, forests and marginal lands (Harris, 2000). Additionally, it emerged that traditional Western model has caused increased societal and gender inequalities and has been associated with the dissolution of indigenous cultural, political and economic system (World Bank, 1997). This is in clear contrast with the sustainable principles as stated in the Rio Declaration of Environment and Development, which put great emphasis of human rights and on eradicating poverty.

Hence, it is necessary that companies move from the traditional way of doing business, just oriented to profit maximization, to a model where also environmental and social sustainability are taken into consideration.

Nowadays it is possible to recognize different realities of sustainability application into the firm's business, with various level of importance. Dyllick and Muff (2015) identified different levels of business sustainability, starting from the situation where sustainability is not present at all and arriving to a situation where sustainability is at the highest level possible and aim at solving societal problems. These levels are:

- Business-as-Usual: The Current Economic Paradigm
- Business Sustainability 1.0: Refined Shareholder Value Management
- Business Sustainability 2.0: Managing for the Triple Bottom Line
- Business Sustainability 3.0: Truly Sustainable Business

Each of this level is characterized by a particular degree of product sustainability, which follow the same classification just observed: Product Sustainability 1.0, Product Sustainability 2.0 and Product Sustainability 3.0, where the higher level incorporates the lower one (Dyllic and Rost, 2017).

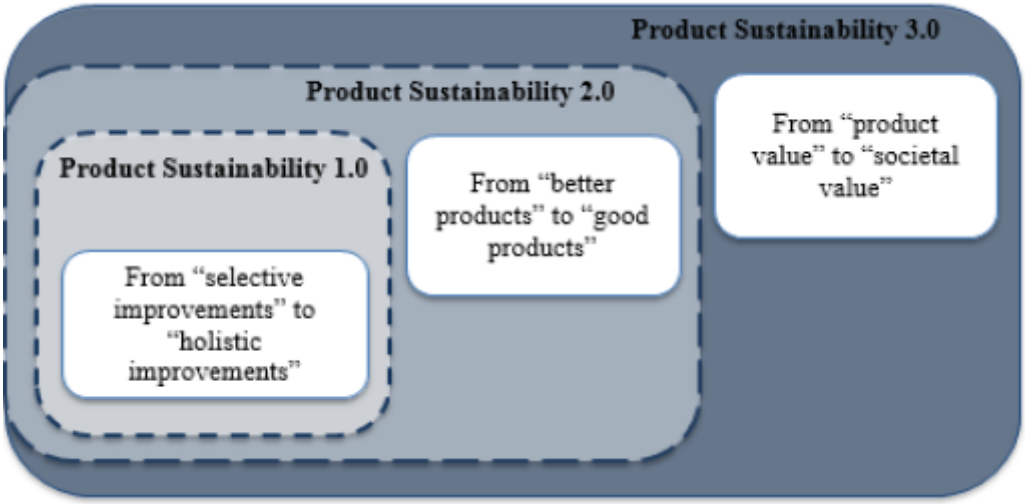

Figure 8 Product Sustainability Typology (Dyllic & Rost, 2017)

Business-as-Usual: The Current Economic Paradigm

This level is the very basic, where the company looks just at the profit maximization and the value considered is just that of shareholders.

Business Sustainability 1.0: Refined Shareholder Value Management

At this level, the company starts to recognize new kinds of challenges external to the market, that concern environment and sustainability. In this perspective, the level of sustainability gradually arrives to possess a holistic sustainability, meaning a product that is the least harmful possible for the environment and for the society. At this level it is possible to find practices such as eco-design, design for sustainability, or Cradle-to-Cradle, which will be explained better in the next part of the chapter. These practices consider the product in its whole lifecycle and aim at reducing its environmental footprint and at being the least harmful possible for the society (Valdivia et al., 2013; Dyllick & Rost, 2017). This degree of product sustainability is named by Dyllic and Rost (2017) Product Sustainability 1.0.

However, this level is considered by the authors to be not enough since the goals of the companies are still opportunistic. In fact, they can leverage sustainability in many ways to increase their profit. For example, Ambec and Lanoie (2008) explicitate 4 ways in which companies can cut decrease cost including: 1) lower costs of materials, energy, and services; 2) reduced cost of labor through efficiency/productivity gains; 3) lower costs of capital; and 4) improved risk management and relations with external stakeholders.

Additionally, sustainability can improve the brand reputation, thus increasing its competitiveness. Hence, the focus remains the shareholders' value maximization.

Business Sustainability 2.0: Managing for the Triple Bottom Line

At this level, the company moves from having better product (in term of environmental and social aspects), to good products. In this perspective, there emerges concepts such as Handprinting and Net Positive. Dixon and Blackburn (2013) define environmental handprinting as the "good we do for the environment". This logic is very different from the previous one, where the goal is to minimize the footprint. Here, the company wants to provide benefits for the environment, through products that are "good", according to the definition of Product Sustainability 2.0 (Dyllic and Rost, 2017). Example are cases where dirty water is used for production and then it is cleaned and put back in the environment, or where energy production is higher than required and then put in the global grid to the benefit of the society. When the handprinting of the company is higher than its footprint, there is a not positive situation, meaning that the company's activity is more beneficial than harmful for the environment and the society.

Business Sustainability 3.0: Truly Sustainable Business

While in the previous levels, the focus of the company followed an inside-out direction, where starting from the internal practices and production, they wanted to reduce the footprint or to realize good products. Here the focus follows an out-inside direction. In fact, companies that operate at this level begin with the identification of a society's problem and then they create a business model that aim at solving such problem. So, the focus is totally different from before, since their nature is strongly oriented to generate benefits for the society (Ryan et al., 1992).

1.4.2 Company's steps into sustainability

Even if there is a lot of talk about sustainability, the environmental and social conditions seem to be increasingly worsening. This is what Dyllick and Muff (2015) call "The Big Disconnect". This big disconnect is due principally to the fact that organizations are still mostly interested in profit maximization and belong mostly to the "Business-as-usual" or to "Business Sustainability 1.0". Actually, the process to become completely sustainable

is not immediate and it is possible to recognize different degree of commitment from the organization's side.

Benn et al. (2014), designed a six waves phase model that assess this level of commitment, recognizing six phases:

- In the rejection phase the company makes opposition to environmental and societal pressure and just want to maximize its profit, without considering possible externalities
- In the non-responsiveness phase the company is usually ignorant about the topic, thus does not include sustainability in the business model
- In the compliance phase, the company is more concerned about green image and in avoiding possible sanctions for incorrect practices
- In the efficiency phase, the company is interested in cutting costs through increased efficiency. This attitude falls in the Sustainable Business 1.0 level
- In the strategic proactivity phase, the company puts sustainability at corporate strategic level, hence playing a much more critical role than the previous phase. It focuses on innovation that is also good for the environment and that generate products that are eco-friendly and safe. However, the goal of the firm is still the profit maximization.
- In the sustaining corporation phase, the company is totally engaged towards sustainability and to challenge the current status quo. It collaborates with a network of partners that can be governments, NGOs, communities and firms so that being able to be more effective in their mission to bring the world to a more sustainable reality. Hence, even if it is still interested in profit, the organization voluntary goes beyond this goal to pursue social and environmental challenges.

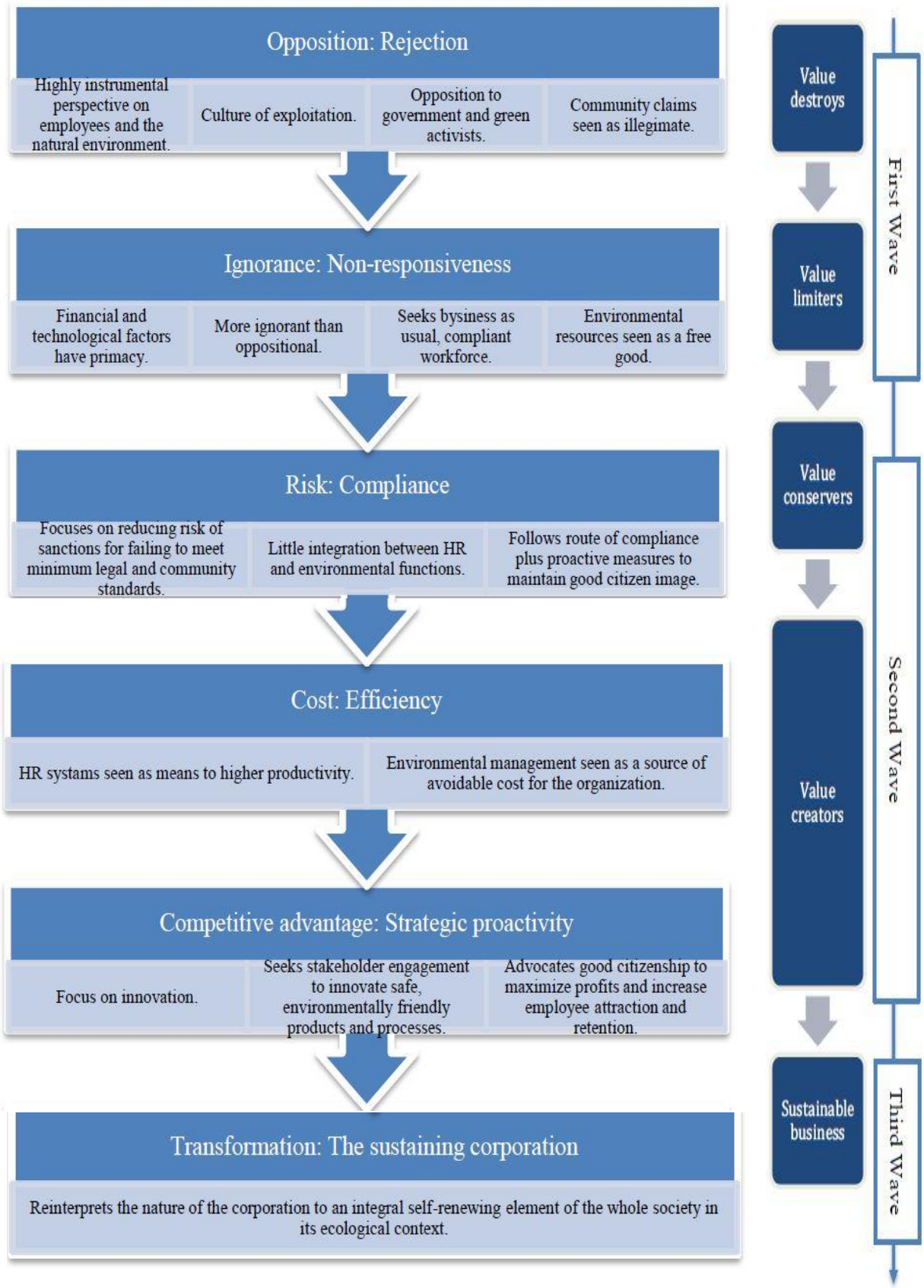

Figure 9 Waves of sustainability (Benn et al., 2014)

1.4.3 Sustainable business model definition

Through the availability of different sources, it is possible to observe the definition of sustainable business model from several points of views, thus obtaining a 360° panoramic (Table 5). First, it emerges that they equally give importance to all the three elements of the triple bottom line defined by Elkington (2004), namely economic, environmental and social aspects. In addressing all these sides of sustainability, a network of elements is considered, which are the products, the stakeholders, the customers, the suppliers, the technologies and finally the relationship between them (Nerurkar, 2017). All of them are important for the goal of a sustainable business model, which include also the necessity of being competitive in the market, yet achieved through outstanding responsible practices (Lüdeke-Freund, 2010). The concept of the system acquires a quite significant relevance, since it appears in several of the definitions presented (Bocken et al., 2014; Nerurkar, 2017; Stubbs and Cocklin, 2010; Goedkoop et al., 1999). This stresses the relevance that collaboration between actors play in this field, in order to be effective.

Author(s) & Year	Definition
Bocken et al., 2014	A sustainable business model is business model that generates important positive and/or significantly reduced negative impacts for the environment and/or society. It does it by changing the ways the organization and its value-network create, deliver and capture value (i.e. create economic value) or change their value propositions.
Schaltegger et al., 2016,	The (sustainable) business model "helps describing, analysing, managing and communicating (i) a company's sustainable value proposition to its customers and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social and economic capital beyond its organizational boundaries."
Lüdeke-Freund, 2010	It is a business model that integrate societal and environmental matters into the core business of a firm, with the goal of improving business success and competitiveness through outstanding and voluntary social and ecological performance.

Nerurkar, 2017	"Sustainable business models cover the triple bottom line impact. Apart from economic benefit, a sustainable business model is expected to deliver on social and environmental sustainability. These models therefore demand different relationships with stakeholders, new ways of thinking about customers, suppliers, technologies, operations and waste, new ways of engaging communities in order to deliver sustainable outcomes"
Stubbs and Cocklin, 2010	It can be conceptualized as "a narrative of sustainability practices; a description of features, attributes, and/or characteristics; a list of necessary and sufficient conditions; a representation of business processes; a firm-level description; a systems-level description; or some combinations of these". Also, traditional neoclassical model is transformed by social and environmental priorities.
Boons&Lüdeke-Freund, 2013	The sustainable business models' idea of the author is articulated in three ways. On the technological side they are "market devices that overcome internal and external barriers of marketing clean technologies". In this perspective, the business model's ability is to "to create a fit between technology characteristics and (new) commercialization approaches that both can succeed on given and new markets". On the organizational level, sustainable business model is a device that allows to overcome the neoclassical approach that shapes culture, structure and routines, by integrating environmental and social aspects. On the social aspect, sustainable business model is a tool that allow to create social value and maximize social profit. It is critical the ability of the model to stimulate the creation and the development of markets for innovations with a social purpose.
Goedkoop et al., 1999	The sustainable business model indicates "a system of products, services, supporting networks and infrastructure that is designed to

	be: competitive, satisfy customer needs and have a lower environmental impact than traditional business models"

Table 11 Sustainable Business Model definition

1.4.4 Sustainable supply chain

The definitions of sustainable business model presented before enlightening the importance of looking also outside of the boundaries of the company, towards customers, partners, suppliers etc. Hence, it makes sense to introduce the concept of supply chain and supply chain management.

According to the council of Supply Chain Management Professionals supply chain management is a work that:

"encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies."

Council of Supply Chain Management Professionals

From this definition, it emerges the broadness of the environment considered, which goes far beyond the boundaries of the company, going to include partners, suppliers and customer. Hence, it becomes essential to manage and plan in an integrated way the value flow from the very beginning of the process, where the raw materials are sourced, until the end when the product is delivered to the customer (Lummus & Alber 1997). It is important to handle this value chain in an integrated way in order to maximize and capture all the value embedded in the product.

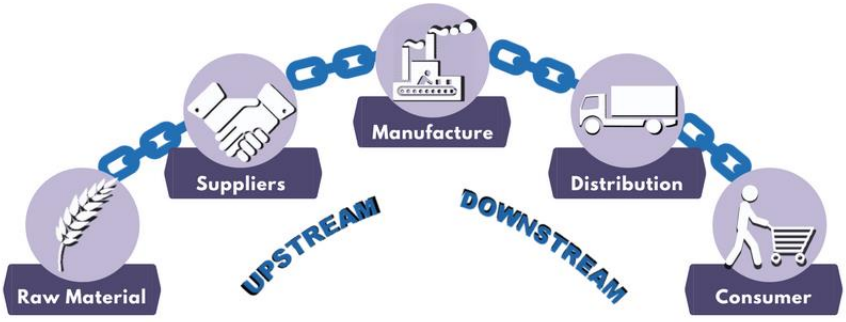

Figure 10 Supply chain

Since the integration of the concept of sustainability into business model, the concept of supply chain had to evolve in order o to include also the environmental and the social aspects.

Green supply chain

With the regard of environmental side, the supply chain had to become green, which according to Srivastava (2007) it means;
"integrating environmental thinking into supply chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life."

Starting with the Green Design, the product has to be ideated in order to be as much environmentally friendly as possible. Hence, it is critical introducing the concept of Life-Cycle-Assessment, which is a process aiming at measuring all the impacts that the products have over the environment from cradle to grave. This means that the analysis encompasses the very beginning phases of raw material extractions, it considers the intermediate phases such as manufacturing, distribution, transportation and include the final moments when the product is utilized by the customer, possibly reused and recycled and finally disposed. Results of this analysis identify how the product affects fields such as climate change, global warming, ozone layer depletion, terrestrial acidification, water eutrophication and others. Thanks to this analysis, the designer can understand which areas are the more burdensome in term of product impact on the environment and ideate some solutions to improve it (Noya et al., 2017; Recanati et al., 2017).
This process has to continue with the selection and the management of suppliers that follow proper environmental criteria and that are responsible. Additionally, the focal company has the duty to exert its bargaining power to influence the behaviour of suppliers and to push them towards more environmentally friendly practices (Bocken et al., 2014; Pal, 2017).
The green supply chain then deals with green operation, including manufacturing/remanufacturing and logistics. These activities have to be conceived in

order to reduce the ecological burden, by including the proper technologies and materials and by remanufacturing worn-out products (Srivastava, 2007). Finally, logistic should include reverse processes, that aim at making disposed products come back at the production facility, so that being able to dispose them in a proper way or to recapture the value (Maruglio, 1991)

Corporate Social Responsibility

Supply chain has to be also socially responsible regarding the communities and the workers involved at all the levels of the productive chain. Hence, it has to embrace the so-called "Corporate Social Responsibility" (CSR), in its code of conduct, thus engaging itself in philanthropic activities, in being as much transparent as possible and in guaranteeing ethical and fair trade. When a company does that, it strives to produce always high-quality products and in parallel it discloses the relevant information about the environmental and the social "costs" of its process with the aim of being completely transparent. Ethic and fairness are values rooted deeply in those companies, which guarantee their employees with human rights, healthy and safety working places and worthy wages, sufficient to allow them a dignified living conditions (Murmura et al., 2017). When they do business, they strive to respect their obligations and they abide by norms and rules set by the society and the legislation. In addition, they engage in philanthropic activities such as donations and charity. There exist in the market many standards and certificates that support Corporate Social Responsibility. One of the most know is the Global Reporting Initiative (GRI, 2018), which provides a global recognizable standard of reporting regarding company's CSR performance. Other notable standards that push companies to adopt the aforementioned code of conduct are those that issue certificates against specific requirements related to CSR. Among these standards it is possible to recognize Social Accountability 8000 (SA8000), iso 26000, Fair Labour Association (FLA), AccountAbility 1000 (AA1000) (Camilleri, 2017; Murmura et al., 2017; Štrukelj and Duh, 2017)

1.4.5 Sustainable supply chain practices

In this sub-chapter, it will be shown a table with a list of practices divided per stage of supply chain. In this way, it is possible to understand the variety of the possible practices implemented by the company in order to be sustainable:

In this sub-chapter, a list of possible sustainable practices derived from the literature is presented. The practices are divided according to the different stage of the supply chain they refer:

- Upstream practices: these are referred to the relationship that the company has with the suppliers, how they chose and manage them during their interaction. They are practices that aim at having a responsible supply base, where the environment is preserved and the workers are treated fairly end ethically
- Internal practices: these practices are those adopted internally by the company. So, they refer to practices related to internal certifications, human resources management, eco-friendly production processes etc.
- Design & New product development practices: they refer to design strategy aimed at having a product that is environmentally friendly and that last longer, so that the rate of demand could decrease.
- Downstream processes: these practices are related to the part of supply chain that concerns the distribution and the customers management.
- Network practices: they refer to the creation and management of a network with the purpose of having an impact both on the environmental and the social side.
- Marketing practices: they are practices that want to promote sustainability to the public.

Upstream practices

Practice name	Description	Authors
Transparency & information sharing with suppliers	Sharing information along the supply chain/network in order to increase the efficiency and effectiveness of the processes, aiming at an increased sustainability.	Kiil et al., 2017 Pagell and Wo, 2009

Local Chain	Supply from local manufacturer to decrease the emissions due to the transportation, increase the cooperation as well as develop the local community.	Pagell and Wo, 2009 Carrigan et al., 2017
Responsible procurement	It means selecting suppliers that meet environmental and social standards/criteria. The selection might be based on the possession of certifications.	Pal, 2017 Bellantuono et al., 2017 Winkler, 2011 Pagell and Wo, 2009
Choice editing	It aims at eliminating poor product components, processes and business model by training suppliers and providing them with technical guidelines.	Pal, 2017 Pagell and Wo, 2009
Environmental and social monitoring of suppliers	This practice refers to monitoring suppliers' sustainability through questionnaire and visit on site.	Klassen & Vereecke, 2012 Zhao et al., 2007
Collaboration with suppliers	This practice refers to collaborating with suppliers in order to combine the efforts for reaching higher sustainable performance.	Pagell and Wo, 2009 Awaysheh and Klassen, 2010
Ethical and Fair Trade	This means offering a worthy wage to all the workers involved, a healthy workplace and social investment for the communities. This imply also selecting suppliers that comply with this code of conduct.	Todeschini et al., 2017 Pal, 2017 Yang et al., 2017 Choong-Ki Lee et al., 2017 Carrigan et al., 2017

Table 12 Upstream practices

Internal practices

Practice name	Description	Authors
Adopting organic & benign	Implement organic and benign materials, which are good for people and the environment.	Pal, 2017 Bocken et al., 2014 Shang-Yu Liu et al., 2017

materials and processes		
Adoption of renewable energies	Using renewable energy, which avoid the impoverishment of the planet.	Pal, 2017 Bocken et al., 2014
Additive manufacturing	Additive manufacturing allows an increase of material efficiency (less waste), thus less burden for the environment and less cost for the company.	Pal, 2017
Recycling	Turning a product into raw material, that can be used again, for the same kind of product, but also for a new one.	Pal, 2017 Bocken et al., 2014 Balkenende and Bakker, 2015
Upcycling	Upcycling is the conversion of waste into products of better quality and environmental use.	Teli et al., 2015 Sung et al., 2014
Repurpose, reuse	Reusing a material or a product more times. In case of repurpose, the material/product changes its purpose.	Pal, 2017 Stubbs and Cocklin, 2008 Short et al., 2014
Remanufactured fashion	The scope of this practice is remanufacturing a used item in a way that its quality can be comparable to a newly manufactured one.	Pal, 2017 Sinha et al., 2015
Eco-labelling	This practice refers to obtain a certified eco-label (applicable on the product) that guarantee that the item respect specific sustainability standards.	Bronnmann and Asche, 2017 Pal, 2017 Schrader and Thogersen 2011

Third-party certifications	This means getting hold of certifications that prove the sustainability of the company's manufacturing practices.	Pal, 2017 Stubbs and Chris, 2008
Ethical and Fair Trade	This means offering a worthy wage to all the workers involved, a healthy workplace and social investment for the communities.	Todeschini et al., 2017 Pal, 2017 Yang et al., 2017 Choong-Ki Lee et al., 2017
Adoption of the Higgs Index	This index is a tool developed by the sustainable apparel coalition (SAC), to measure environmental and social impacts of the fashion supply chain.	Pal, 2017
LCA (lifecycle assessment)	This means that the company measures the environmental and social impacts of the product throughout its whole life.	Kasurinen et al, 2017 Dyllick and Ros, 2017
Resource optimization/efficiency	This practice aims at reducing the consumption of resources (such as energy), by optimizing them. In this way companies obtain also savings.	Bocken et al., 2014 Short et al., 2014
Hand-crafted products	It refers to product hand-crafted by artisans. This practice usually brings a longer product lifecycle and is helpful for local manufacturers.	Fletcher, K. 2010; Fletcher et al., 2012
Pollution prevention	This practice refers to enhance internal efficiency in production and operations in a way that the pollution generated in term of emissions and waste is prevented.	De Stefano et al., 2016
Utilization of by-products	This practice refers to the utilization of the by-products of a process as an input for other processes, thus reducing waste and increasing material efficiency.	Dong et al., 2017 Kılkış and Kılkış, 2016 Stubbs and Cocklin, 2008

Reduction & elimination of waste	This practice aims at reducing or even eliminating waste generated during production and operations.	Stubbs and Cocklin, 2008 Kiil et al., 2017

Table 13 Internal practices

Design & New product development practices

Practice name	Description	Authors
Eco-design (eco-innovation)	Choosing the materials, the functionalities and the characteristics of the product in a way that the product is environmentally sustainable through all its life-cycle. This means reducing GHG emissions, water usage, avoiding toxic and hazardous materials…	Pal, 2017 Regenfelder et al., 2016 Dyllick and Ros, 2017 Akan et al., 2016 Stubbs and Cocklin, 2008
Design for sustainability	Differently to eco-design that considers just environmental aspects, design for sustainability considers also social and economic sustainability.	Dyllick and Ros, 2017
Cradle-to-cradle	This concept considers the idea that when it is not possible to recollect the material lost in the production, it is important to design it to be benign for the environment and preferably nutrient for it.	Pal, 2017 Dyllick and Ros, 2017
Design for reuse/upgrading/easy maintenance/easy replacement	These design practices aim at extending the life of a product, by tackling the issue of planned obsolescence.	Pal, 2017 Bocken et al., 2014 Balkenende and Bakker, 2015 Winkler, 2011
Design for recycling	This practice refers to design the product in a way that it will be easier to recycle it: materials need to be all recyclable, limited in variety and pure; the connection should	Balkenende and Bakker, 2015 Winkler, 2011

	be not fixed and it should be possible to break components down into uniform and relatively high size pieces.	
Product durability and longevity	This idea considers products designed in a way to have a long lifecycle, meaning high durability and long product replacement cycle. This encourages slow fashion.	Bocken et al., 2014 Pal, 2017
Exploration of new fabrics	This practice refers to the research of new green materials, which do not harm people or environment, through for examples the combination of bio-based fibers and polymer matrixes. E.g. this exploration can be done by mean of the green chemistry.	Pal, 2017 Pleissner, 2017
Timeless design	Product that does not go out of fashion.	Pal, 2017

Table 14 Design & New product development practices

Downstream practices

Practice name	Description	Authors
Distribution & transportation	Planning the distribution/transportation activities in a way to maximize the efficiency, thus decreasing costs and environmental impact.	Bellantuono et al., 2017 Stubbs and Cocklin, 2008
Change of transportation mode	Adopting transportation methods that have relatively less environmental impacts (e.g. railway, sea)	Dekker et al., 2012 Wu and Dunn, 1995 Sarkis, 1999
Collaboration with customers	This practice refers to collaborating with customers to increase the sustainability of the company.	Pagell and Wo, 2009
Revers logistics	Operations of collection, sorting and disposition of used items. Sorting techniques can be done with RFID, barcode, optical Near-Infra-Red etc.	Pal, 2017 Bocken et al., 2014 Corvellec and Stål, 2017 Yang et al., 2017

Information disclosure	Disclosing information about the degree of sustainability of the company and of its supply chain.	Pal, 2017
Leasing	It means that the company allows the customer to use one of its item for a limited period of time, with the ownership still of the company.	Pal, 2017 Todeschini et al., 2017 Corvellec and Stål, 2017
Repairing & maintenance	This practice is a service offered by the company, which repairs the ruined item.	Pal, 2017 Corvellec and Stål, 2017
Second-hand reselling	Selling a used product to a new customer.	Pal, 2017 Yang et al., 2017
Consumer education	Since customers have impact both directly through product utilization and indirectly through purchasing, they need to be educated and driven towards a sustainable behaviour.	Schrader and Thogersen, 2011
Market places for second hand	This practice refers to the creation of market places where people can trade their second-hand products. E.g. Patagonia created an e-bay based store to facilitate second-hand clothing trading rather than discarding.	Chouinard and Stanley, 2012 Bocken et al., 2014

Table 15 Downstream practices

Network practices

Practice name	Description	Authors
Circular economy	The circular economy is a paradigm which aims at maximizing the utilization of the resources through the application of these concepts: circular supplies, resource recovery, product life	Pal, 2017 Esposito et al., 2015 Bocken et al., 2014 Regenfelder et al., 2016 Kılkış and Kılkış, 2016

	extension, sharing platforms and product as a service.	
Extended product responsibility	It means the company has to plan and to pay for the recycling and disposal of their sold products at the end of their lives.	Pal, 2017
Social business	This practice means doing business prioritizing a social mission, without forgetting of the profit generation.	Grassl, 2012 Bocken et al, 2014 The North Circular, 2016 Reddy, 2014
Hybrid business models	This practice refers to have two entities inside the company: one is a traditional for-profit that uses part of its profits to finance the other non-profit enterprise	Bocken et al., 2014
Charity & donations	This practice refers to donate products and money to humanitarian organizations and communities.	Pal, 2017 Stubbs and Cocklin, 2008
Collaboration with non-profits, local communities, NGOs, other for-profits	This practice refers to collaborations made with humanitarian and environmental purpose.	Pal, 2017 Stubbs and Cocklin, 2008 Bocken and Allwood 2012
Franchising	This practice refers to expand the company's business by allowing other companies to adopt the trade-name or the business model of the franchisor, thus allowing it to grow without need to finance or manage directly all the operations.	Dant et al., 2011

Crowdsourcing	This practice refers to getting ideas and information by asking directly to the crowd about the specific topic.	Soon and Saguy, 2017 Brabham, 2008
Open innovation	It means trying to get innovation by looking outside of the company, through apposite forum and platforms.	Chesbrough and Crowther, 2006
Restorative actions	This practice means that the company tries to restore the resources that have used for its production and operations, sometimes even more.	Stubbs and Cocklin, 2008

Table 16 Network practices

Marketing practices

Practice name	Description	Authors
Incentives	This practice refers to incentives made to drive customer behaviour for sustainability purpose. E.g. giving a coupon for each returned item at the end of its life.	Pal, 2017 Loughran and Kulick, 2004
Slow fashion	This practice refers to avoid obsolescence of desire and of technology, as well as selling products which are durable.	Pal, 2017 Bocken et al., 2014 Yang et al., 2017
Choice editing	It refers to removing poor products from the shelves, or by encouraging customers towards better products through pricing strategies or marketing efforts.	Bocken and Allwood, 2012
Communication of the company's sustainability involvement	This practice refers to activities made by the company to let the customers know about the efforts made in the area of sustainability.	Li et al., 2015 Keskin et al., 2013

Table 17 Marketing practices

1.5 Sustainable Business Model Innovation

The introduction of sustainability happened thorough a continuous process of business model innovation. This chapter presents first of all the driver observed in the literature, that brought to the adoption of sustainability, by already existing companies and by new start-up. Then it is presented the literature regarding sustainable business model innovation, with the explanation of the eight Bocken's archetyps.

1.5.1 Drivers

The integration of sustainability into the business model of a company can be pushed by different factors, here called drivers, that influence the organization or the entrepreneur and make them innovate the business model towards the sustainability, or even make the founder start a sustainable company. In the literature, many drivers were recognized, which can be categorized in:

- Governmental
- Competitiveness
- External pressures
- Intra organizational
- Personal

Governmental

These drivers depend on government intervention, which stimulate the adoption of sustainable practices through means such as incentives, taxation and rules (Esposito et al., 2017; Saeed et al., 2017). The government here takes an active role in promoting sustainability and in correcting the imperfections that are created by the market, following a neoclassical view (Harris, 2000).

Competitiveness

As it was explained before, sustainability can be a mean to gain competitiveness in the market. In fact, one principle of sustainability is to increase the efficiencies of the process, thus allowing to cut costs (Dyllick and Muff, 2015; Vieisa et al., 2017; Saeed et al., 2017).

This cost saving sometimes is related to the introduction of a new technology, that for example allows a better resource utilization, thus reducing waste. This technology innovation can contribute to competitiveness also in other ways, such as by opening up the possibility to use new sustainable materials, or by even enabling the creation of a new eco-friendly one. Hence sustainability can position positively the brand in the market with a consequent increase in the competitiveness (Dyllick and Muff, 2015; Rueda et. Al, 2016).

External pressures

External pressures can come from many directions. First, they can come from customers and suppliers. These drivers are strictly related to the competitiveness seen before, as Porter recognizes them as two of the five forces that influence the competitiveness of a company (Porter, 1979). In fact, if they possess a certain level of bargaining power, suppliers and customers can push the company in a direction rather than another. It can happen that this bargaining power is utilized as a driver towards sustainability (Saeed et al., 2017; Yoon, 2008; Rashid et al., 2017). However, in a society connected such as nowadays, another important source of pressure come from NGOs, media and communities, that with their voice can strongly influence the market against the company if it does not comply to certain environmental and social standard, hence acting as a driver towards positive practices (Saeed et al., 2017; Todeschini et al., 2017). Additionally, if investors care for environment and society, they can be as well a source of pressure for the company (Ghazilla et al., 2015).

Intra organizational

Drivers can also come from within the company. It can happen that the top management starts to feel close to these topics and decide to switch the business model towards a higher responsibility (Moktadir et al., 2017). Other drivers from within the firm can be the company's culture and structure, that can lean autonomously towards this direction (Saeed et al., 2017; Tello and Yoon, 2008).

Personal

Drivers towards sustainability can also spread from certain values or from a particular lifestyle of the founders or of the owners. They might be naturally predisposed to environmental activism and social fairness. They might feel a sense of moral obligation that drive them to go over this path (Kozlowski et al, 2016; Carrigan et al., 2017). Hence, when a problem or an opportunity related to these topics pass in front of them, they are immediately ready to recognize and address them (Keskin et al., 2013)

1.5.2 Sustainable business model innovation

As previously observed, there are a plenty of drivers that brings companies to sustainability, both in case of being born according to its values and in case of turning the organization in this new direction. This attention to this topic has led to a change of the traditional business model, through innovations that can be of different importance and impact and that contribute to essential progress concerning social, economic and ecological elements (Arnold and Barth, 2012; Arnold and Hockerts, 2011). Considering a business model framework, such as that developed by Osterwalder and Pigneur (2010), an innovation can involve one or more to of the nine building blocks, both by modifying them and by changing the relationship existing between the elements.

Such innovation can arrive in three ways, also depending on the type of driver. These ways typologies are: defensive, accommodative and proactive. The first typology, the defensive, is usually an incremental adjustment made in order to comply with new legislations or to reduce costs and risk of the company. The second, the accommodative, starts to take into considerations some aspects of sustainability as the environment and the society and are a bit more incisive than the previous. The last one, the proactive, is with no doubt the more effective and important business model innovation, where the core business model is redesigned with the purpose of including sustainability inside of it (Schaltegger et al., 2012).

The result of such change in the business model, generate a modification in the value proposition for the customer in the way the companies does business in a system perspective (Amit and Zott, 2012)

Following the work of Bonns and Lüdeke-Freund (2013), sustainable business model innovation can follow three different streams:

- Technological
- Organizational
- Social

Technological

This category includes three different way of technological and business model innovation. The first case is a new business model that want to leverage on an existing technology, for example through a new distribution and application strategy. In this way, some possible barriers can be overcome, hence reaching the final customer. The second case is an existing business model that employees a new technology. In the third case it can happen that a new technology is triggered by a new business model and vice versa.

Organizational

This category includes innovations that concern the structure, the routines and the culture of the company, as well as their internal capabilities. In this area, there fall also initiatives aiming at engaging stakeholders, communities and shareholder.

Social

This category deals with business model related to social value creation. Here the focus of the innovation is creating a business model that has as top priority the creation of social value in the society. Hence, here it is possible to find solutions that have the goal of solving problems such as poverty, inequality, low education level, etc. While in the other cases, the focus of the business model is the economic value creation and societal benefit can occur as a sort of by-products, here the social value itself is the focus and the economic value the by-product (Seelos and Mair, 2005). Therefore, there is a reversal of the traditional logics in doing business.

1.5.3 Sustainable Business Model Archetypes

In order to address the shortcomings from the existence of alternative categorization in literature, Bocken et al., (2014) developed a framework constituted by eight archetypes

with the goal of classifying the sustainable business model with a deep level of detail. These archetypes are divided in three groups according the work of Bonns and Lüdeke-Freund (2013), thus allowing an immediate understanding of the type of innovation considered. These archetypes are (Bocken et al, 2014):

- Maximize material and energy efficiency
- Create value from waste
- Substitute with renewable and natural processes
- Deliver functionality rather than ownership
- Adopt a stewardship role
- Encourage sufficiency
- Repurpose the business for society/environment
- Develop scale-up solutions:

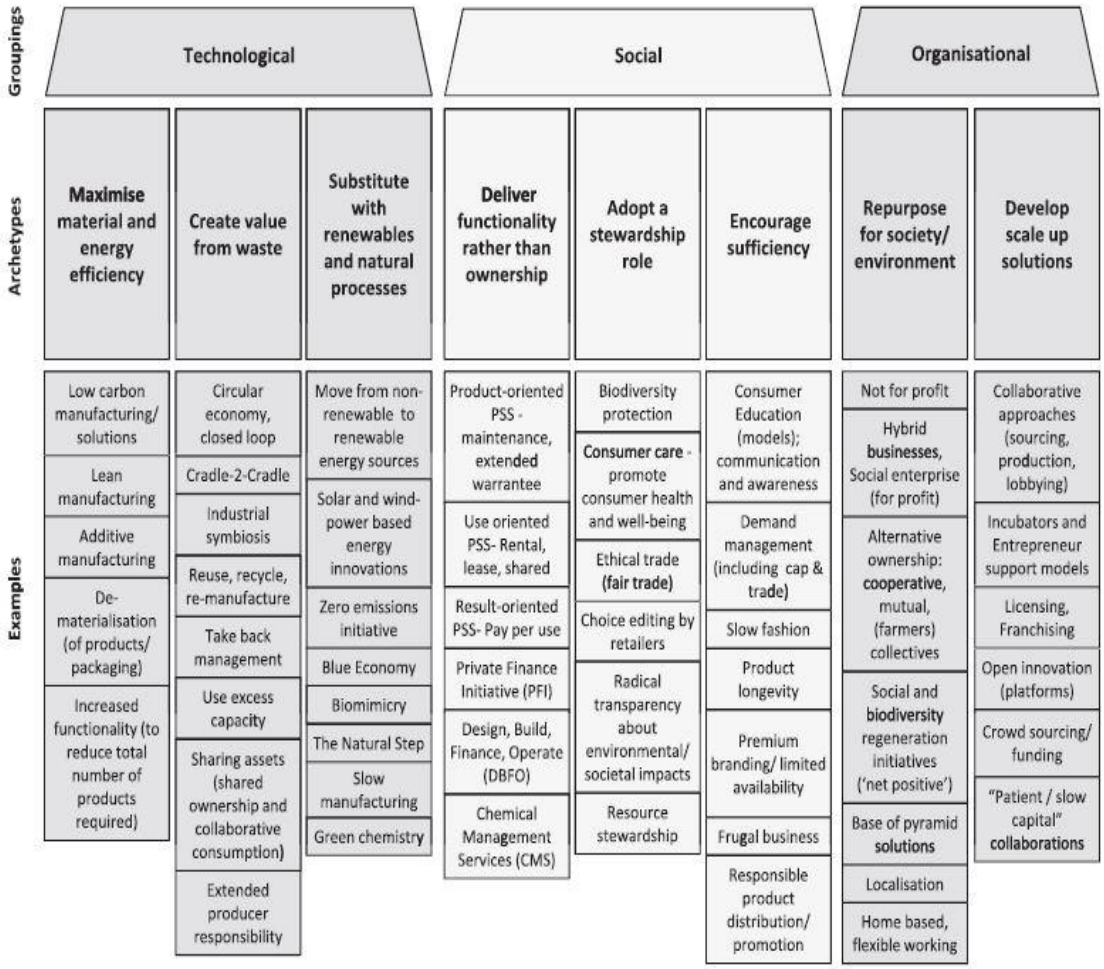

Figure 11 Sustainable Business Model Archetypes (Bocken et al, 2014)

Here below a table that provide Bocken's description of each archetype and some of each main sustainable business models:

1.5.3.1 Maximize Material and Energy Efficiency

This archetype contains all the sustainable practices that aim at increasing the efficiency of the processes and of the resources utilization. Efficiency is desirable both for economic reasons but also for sustainability. In fact, the more the technologies are efficient, the less the resources required and the less the pollution and the waste generated. An emblematic paradigm of production is given by the so-called "Lean Production", which has the aim of being as much efficient as possible. In fact, one of its core principles is the elimination of waste which can be of 7 types, i.e. transport, inventory, motion, waiting, over-processing, over-production and defects. It is immediate understanding that such achievement would be of great impact for the sustainability of the firm. In addition, among the principles of the Lean Production it is possible to find also the continuous improvement orientation, the employees empowerment and the focus on the flow. Further, these principle work together to achieve better results which in turn can bring more sustainability (T. Melton, 2005).

Maximize Material and Energy Efficiency	
Description: “Do more with fewer resources, generating less waste, emissions and pollution”.	
Examples	• Additive manufacturing: such process consists in realizing the product through an additive way, layer after layer and not with the traditional subtractive techniques, where material is removed from an initial form. This way allows a reduction of scraps and waste, as well as an increase in product quality (Pal, 2017). • Lean Production: such paradigm aims at the elimination of all the seven kinds of waste (see above), with the purpose of being as much efficient as possible (Womack and Jones, 2003). • Eco-design: such practice aims at designing products that are efficient during their whole life-cycle. This means that they will be more efficient in the resources utilized, in the water needed and, in the pollution generated both during its production and consumption. Then, they will have a lower impact on the environment (De Groene Zaak and Ethica, 2015; Thomas Dyllick, Zoe Rost, 2017).

Table 18 Maximize material and energy efficiency

1.5.3.2 Create value from waste

This archetype contains practices and business models that aim at creating value from waste. Actually, the concept of waste is left behind since the disposed goods acquire in that optic an intrinsic value, that has to be put back in the supply chain. Examples of this archetype are:

- Cradle-to-Cradle
- Industrial symbiosis
- Circular economy

Cradle-to-Cradle

Cradle-to-cradle (C2C) is a set of principles defined by the organization Cradle-to-Cradle Products Innovation Institute, that, similarly to FairTrade, issues a certificate to those companies that abide by its guidelines and standards. C2C belongs to the family of circular economy, since one of three of its core principles tackle the issue of waste

elimination. These are material reutilization, water stewardship and material health, which means having material not harmful for the people and for the environment, where they eventually will come back, possibly as nutritive material. The other two are renewable energy&carbon management and social fairness, which implies ethical business behaviour and caring about the health and the safety of people (C2C, 2018; Thomas Dyllick and Zoe Rost, 2017).

Industrial symbiosis

Companies belonging to the same district but also from different segment, can create a symbiosis among them with the exploitation of one company's waste and by-products as input for their processes. So, instead of using new resources, there is the utilization of materials that outside the district would be considered waste, but inside are valuable and useful for the process. Industrial symbiosis belongs as well to the family of the circular economy paradigm (Chertow, 2000; Bellantuono et al., 2017).

Circular Economy

Circular Economy is the paradigm that goes in contrast to the traditional linear economy of make, use and dispose. Circular Economy aims at maximizing the value of each product by using it as much as possible, through reutilization, refurbishment, remanufacturing, recycling and only as the last option disposing. In such a way, less resources need to be extracted from the earth and the consequence is less impact on the environment. Circular Economy include also the utilization of renewable energies. (Jouni Korhonen, 2018)

Create Value from Waste	
Description: "The concept of 'waste' is eliminated by turning waste streams into useful and valuable input to other production and making better use of under-utilised capacity".	
Examples	• Cradle-to-Cradle: It is a certification provided by the homonymous organization to companies which follow its five core principles. Among them, reutilization of materials, water stewardship and material health belong to the family of the circular economy. In

	particular, material health allows the materials to come back to the environment once arrived at the end of their lives, without harming it or even working as nutrient (C2C, 2018; Dyllick and Rost, 2017). • Sharing assets: underutilised assets can be considered waste and a way to exploit it is by recapturing its value through shared ownership and collaborations. An example of this point is car sharing (Bocken et al., 2014). • Industrial symbiosis: this paradigm affects districts of firms, where the by-products and the waste of one's process constitutes valuable input for the others' processes (Bellantuono et al., 2017). • Circular economy: this paradigm aims at the maximum exploitation of the products through reusing, remanufacturing, refurbishing and recycling. Then, the concept of waste is abandoned in favour of a continue valorisation of the resources involved (Esposito et al., 2015).

Table 19 Create value from waste

1.5.3.3 Substitute with Renewable and Natural Processes

This archetype considers the practices and the business model that try to substitute traditional ways of doing things, with more sustainable activities and resources. Hence, finite and chemical resources will be substituted with natural and renewable ones. Then, this archetype aims at copying the way the nature operates. In fact, in nature there is not the concept of waste or of negative emission. Everything is a part of a circular way, where everything is reused and do not provide harm to the globe. This is the principle at the base of concepts such as Zero Emission (Pauli, 1997), The Natural Step (Reichart, 2008) and Biomimicry (Benifand et al., 2014).

In term of design, this means ideating a product that it takes into consideration the previous aspects. Hence, design for sustainability is used. Such practice regards the designing phase and wants to enable designer and developer to create products that are sustainable during all its lifecycle. With the purpose of doing that, products are designed with material that are not toxic and that do not harm environment or people. The same for the technologies and the operations needed to realize them. They have to be clean and not

polluting or harmful. Generally speaking, Design for Sustainability (D4S) is made supported by Life Cycle Assessment, with the aim of having less possible impact. In addition, D4S considers also the utility and the social acceptability of the product, hence including in a marginal way also the social side of the sustainability (Dyllick and Rost, 2017).

<table>
<tr><th colspan="2">Substitute with Renewable and Natural Processes</th></tr>
<tr><td colspan="2">Description: “Reduce environmental impacts and increase business resilience by addressing resource constraints ‘limits to growth’ associated with non-renewable resources and current production systems”.</td></tr>
<tr><td>Examples</td><td>Substitute with renewable (no finite) resources: substitute finite materials with renewable materials (e.g. metals with natural resources) and adoption renewable energies such as solar power, wind etc (Bocken et al., 2014).
The Natural Step: this is a paradigm composed by 4 principles which are: "Substances from the Earth's crust must not systematically increase in nature"; "Substances produced by society must not systematically increase in nature"; "The physical basis for the productivity and diversity of nature must not be reduced"; "Energy and other resources must not be used unjustly or inefficiently: Basic human needs must be met with the most resource-efficient methods and technologies available" (Reichart, 2008).
Green chemistry: it is a science that have the purpose of creating materials that are benign for people and for environment. In addition, this science adopts and study processes for depolymerization and consequent polymerization of materials, thus increasing their lives (Pleissner, 2017).
Environmentally benign materials and production processes: it refers to a broad area of innovation that want to replace chemical and harmful materials with organic and benign materials that do not harm people and environment (Bocken et al., 2014).</td></tr>
</table>

	• Zero emissions: it is the ultimate goal of a cleaner production, where the processes do no produce any kind of waste and emission at all. Everything should be reconsidered in order to be an input for another process (Pauli, 1997). • Biomimicry: this idea implies that humans and their companies study and imitate the nature mechanisms, which are full of insights for a more sustainable as well as efficient behaviour (Benifand et al., 2014).

Table 20 Substitute with renewable and natural processes

1.5.3.4 Deliver functionality instead of ownership

In this archetype there are the practices that aim at providing just a service to satisfy the users' needs, while the ownership of the product remains in the hand of the produces. The goal of this practices is to reduce production, since the same product can be used by more users, that otherwise would have required their single own good. The concept at the base of this archetype is that of Product Service System (PSS). This paradigm stands for the integration of the product and the service. This integration can reach different level. Tukker (2004) identifies three types of PSSs. The more basic is the product-oriented PSS, where the product is sold with some additional services, that might be maintenance, insurance etc. A level higher, use-oriented PSS is a system where the product utilization is the service itself. This means that the product's ownership remains of the producer and the costumer pays just for its utilization. Finally, the result-oriented consists in a service where the provider and the customer agree just on a result, that has to be reached no matter what kind of product is utilised. This last PSS type consists for example in services of catering or transportation. PSS stands among the means for sustainability because it is expected to bring a dematerialization of the product in favour of a service, with the consequent reduction of resource consumption (Corvellec and I. Stål, 2017).

Deliver Functionality Instead of Ownership	
Description: “Provide services that satisfy users’ needs without having to own physical products”.	
Examples	• Result-oriented PSS is the highest level of servitization, where the client and the provider agree on a result, but not on a predetermined product involved. Examples are catering and transportation services (Tukker, 2004; 2015; Tukker and Tischner, 2006). • Product-oriented Product Service System (PSS): this practice refers to selling a product with embedded an additional service, that might be maintenance, insurance, take-back option etc (Tukker, 2004; 2015; Tukker and Tischner, 2006). • Use-oriented PSS: this is an intermediate level where the product utilization is the service itself. This means that the customer pays for the utilization of the product but the ownership remains in the hands of the providers. Examples of this system are leasing or sharing (Tukker, 2004; 2015; Tukker and Tischner, 2006).

Table 21 Deliver functionality instead of ownership

1.5.3.5 Adopt a stewardship role

This archetype deals with the well-being and the health of all the stakeholders involved in the supply chain and influenced directly or indirectly by the company’s activity. This means that the company has to choose the suppliers that adopt specific sustainable criteria that guarantee certain conditions to the workers, and that follow some environmental criteria. Further, the company itself has to treat their employees fairly and providing them with fair wages and good working conditions. These practices aim also at empowering the workers, through education and training.

Of this archetype, it is very famous the FairTrade standard, which is strictly linked with the developing countries, where the workers are those living in worst conditions. This standard come from a non-profit organization, FairTrade, which has the goal to sustain these places through the sensitization of the public and through the issue of a certification that guarantees to the final customer that the principles of FairTrade were followed

(considering just the part of the supply chain that had to do with those countries). Workers' human rights, wages that allow a dignified living style, pleasant and safe working place are among of the aspects considered. Beyond these, it is considered also the effort made by the company to develop the community with which it does trade (Fairtrade, 2018; Todeschini et al., 2017).

<table>
<tr><th colspan="2">Adopt a Stewardship Role</th></tr>
<tr><td colspan="2">Description: "Proactively engaging with all stakeholders to ensure their long-term health and well-being".</td></tr>
<tr><td>Examples</td><td>

Fair Trade: this standard developed by the homonymous organization aims at guaranteeing to employees a worthy wage, human rights, health and safe working conditions. In addition, FairTrade wants to bring communities development. Fairtrade is active for developing countries (Todeschini et al., 2017; Fairtrade, 2018; Bocken et al, 2014).
Certifications program: companies might require to be certified by some well-known organizations such as Forestry Stewardship Council (FSC, 2012), of Marine Stewardship Council (MSC, 2012) or Better Cotton Initiatives (Bocken et al., 2014)
Upstream stewardship programs that have these following goals (Bocken et al., 2014):

Employee welfare and living wages
Community development: Education, health, livelihoods
Sustainable growing and harvesting of food and other crops, minimising chemical fertilisers and pesticides, water consumption, and top soil erosion
Environmental resource and bio-diversity protection and regeneration

Supplier selection (upstream stewardship): this means choosing suppliers that are environmental and social concerned, hence having good sustainable performances (Pal, 2017).

</td></tr>
</table>

	• Upstream choice editing: it aims at eliminating poor product components, processes and business model by training suppliers and providing them with technical guidelines (Pal, 2017). • Downstream Stewardship: collection of practices that have the goal to protect customer health. This is of particular importance in sectors such as food, tobacco and beverages, since in the modern society these industries coupled with sedentary life are causing health problems (Bocken et al., 2014). Downstream choice editing: it refers to removing poor products from the shelves, or by encouraging customers towards better products though pricing strategies or marketing efforts. (Bocken and Allwood, 2012)

Table 22 Adopt A Stewardship Role

1.5.3.6 Encourage sufficiency

This archetype aims at reducing the consumption, by promoting products that last long and that do not undergo obsolescence (technological or related to fashion trends). Additionally, the customer is educated to buy just what it needs and discourage the overconsumption typical of nowadays. Such archetype encourages also the second-hand trade, with the same goal of extending the product's life.

An emerging trend belonging to this archetype is that of slow fashion paradigm opposing to the traditional fast fashion. Slow fashion aims at reducing the rate of consumption, by increasing the time of utilization of the purchased item. In order to do so, the product is designed be durable and resistant, possibly with the possibility to undergo maintenance and repair. The price typically is higher and usually the product is craft made. These characteristics wants to create a higher feeling of attachment by the customer. In addition, companies have to avoid the obsolescence of desire, depending on new proposed collection (Pal, 2017).

Encourage Sufficiency	
Description: “Solutions that actively seek to reduce consumption and production”.	
Examples	• Energy saving: companies try to reduce energy consumption by optimizing its utilization. Doing so, they are paid back by the saving achieved and at the same time it is positive for the environment (Bocken et al., 2014). • Incentives to customers to reduce energy consumption (Loughran and Kulick, 2004). • Consumer education: consumers play an important role both directly through emission during the product utilization and indirectly through purchasing. So, they need to be educated and driven in the right direction through incentives, regulations and product functionalities/characteristics that push them adopting a sustainable behaviour (Schrader and Thogersen, 2011). • Product durability and longevity: product designed to be timeless and durable, thus having a very long life-cycle. This encourages slow fashion which fights the overconsumption typical of our society (Bocken et al., 2014; Pal, 2017). • Market places for second hand: creating market places where it is possible to trade second-hand goods is an incentive for the users to take more care of their products, since they will have more value in a second-hand transaction (Bocken et al., 2014). Frugal business models: those are business models that focus on segments in extreme poverty. For this reason, their offer consists in products with very basic functionalities and characteristics, thus allowing low price and utilization cost. (Karamchandani et al., 2011).

Table 23 Encourage sufficiency

1.5.3.7 Repurpose the business for society/environment

This archetype is linked to the concept previous seen of Sustainable Business 3.0. In this case in fact, companies start with the goal of delivering a social or environmental benefit, hence trying to address some existing problems, that have been previously noted. These

are still for-profit companies, but the value captured is then used to finance environmental and social activities (Yunus et al., 2010). In this they are different from charities, that instead depend completely on external donors. These companies that place the environmental and social mission before profit maximizations are called "Social Enterprise". This is a very critical divergence from the traditional economic value creation, where social benefits are just by-products. In a social enterprise, the economic value is the by-product (Seelos and Mair, 2005).

Beyond this pure form, it is possible to recognize also some hybrid form, where coexist the traditional for-profit part together with another part, appositely created by the very firm to address social and environmental issues. In these hybrid companies, the traditional for-profit finances the company's charity branch (Grassl, 2012; Bocken et al., 2014). In this archetype it is possible to find also practices of localization, where the sourcing and production is kept at local level in order to improve the well-being of the local population, allowing the value to be shared with them.

<table>
<tr><th colspan="2">Repurpose the Business for Society/Environment</th></tr>
<tr><td colspan="2">Description: "Prioritizing delivery of social and environmental benefits rather than economic profit (i.e. shareholder value) maximisation, through close integration between the firm and local communities and other stakeholder groups. The traditional business model where the customer is the primary beneficiary may shift."</td></tr>
<tr><td>Examples</td><td>• Social enterprise: it is a for profit organization where the profit s however secondary to its specific social mission. According to Grassl (2012) business models for social enterprise must fulfil at least these conditions:
o Driven by a social mission
o Generate positive externalities (spill overs) for the society
o Recognize the centrality of the entrepreneurial function
o Achieve competitiveness on markets through effective planning and management
• Examples of social enterprises are micro-finance and manufacturing companies that serve countries living in a state of extreme poverty (Yunus et al., 2010).</td></tr>
</table>

	• Non-profit organizations: these organizations exist to pursue a social or environmental mission. They do not have profits and depends on donations (Bocken et al. 2014). • Hybrid business models: these business models consist in a separation of the company's activities in two entities. One is a traditional company that seeks profit generation. Part of these profits are then used to finance the other entity, which is a non-profit with humanitarian or environmental purpose (Bocken et al., 2014). • Social and/or hybrid business include non-traditional approaches such as collaboration of for-profits with non-profits and local communities (Rudrajeet Pal, 2017). Localization and upliftment of local community (Rudrajeet Pal, 2017).

Table 24 Repurpose the business for society/environment

1.5.3.8 Develop scale up solutions

This archetype wants to increase the effectiveness of some positive practices by bringing them from the small scale of the single company, to the larger scale of a network of players. Hence, franchising, licensing and collaboration are used to share positive ideas, knowledge and practices with other organizations in the world, thus increasing the reaching scale of the positive business model.

Develop Scale Up Solutions	
Description: "Delivering sustainable solutions at a large scale to maximise benefits for society and the environment".	
Examples	• Collaborative models: these models are for example crowdsourcing and open innovation. These models have the goal to exploit the knowledge of the mass to source new ideas to sustainable innovations. These collaborative models allow also an increase of job opportunities for people, who can get paid for their contribution (Brabham, 2008). • Franchising and licensing: these are two business models that can expand the adoption of a sustainable business model, because founders are not needed to finance and manage directly all the operations of expansion (Dant et al., 2011).

Table 25 Develop scale up solutions

1.6 Sustainability in the Fashion Industry

The fashion industry is recognized to be one of the most polluting in the world. This is mainly due to the fast fashion paradigm, where products are subjected to premature replacement and early obsolescence (Kozlowski et al., 2012). Such short life-cycle requires an accelerated production speed with consequent huge resource depletion and pollution generation, which continues also during the use phase of the product. Among the impacts occurring during its life-cycle it is possible to find: huge wastewater emissions, solid waste generation, fossil fuels, minerals, resources consumption needed to realize the piece of garment and energy utilization (Allwood, 2006). In addition, such regime of production has a big social impact, in particular to those at the bottom of the supply chain. In fact, fast fashion needs to have low cost operations to be competitive and this has led many companies to relocate their factories in countries where labour force is cheap, and workers' rights are not well protected. Then, in such countries employees have to work long hours, with a very low wage, usually in premises where safety is not guaranteed and working conditions are very poor. However, the use of "sweatshop" labour, with also child employment, generated a very negative publicity to the fashion industry. Consequently, in the 1990s, there was a public reaction against this lack of social

responsibility and companies started to introduce in their operations a new code of conduct oriented to sustainability (Hethorn and Ulasewicz, 2008). Then, slowly there was a raise in sustainable practices at different level of the supply chain which will be treated later. The fashion life-cycle is long and complicated: there is resource production and extraction, fibre and yarn manufacturing, textile manufacturing, apparel assembly, packaging, transportation and distribution, consumer use, recycling and ultimate disposal. Therefore, there are many areas of intervention to make the product more sustainable (Kozlowski et al., 2012).

All these sustainable practices can be classified according to Bocken's archetypes (see before). In this way, it is possible to understand better the company analysed and see which kind of category is following. This is helpful for a research purpose, because for example it is possible to evaluate possible combination of archetypes adopted together, or if different stages of the supply chain adopt different archetypes. Here below, the tables with examples of practices and application in the fashion industry, classified according to Bocken's framework, in order to understand better what each archetype means in the fashion industry. From the literature it is possible to observe that the practices that fall in the archetype of "Maximize material and energy efficiency" and in the "Develop scale-up solutions" are the rarest. "Substitute with renewable and natural processes" provides many example of applications, with the adoption of cleaner processes and of a lot of new eco-friendly materials, such as hemp, viscose, flax, bamboo, organic cotton etc. (Todeschini et al., 2017; Pal, 2017). Usually, the sustainable practices are certified in order to be as much transparent as possible with the customer (an example is the certificate GOTS, which proves the adoption of organic cotton). Further, under the archetype of "Crate value from waste", new materials are continuously created with recycled waste (Todeschini et al, 2017). Under the archetype "Deliver functionality rather than ownership", PSS systems created services where the clothes are rented for a short period of time and that hold back to the producer, which will give them to other consumers (Tukker, 2004). The "Adopt a stewardship role" includes the certifications, such as the already mentioned GOTS certificate, the general practices aiming at guaranteeing the well-being of the workers and the responsible procurement. "Encourage sufficiency" as the name suggest aim at reducing the consumption, through marketing and consumer education. An example is the Patagonia campaign "Don't buy this jacket" that encourages

the customer to buy something only if it needs it (Ekvall et al., 2014). Finally, under the "Repurpose for society/environment" there are examples of companies that sell products made in underdeveloped countries or that employ and support underprivileged people to create the products (Reddy, 2014; Pal, 2017).

Here below, it is possible to find many more examples of sustainable business model application in the fashion industry, following the classification of Bocken's archetypes:

Maximize Material and Energy Efficiency
• Adoption of 3D laser printing to fuse small particles of plastic and print continuous surface without seams into laces (Pal, 2017). • Adoption of concepts such as mono-materials or modular design to allow an easier recycle of the product (Pal, 2017). • Eco-design principles that include both the choice of materials as well as the functionalities of the product throughout its lifecycle. Such functionalities would allow the item to be sustainable during all its life-cycle (e.g. low water and energy consumption, low pollution etc.) (Pal, 2017).

Table 26 Maximize Material and Energy Efficiency in the Fashion Industry

Create Value from Waste
• The companies Adidas and Parley for the Oceans developed sneakers using plastic waste recovered from oceans (Todeschini et al., 2017). • Preza is a is a Brazilian start-up that designs sunglasses made with wood waste (Todeschini et al., 2017). • Second hand is this practice where consumers donate or sell a used cloth to other consumers, thus avoiding increased demand for newly manufactured items and their related resources (Todeschini et al., 2017). • In order to recycle properly it is necessary to adopt some sorting techniques to separate different materials, since each has its own recycling process. Example of sorting technologies are bar code, RFID, optical Near Infra-Red (NIR) (Pal, 2017).

• Remanufactured fashion is a paradigm where an item is remanufactured in a way that its quality can be comparable to a newly manufactured one (Sinha et al., 2015) • There is a Finnish initiative called Relooping that adopts chemical recycling technologies to dissolve cellulose and to create new clothes out of that (Pal, 2017). • Another example of this archetype is Returnity, a 100% recyclable polyester fabric licensed by Dutch aWEARness, used to make workwear and interior-furnishing (Pal, 2017).

Table 27 Create Value from Waste in the Fashion industry

Substitute with Renewable and Natural Processes
• Adoption of different types of environmentally friendly raw materials such organic cotton, hemp, bamboo, lyocell and recycled fibres (Todeschini et al., 2017). • Green textile innovation belongs to this archetype. It refers to many aspects, such as replacing chemical dyes with benign/natural ones or using green chemistry to adopt naturally occurring process in place of traditional industrial processes (Pal, 2017). • LAUNCH Nordic initiative carried out by Nordic countries to promote the use of environmentally friendly materials in fashion and textile (LAUNCH Nordic, 2018). • Under this initiative, Novozymes in Denmark is exploring new uses for enzymes in order to have textiles more durable and less heavy for the environment, resulting in less consumption of water, energy and chemicals (Norden, 2015). • Detox campaign (launched in 2011) pushes global brands to avoid the release of hazardous chemical and toxic water pollution from their supply chain and products (Pal, 2017). • New materials such as bio-composites created through a combination of bio-based fibers like kenaf, hemp, flax, jute, etc with polymer matrices. These are

essential in creating novel processes and bio-fiber matrices interfaces (Pal, 2017).

Table 28 Substitute with Renewable and Natural Processes in the Fashion Industry

Deliver Functionality Instead of Ownership
• Fashion library is a service where the consumer does not have the ownership of the item, but he or she can rent and use it for a limited time. He or she has the possibility to choose the piece of garment from a "library" of clothes provided by the service (Todeschini et al., 2017, Tukker, 2004). • Boomerang has offered since 2008 a service of in-store take-back service in its Swedish stores that aims at reuse and recycling. Boomerang gives a 10% discount for the next purchase to the customer who hand back a piece of Boomerang clothing. (Corvellec et al., 2017) • The Danish company Vigga is an example of result-oriented business model, since it offers the result of dressing babies in chemical free and organic clothes during their first years. They provide clothes and then replace them with new ones as the baby grows. Then, it prepares used clothes for other customers that will adopt the service (Corvellec et al., 2017). • Product-oriented PSS that offers services such as repairing, or maintenance, or by selling durable products through warranties. For example, the Scandinavian company Nudie Jeans offers its customers free in-store repairing service. (Pal, 2017)

Table 29 Deliver Functionality Instead Of Ownership in the Fashion Industry

Adopt a Stewardship Role
• Fair Trade can be applied in the fashion industry. A well-known example is that of People Tree, which sells clothes manufactured in selected firms of emerging countries (Todeschini et al., 2017). • In this sector there are numerous eco-labels such as EU Ecolabel, Nordic Ecolabel, Bluesign, GOT (Global Organic Textile standard), ect. Bluesign for example is a system that tries to avoid the adoption of harmful and toxic raw

materials and chemicals from the beginning to the end of the manufacturing process. (Pal, 2014) • The adoption of indexes of sustainability such as the Higgs Index, a tool developed by the sustainable apparel coalition (SAC) that allows companies to assess environmental and social impacts. Companies that adopt this tool are e.g. Puma, Asics, H&M, Nike, New Balance, Patagonia (SAC, 2018; Pal 2014). • Radical transparency to disclose all the information about the sustainability of the company and of its suppliers. Nike, with the Fair Labour Organization (FLO), an NGO, shares the results of the audits made to its suppliers as well as its factories (Pal, 2017). • Extended Product Responsibility (EPR) that implies for producers to plan and pay for the recollection of their used items and the consequent recycling or disposal (Pal, 2017).

Table 30 Adopt a Stewardship Role in the Fashion Industry

Encourage Sufficiency
• The company Contextura designs products that are timeless and versatile, so that clothes can be used in many situations, thus encouraging less purchasing (Todeschini et al., 2017). • Patagonia has created an e-bay based store to facilitate second-hand clothing trading rather than discarding. This can extend the life-cycle of the product (Chouinard and Stanley, 2012) • Several luxury brands offer timeless handcrafted products, thus supporting local manufacturing and slow fashion. In addition, craftmanship implies higher price and an increased emotional attachment of the consumer, thereby promoting long usage (Fletcher, K. 2010; Fletcher et al., 2012). • Connected to the previous point, the Ethic Fashion Initiative promotes responsibility along the supply chain, by ensuring several benefits to the workers such as dignified working conditions, living wages, minimum environmental impact etc. These benefits generate a perception of higher quality brought by artisanal work and consequently the idea of “buy less for more” (Ethical Fashion Initiative, 2018).

• Nudie Jeans stores offer the possibility to repair worn out customers' jeans without any fee. In alternative, they can take back the jeans, washing, repairing and put them in the second-hand market place. (Pal, 2016) • "Don't buy this jacket" campaign made by Patagonia, to encourage consumers to buy only what they need, considering the effect that consumerism has on environment (Ekvall et al., 2014). • Patagonia's "Common Thread Initiatives" that promotes "Reduce, repair, reuse, recycle" to reduce consumerism (Pal, 2017). • Dream and Awake is a Swedish company that collect old clothes, redesign them, and finally resell them. They also organize workshop where customers can redesign their own clothes, thus increasing the product lifecycle (Pal, 2016). • Second hand is this practice where consumers donate or sell a used cloth to other consumers, thus avoiding increased demand for newly manufactured items and their related resources (Todeschini et al., 2017).

Table 31 Encourage Sufficiency in the Fashion Industry

Repurpose the Business for Society/Environment
• Charity organizations that collet used clothes and arrange donations for humanitarian purpose in under-developed countries (Pal, 2017). • Salvation Army and Oxfam are two organizations that arrange the donations mentioned before. However, they have also developed for-profit arms, where collected clothes are sold to markets such as West Africa and Eastern Europe. These businesses can be considered social because create added activities locally in poorer countries. They are examples of Hybrid Business (Brooks, 2013). • The North Circular is a small UK company that employs a local network of talented home knitters, usually ageing woman, thus mobilizing localized production (localization) (The North Circular, 2018). • Who Made Your Pants? Is a UK co-operative that employs and supports refugee women, where profits are used to sustain the business (Reddy, 2014). • Collaboration between charities and fashion retailer to organize take back and collection schemes (Pal, 2017).

• H&M donates 0,2 € to a local charity for each kilograms of clothes (Pal, 2017). • SEW and Sidai Designs is a social enterprise that provides sustainable and ethical employment to women of Tanzania, by selling their designs and manufactured products through retailers in UK, Australia and US (Smith and Newman, 2014).

Table 32 Repurpose the Business for Society/Environment in the Fashion Industry

Develop Scale-up Solutions
• Open Garment is an EU funded initiative based on open innovation where the virtual user can "designs, configures, orders, publishes, shares, and even sell individual garments. Then, there is a Open Manufacturing-based flexible network of production units that produces customized physical goods. Finally, there is knowledge-based manufacturing service provider (MSP), which is the open platform, acts as a service provider in between" (Open Garments, 2009).

Table 33 Develop Scale-up Solutions in the Fashion Industry

1.7 Sustainable business model framework

As it was explained before in the part of business model definition, there are several frameworks that are used to describe the business model of the company, in particular those developed by Richardson on the one hand, and by Osterwalder et al., on the other hand. However, all these previously considered frameworks have the drawback of being focused just on the customer value and the economic success, ignoring the environment and the social aspects related to the business model (Bocken et al, 2013). In fact, taking for example the framework identified by Osterwalder et al., (2005), it is possible to see that the interest is placed most of all on the customer and on the company's producing activities. That kind of business model works well if the company wants to be successful

from an economic point of view, while it fails in considering the success in term of triple bottom line performance (Upward and Jones, 2016).

Pillar	Business Model Building Block	Description
Product	Value proposition	Gives an overall view of the company's bundle of products and services.
Customer Interface	Target customer	Describes the segments of customers a company wants to offer value to.
	Distribution Channel	Describe the various means of the company to get in touch with its customer
	Relationship	Explains the kind of links a company establishes between itself and its different customer segments.
Infrastructure Management	Value Configuration	Describes the arrangement of activities and resources
	Core Competency	Outlines the competences necessary to execute the company's business model.
	Partner Network	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialize value.
Financial Aspects	Cost Structure	Sums up the monetary consequences of the means employed in the business model
	Revenue Model	Describes the way a company makes money through a variety of revenue flows.

Table 34 Nine Business Model Building Blocks (Osterwalder et al., 2005)

The same happens for the business model framework developed by Richardson (2008). Here too, there is a clear attention to the customer value and how creating and delivering it, but no information about topics concerning sustainability.

Pillar	Description	Element
Value Proposition	What the firm will deliver to its customers, why they will be willing to pay for it, and the firm's basic approach to competitive advantage	The offering
		The target customer
		The basic strategy to win customers and gain competitive advantage
		Resources and capabilities

Value creation and delivery system	How the firm will create and deliver that value to its customers and the source of its competitive advantage	Organization: the value chain, the activity system, and customers
		Position in the value network: link to suppliers, partner and customers
Value capture	How the firm generates revenue and profit	Revenue sources
		The economics of the business

Table 35 The Business Model Framework (Richardson, 2008)

Hence, it is important to enlarge the concepts of value proposition, value creation&delivery and value capture in a way to be able to catch all the aspects of a sustainable business model.

In order to overcome these problems, it will be presented an Integrated Sustainable Business Model, developed appositely for the scope of analysis of this thesis. This model is created by merging the frameworks of Osterwalder et al. (2005) and Richardson (2008). The backbone will be the Richardson's structure composed by Value Proposition, Value Creation&Delivery and Value Capture, since the subdivision Product, Customer Interface, Infrastructure Management and Financial Management are too much oriented to the traditional way of looking at business model and present low adaptability to the inclusion of environmental and social aspects. However, the building blocks can be recombined in order to explain in the clearer way the macro areas of Value Proposition, Value Creation&Delivery and Value Capture.

These macro areas will be articulated so that to include all the three pillars underpinning the Triple Bottom Line, as it will be explained here below:

Value proposition

First, as the traditional models, Value Proposition includes the usual building block related to the customer. Hence, it is composed by the product, the customer target and the customer relationship. In this way it is possible to understand how the company is positioned in the market (Richardson, 2008, Osterwalder et al., 2005). Yet, it is necessary to consider also the environmental and the social value of the business model, that have

to be in balance with the economic perspective. These additional values are related to public benefits that are generated by the company in favour of the society and the environment (Lüdeke-Freund, 2010). In this perspective, the company does not care just about the profit, but it does want to be the least harmful possible for the environment and the society and it is positively engaged towards societal benefits creation (Schaltegger 2002).

Value Creation&Delivery

Following the definition of the Value Proposition, the Value Creation&Delivery considers both the economic, the environmental and the social aspects. Starting from the economic side, this area contains the building block Key Resources, Key Activities, Key Partners and Channels. In this way, it is possible to observe clearly the most important element in the creation of the customer value and in its delivering to the market.

Considering the environmental side, the value is created though green practices, belonging to the concept of green supply chain. Hence, they will fall in areas such as green design, green procurement and green operations. These practices have the goal of reducing the company's impact on the environment (Srivastava, 2007).

Considering the social value creation, this area includes behaviours related to Corporate Social Responsibility (CSR), where the company adopts a stewardship role regarding its workers. This means that they are guaranteed a fair wage and are treated ethically and correctly. Additionally, CSR includes also volunteering and philanthropic activities as well as complete information disclosure (Camilleri, 2017; Murmura et al., 2017). This created value can be delivered to the market through activities such green and social marketing (Peattie & Charter, 2003), certificated products, labels and customer education.

Value Capture

In the economic perspective, Value Capture allows the understanding of the several sources of revenues and costs (Richardson, 2008). Instead, considering the environmental perspective, this area includes the benefits generated by internalized externalities and the costs in term of environmental impact of the company (Bocken et al. 2013; Tukker & Tischner 2006). In the social perspective, this area includes the social benefits deriving by social initiatives underwent by the company in favour of the society, and the eventual social

costs derived by company's activities (Seelos & Mair 2005a; Boschee 1995; Elliott & Freeman 2001).

THE INTEGRATED SUSTAINABLE BUSINESS MODEL

Integrated Sustainable Business Model	**Economic side**	**Environmental side**	**Social side**
Value Proposition	- Product - Customer target - Customer relationship	Environmental value	Social value
Value creation & Delivery	- Key partners - Key resources - Key activities - Channels	Green supply chain - Green procurement - Green design - Green operations Green marketing Certification/labels	Corporate social responsibility - Upstream stewardship - Ethical and fair trade - Volunteering - Philanthropy Social marketing
Value Capture	- Revenues - Costs	Environmental benefits and costs	Social benefits and costs

Table 36 Integrated Sustainable Business Model

2

Research Framework and Methodology

2. Research Framework and Methodology

In this chapter, the first part will deal with the definition of the research questions, defined from the identification of gaps in the literature. Then, it will be presented the methodology adopted in this exploratory case, supported also by guidelines obtained from the literature related to case-study research method. Finally, the sample containing the selected companies will be presented, delineating also their main characteristics, the sources of information adopted and the lists where they were found.

2.1 Definition of the framework of research

The exploratory case study started with the identification of some gaps existing in the literature analysed. The literature considered regarded the application of sustainability among several industries such as those of food, furniture, fashion, electronics etc.

Among them, the fashion industry was one of the most interesting, with a plenty of different sustainable practices, both social and environmental all mentioned in the chapter "Literature Review". Another finding from the literature was that some authors (Saeed et al., 2017; Tello and Yoon, 2008; Ghazilla et al., 2015; Esposito et al., 2017; Todeschini et al., 2017; Kasurinen et al., 2017; Vieisa et al., 2017; Short et al., 2014; Moktadir et al., 2017; Rueda et. Al, 2016; Stubbs and Cocklin, 2008 and others) discussed about several **drivers** that might bring an entrepreneur to adopt sustainability, yet these **drivers** (e.g. cost savings, recognition of an opportunity/problem, competitiveness, desire to improve the well-being of a community etc) were very general and there was no explanation about how these drivers influence the company in a direction rather than another regarding the sustainability. In particular, there is no connection between the drivers and the archetypes defined by Bocken et al. (2014). Additionally, the literature does not provide any work about the differences between companies that were born sustainable with those that embraces sustainability afterwards. This gap was recognized from the evidence that key words such as "drivers of sustainable start-up", "drivers for born sustainable companies", "born sustainable companies" did not produce any interesting results on research engine such as Scopus and ResearchGate.

Hence, this thesis has the goal to address and fill the aforementioned gaps in the literature by answering these two research questions:

RQ1: What are the drivers to explain the adoption of a certain sustainable business model archetype in the fashion industry?

Such question tries to find an answer by looking at the drivers that brought the entrepreneur to adopt a business model belonging to an archetype rather than another.

By looking at different cases that have the same archetype, this work aims at understanding which were the drivers in common, thus getting an idea of the path that drives the entrepreneur to a specific archetype rather than another.

RQ2: For each archetype, which are the differences between the drivers for the companies born sustainable and the non-born sustainable companies (i.e.the companies that were not born sustainable, but became sustainable)?

This research question tries to understand the differences among the drivers of each archetype, with the goal of discriminating between those belonging to born sustainable companies with those non-born.

The archetypes considered are those belonging to the framework provided by Bocken et al. (2014), which were explained in detail in the chapter of the "Literature Review". Here below it is presented the research framework:

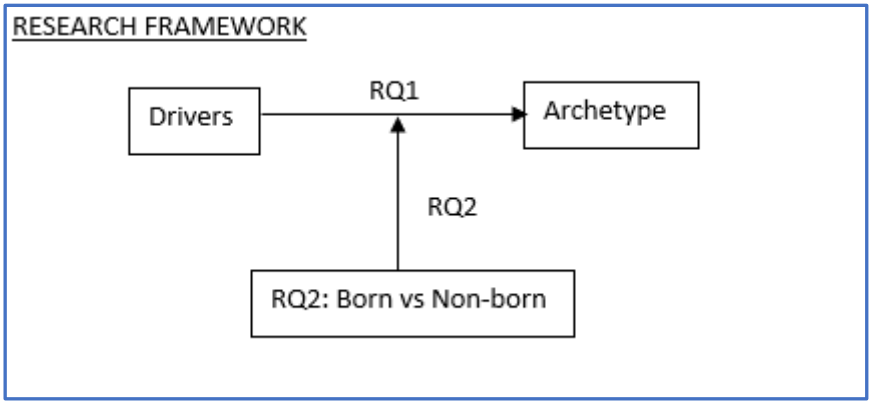

Figure 12 Research Framework

2.2 Literature review on Case-study methodology

Case-study research is a methodology that have great potentialities to increase the theory existing on a topic. It is suited in cases when the situation analysed is contemporary and

not under the control of the investigator, and the questions of research are of the type of "why" or "how" (Yin, 2009). When applied in the correct situation and with a proper structure, this method can prove very effective to generate novel theory. In fact, the analysis of multiple cases forces the investigator to "unfreeze" its thinking, thus creating new knowledge. Further, the likelihood of the validity of the knowledge extracted is high, because it comes from evidence of empirical observation (Eisenhardt, 1989). However, this method has the drawback of heaviness in term of amount of information collected and of being liable to incorrect insights of the investigator. For this reason, it is of paramount importance to follow a precise methodology, that allows the investigator to focus on the proper information and to avoid biased judgment (Yin, 2009).

The first step of this methodology is to analyse the existing literature. Such activity allows the researcher to understand the gaps existing in the knowledge, thus helping him/her to develop the proper research questions aiming at filling those gaps. Additionally, the literature is helpful also in defining some a priori constructs, that will become useful in the collection of data and in their analysis afterwards (Yin, 2009; Eisenhardt, 1989). Hence, after this first activity, the next phase is to define the desired research framework, with the questions that want to be answered.

At this point, the investigator can start to select the cases that it reckons more relevant for the analysis. In doing so, it is critical having a proper number of cases so as to control the variation existing among them. This process can be done randomly but it is not mandatory. In fact, Pettigrew (1988) noted that due to the limited number of cases studied, it makes sense to choose them so that they are extreme situations and polar types and where the process can be observed easily. In any case, according to Eisenhardt (1989) the suggested number of cases are between 4 and 10, since a lower number would not provide convincing grounding for any possible insight and with a higher number it would become complex to deal with the great amount of data.

Then, the collection of the information can begin. This process can be done through different means such as interviews, observations and secondary sources like articles of newspapers or firm correspondence (Eisenhardt, 1989). After having collected the information, it is possible to start the analysis of the cases (however, additional cases can be added also during the analysis of the data). This analysis is divided in two parts: the first one is the "Within-Case Analysis" and the second one is the "Cross-Case Analysis"

(Eisenhardt, 1989). During the "Within-Case Analysis", the material obtained undergoes a process called "Coding", where all the data are examined line by line in order to find significant events, experiences, feeling and so on, that can be denoted as concepts (Strauss & Corbin, 1998). Then, at each of this concept is assigned a "code", which is a label that explains synthetically that piece of information and those codes are next grouped in categories based on shared characteristics.

Concluded the "Within-Case Analysis" (also here there could be iterations between the different steps), the "Cross-Case Analysis" can begin. At this stage, different cases are compared in order to find similarities and differences, with the goal to find some patterns between the codes and categories. In this way, it is possible to understand the relationships that exist between the different concepts emerged by the analysis, thus acquiring a model of the real situation, able to answer the initial questions of "how" and "why".

2.3 Identification a priori of the constructs

After the definition of the research framework, following the guidelines provided by the literature on case study research, this phase is dedicated to acquiring a consistent knowledge about the how sustainable archetypes (Bocken et al., 2014) are implemented in the fashion industry. In this way, it was easier understanding the specific archetype of the cases analysed

The same for the drivers. In fact, the knowledge extracted by the literature is helpful because it allows the researcher to be aware of what pay attention to during the data collection. It allows also to ask the proper questions to the interviewed, thus leading to the more complete results.

2.4 Identification of the company's archetype

Usually sustainable companies adopt practices that fall in more than one archetype of Bocken et al., (2014). However, the focus on the company is usually just one archetype or maybe two, in case of hybrid companies. Such focus was identifiable through for example the value proposition or the mission of the company. In fact, in all the cases the companies stated in their value propositions/mission the orientation towards a certain sustainable business model rather than another.

It was possible to understand the company's archetype by comparing these value propositions or significant statements with the definitions of Bocken et al., (2014) and the relevant practices identified in the literature regarding the fashion industry and classified according to the archetypes: here below they are presented with also the explanation of the Value Proposition, Value Creation&Delivery and Value Capture provided by Bocken et al., (2014) for each archetype:

Maximize material and energy efficiency

The value proposition of this archetype is to generate products and services that are less burdensome in term of resources adopted, waste and emissions generated compared to traditional products with the same similarities.

This value is created and delivered through activities and partnership aiming at using less resources and being less burdensome in term of waste and emissions generated. These practices allow to capture a value in term of less environmental footprint (less waste, less materials adopted, less water used etc). Here below, a table with examples of applications of this archetype in the Fashion Industry.

Maximize Material and Energy Efficiency
• Adoption of 3D laser printing to fuse small particles of plastic and print continuous surface without seams into laces (Rudrajeet Pal, 2017). • Adoption of concepts such as mono-materials or modular design to allow an easier recycle of the product (Rudrajeet Pal, 2017). • Eco-design principles that include both the choice of materials as well as the functionalities of the product throughout its lifecycle. Such functionalities would allow the item to be sustainable during all its life-cycle (e.g. low water and energy consumption, low pollution etc.) (Rudrajeet Pal, 2017).

Table 37 Maximize material and energy efficiency

Create value from waste

The value proposition of this archetype refers to the elimination of waste, which is turned into a valuable product. This value is created and delivered through activities aiming at closing the material loop and make best use of under-utilised capacities. Additionally, new partnerships can deliver holistic "nature inspired" solutions. The value capture is the

reduction of the environmental footprint, with reduced virgin materials used. Here below, a table with examples of applications of this archetype in the Fashion Industry.

Create Value from Waste
• The companies Adidas and Parley for the Oceans developed sneakers using plastic waste recovered from oceans (Todeschini et al., 2017). • Preza is a is a Brazilian start-up that designs sunglasses made with wood waste (Todeschini et al., 2017). • Second hand is this practice where consumers donate or sell a used cloth to other consumers, thus avoiding increased demand for newly manufactured items and their related resources (Todeschini et al., 2017). • In order to recycle properly it is necessary to adopt some sorting techniques to separate different materials, since each has its own recycling process. Example of sorting technologies are bar code, RFID, optical Near Infra-Red (NIR) (Pal, 2017). • Remanufactured fashion is a paradigm where an item is remanufactured in a way that its quality can be comparable to a newly manufactured one (Sinha et al., 2015) • There is a Finnish initiative called Relooping that adopts chemical recycling technologies to dissolve cellulose and to create new clothes out of that (Pal, 2017). • Another example of this archetype is Returnity, a 100% recyclable polyester fabric licensed by Dutch aWEARness, used to make workwear and interior-furnishing (Pal, 2017).

Table 38 Create Value from Waste in the Fashion industry

Substitute with renewable and natural processes

The value proposition of this archetype is of reducing the environmental impact and increasing the business resilience by addressing resources constraints linked with non-renewable resources and artificial production systems. The value is created and delivered through product and process innovations that introduces renewable and natural resources. This value capture is a reduction of synthetic waste, of non-renewable resources depletion

and emissions associated with burning fossil fuels. Here below, a table with examples of applications of this archetype in the Fashion Industry.

Substitute with Renewable and Natural Processes
• Adoption of different types of environmentally friendly raw materials such organic cotton, hemp, bamboo, lyocell and recycled fibres (Todeschini et al., 2017). • Green textile innovation belongs to this archetype. It refers to many aspects, such as replacing chemical dyes with benign/natural ones or using green chemistry to adopt naturally occurring process in place of traditional industrial processes (Pal, 2017). • LAUNCH Nordic initiative carried out by Nordic countries to promote the use of environmentally friendly materials in fashion and textile (LAUNCH Nordic, 2018). • Under this initiative, Novozymes in Denmark is exploring new uses for enzymes in order to have textiles more durable and less heavy for the environment, resulting in less consumption of water, energy and chemicals (Norden, 2015). • Detox campaign (launched in 2011) pushes global brands to avoid the release of hazardous chemical and toxic water pollution from their supply chain and products (Pal, 2017). • New materials such as bio-composites created through a combination of bio-based fibers like kenaf, hemp, flax, jute, etc with polymer matrices. These are essential in creating novel processes and bio-fiber matrices interfaces (Pal, 2017).

Table 39 Substitute with Renewable and Natural Processes in the Fashion Industry

Deliver Functionality Instead of Ownership

The value proposition is to reduce the production throughput of materials, by providing the customers with goods, without giving them the ownership. In order to create and deliver this value, a lot of customer contacts and educations is required to make them shift away from the need of ownership. The value capture is that keeping the ownership in-house allows a reduction of the prices, thus enabling consumers to access previously

expensive products. Here below, a table with examples of applications of this archetype in the Fashion Industry.

Deliver Functionality Instead of Ownership
• Fashion library is a service where the consumer does not have the ownership of the item, but he or she can rent and use it for a limited time. He or she has the possibility to choose the piece of garment from a "library" of clothes provided by the service (Todeschini et al., 2017, Tukker, 2004). • Boomerang has offered since 2008 a service of in-store take-back service in its Swedish stores that aims at reuse and recycling. Boomerang gives a 10% discount for the next purchase to the customer who hand back a piece of Boomerang clothing. (Corvellec et al., 2017) • The Danish company Vigga is an example of result-oriented business model, since it offers the result of dressing babies in chemical free and organic clothes during their first years. They provide clothes and then replace them with new ones as the baby grows. Then, it prepares used clothes for other customers that will adopt the service (Corvellec et al., 2017). • Product-oriented PSS that offers services such as repairing, or maintenance, or by selling durable products through warranties. For example, the Scandinavian company Nudie Jeans offers its customers free in-store repairing service. (Pal, 2017)

Table 40 Deliver Functionality Instead Of Ownership in the Fashion Industry

Adopt a stewardship role

The value proposition stays in the broader benefits to stakeholders, which can come by telling the full story of production and the supply chain. The value creation and delivery come from activities oriented to guaranteeing stakeholders health and well-being. This can imply the selection of alternative suppliers and the adoption of third-party certification. The value capture can derive from brand value stemming from these activities. Additionally, stakeholder well-being and health generate long term business benefits for the firm. Here below, a table with examples of applications of this archetype in the Fashion Industry.

Adopt a Stewardship Role
• Fair Trade can be applied in the fashion industry. A well-known example is that of People Tree, which sells clothes manufactured in selected firms of emerging countries (Todeschini et al., 2017). • In this sector there are numerous eco-labels such as EU Ecolabel, Nordic Ecolabel, Bluesign, GOT (Global Organic Textile standard), ect. Bluesign for example tries to avoid harmful and toxic raw materials and chemicals from the beginning of the manufacturing process. (Pal, 2014) • The adoption of indexes of sustainability such as the Higgs Index, a tool developed by the sustainable apparel coalition (SAC) that allows companies to assess environmental and social impacts. Companies that adopt this tool are e.g. Puma, Asics, H&M, Nike, New Balance, Patagonia (SAC, 2018; Pal 2014). • Radical transparency to disclose all the information about the sustainability of the company and of its suppliers. Nike, with the Fair Labour Organization (FLO), an NGO, shares the results of the audits made to its suppliers as well as its factories (Pal, 2017). • Extended Product Responsibility (EPR) that implies for producers to plan and pay for the recollection of their used items and the consequent recycling or disposal (Pal, 2017).

Table 41 Adopt a Stewardship Role in the Fashion Industry

Encourage sufficiency

The value proposition is of reducing demand-side consumption and as consequence the production. The value is created and delivered through activities, partners and customer relationship focused on consuming less, wasting less and using products longer. In this paradigm, the system discourages the concept of over-selling. The value capture is both a higher customer loyalty (the product last longer) and a minor resource use. Here below, a table with examples of applications of this archetype in the Fashion Industry.

Encourage Sufficiency
• The company Contextura designs products that are timeless and versatile, so that clothes can be used in many situations, thus encouraging less purchasing (Todeschini et al., 2017).

- Patagonia has created an e-bay based store to facilitate second-hand clothing trading rather than discarding. This can extend the life-cycle of the product (Chouinard and Stanley, 2012)
- Several luxury brands offer timeless handcrafted products, thus supporting local manufacturing and slow fashion. In addition, craftmanship implies higher price and an increased emotional attachment of the consumer, thereby promoting long usage (Fletcher, K. 2010; Fletcher et al., 2012).
- Connected to the previous point, the Ethic Fashion Initiative promotes responsibility along the supply chain, by ensuring several benefits to the workers such as dignified working conditions, living wages, minimum environmental impact etc. These benefits generate a perception of higher quality brought by artisanal work and consequently the idea of "buy less for more" (Ethical Fashion Initiative, 2018).
- Nudie Jeans stores offer the possibility to repair worn out customers' jeans without any fee. In alternative, they can take back the jeans, washing, repairing and put them in the second-hand market place. (Pal, 2016)
- "Don't buy this jacket" campaign made by Patagonia, to encourage consumers to buy only what they need, considering the effect that consumerism has on environment (Ekvall et al., 2014).
- Patagonia's "Common Thread Initiatives" that promotes "Reduce, repair, reuse, recycle" to reduce consumerism (Pal, 2017).
- Dream and Awake is a Swedish company that collect old clothes, redesign them, and finally resell them. They also organize workshop where customers can redesign their own clothes, thus increasing the product lifecycle (Pal, 2016).
- Second hand is this practice where consumers donate or sell a used cloth to other consumers, thus avoiding increased demand for newly manufactured items and their related resources (Todeschini et al., 2017).

Table 42 Encourage Sufficiency in the Fashion Industry

Repurpose the business for society/environment

The value proposition is a prioritization of the delivering of social and environmental benefits rather than profit maximization. The value is created and delivered by integrating the business with the stakeholders through participatory business approaches. The value

capture is the nutrition, health and education delivered to communities. Here below, a table with examples of applications of this archetype in the Fashion Industry.

Repurpose the Business for Society/Environment
• Charity organizations that collet used clothes and arrange donations for humanitarian purpose in under-developed countries (Pal, 2017). • Salvation Army and Oxfam are two organizations that arrange the donations mentioned before. However, they have also developed for-profit arms, where collected clothes are sold to markets such as West Africa and Eastern Europe. These businesses can be considered social because create added activities locally in poorer countries. They are examples of Hybrid Business (Brooks, 2013). • The North Circular is a small UK company that employs a local network of talented home knitters, usually ageing woman, thus mobilizing localized production (localization) (The North Circular, 2018). • Who Made Your Pants? Is a UK co-operative that employs and supports refugee women, where profits are used to sustain the business (Reddy, 2014). • Collaboration between charities and fashion retailer to organize take back and collection schemes (Pal, 2017). • H&M donates 0,2 € to a local charity for each kilograms of clothes (Pal, 2017). • SEW and Sidai Designs is a social enterprise that provides sustainable and ethical employment to women of Tanzania, by selling their designs and manufactured products through retailers in UK, Australia and US (Smith and Newman, 2014).

Table 43 Repurpose the Business for Society/Environment in the Fashion Industry

Develop scale-up solutions

The value proposition is of scaling sustainability solutions in order to maximize the benefits for the society and the environment. The value is created and delivered through new unusual partnerships and business relationship. The value capture come from the fees paid for scaling up the solutions and from the higher impact derived through scaling up.

Here below, a table with examples of applications of this archetype in the Fashion Industry.

Develop Scale-up Solutions
• Open Garment is an EU funded initiative based on open innovation where the virtual user can "designs, configures, orders, publishes, shares, and even sell individual garments. Then, there is a Open Manufacturing-based flexible network of production units that produces customized physical goods. Finally, there is knowledge-based manufacturing service provider (MSP), which is the open platform, acts as a service provider in between" (Open Garments, 2009).

Table 44 Develop Scale-up Solutions

2.5 Drivers

In this paragraph are shown the drivers found in the literature. In such a way, during the interview and the collection of data, it was possible to have an idea about what looking for and how reading the information discovered.

In this table below, it is also mentioned which driver could explain only the change towards sustainability and which could explain both the change and the birth of the sustainable companies.

Driver	Author	Driver of change?
Government intervention (Legislations, regulations, taxes, incentives, subsidies, investment..)	Saeed et al., 2017 Tello and Yoon, 2008 Kotir et al., 2017 Fien & Winfree, 2014	BOTH: on the one hand taxes and incentives can stimulate a traditional company to move into sustainability and on the other hand, they can promote the birth of a sustainable company, with financial and regulatory helps.
Societal pressure (NGOs, media/press, environmental organizations,	Saeed et al., 2017 Tello and Yoon, 2008	DRIVER OF CHANGE: traditional companies can be pressed by these actors towards the adoption of sustainable practices.

communities, consumer organizations…)	Todeschini et al., 2017	
Cost savings	Saeed et al., 2017 Kasurinen et al., 2017 Viesi et al., 2017 Short et al., 2014	DRIVER OF CHANGE: traditional companies can embrace sustainability to cut some costs.
Top management commitment	Saeed et al., 2017 Mudgal et al., 2009 Motkadir et al., 2018	DRIVER OF CHANGE: the top management become sensible to the issue and drive the traditional company to a new direction.
Operational performances/resource efficiency	Saeed et al., 2017 Samuel V. Short et al., 2014	DRIVER OF CHANGE: traditional companies adopt sustainability driver by the goal of performance/efficiency.
Pressures/demand from customer	Saeed et al., 2017 Tello and Yoon, 2008	BOTH: pressure/demand from the customers can generate a change in a traditional company, but can also stimulate the creation of a new company focused on this new demand.
Shareholders/investors pressures	Saeed et al., 2017	DRIVER OF CHANGE: shareholders become sensible to the topic and drive the traditional company to a new direction.
Suppliers' pressures	Saeed et al., 2017 Abdul-Rashid et al., 2017	BOTH: suppliers can impose to their customers the adoption of sustainable practices. This can happen for traditional companies, but it can also be a constraint taken into account when starting a new company.

Organization's culture (innovativeness, values, information disseminations, health and safety issue, code of conduct, organizational commitment..)	Saeed et al., 2017 Abdul-Rashid et al., 2017 Kotir, 2017	DRIVER OF CHANGE: this driver refers to an already existing company, whose characteristics drive the company in a new direction.
Organization's characteristics (size, current level of environmental actions, degree of internationalization, geographical location, position in the supply chain, industrial sector..)	Saeed et al., 2017 Kotir, 2017	DRIVER OF CHANGE: this driver refers to an already existing company, whose characteristics drive the company in a new direction.
Technologies innovation/availability	Tello and Yoon, 2008 Todeschini et al., 2017 Kotir, 2017	BOTH: Technological innovation might push a traditional company in a new direction. However, it can attract new entrepreneurs that start a new firm based on the new technology.
Consumer awareness	Todeschini et al., 2017 Walker et al., 2008 Mudgal et al., 2009	BOTH: This can be a driver for traditional companies, but it can be also a constraint taken into account when starting a new company.
Competitiveness	Viesi et al., 2017 Abdul-Rashid et al., 2017	BOTH: this can be a driver for traditional companies, but also for new ones, which want to be competitive in the market, for example with the goal of

		differentiate themselves from competitors
Stakeholders pressures/importance	Saeed et al., 2017 Stubbs and Cocklin, 2008 Stubbs and Cocklin, 2008	BOTH: traditional companies can be pushed by stakeholders to change. But a new company could already be aware of their importance and then, deciding to be sustainable to get their support.
Brand recognition	Rueda et. al, 2016	DRIVER OF CHANGE: this driver refers to already existing companies, which are already recognized in the market.
Eco-knowledge (information availability, training&education…)	Moktadir et al., 2017 Fien and Winfree, 2014	BOTH: this driver can be a stimulus for changing, but it can also set the basis for the birth of a new company.
Access to resources	Saeed et al., 2017 Wilson, 2007 Kotir, 2017	BOTH: An existing company can decide to adopt sustainable practises to have easier access to resources, but it can be a driver also for new companies, which are aware of the problem and want to overcome it from the beginning.
Environmental protection (climate change, global warming…)	Wilson, 2007	BOTH: It can be a driver for traditional companies, which have a top management committed to this topic. It can be a driver also for new companies, which born with the goal of protecting the environment.

Green marketing	Vieisa et al., 2017	BOTH: it can be a driver for both of cases, with the goal of getting green reputation.
Recognition of social/environmental problem or opportunity	Keskin et al., 2013	BOTH: new companies can be born with the aim to exploit an opportunity or to solve a problem. However, also traditional companies can recognize an opportunity and start adopting sustainable practices.
Desire of improving the well-being of the community	Carrigan et al., 2017 Stubbs and Cocklin, 2008	BOTH: new companies can be born with the goal of improving the well-being of the community. However, also traditional companies can become sensible to the well-being of the community, both for humanitarian reason and for self-interest reason.
Personal life-style/believes/sense of moral obligation	Carrigan et al., 2017	DRIVER FOR BORN: new companies can start sustainable due to the life-style and believes of the founders.

Table 45 Drivers

2.6 Questionnaire

After the definition of the research framework, the next step consisted in developing a questionnaire designed to catch the relevant information.

The first part concerned the business model of the company. Information such as value proposition, value creation, value delivered and value capture was the purpose of questions. That part was very important, because it aimed at discovering the core characteristics of the company. Such phase allowed the definition of the archetype the company belonged to, as well as other facts that characterize its nature. Examples of these questions were “What are the activities and resources that you reckon critical in your

business?" or "What kind of relationship do you have with your customers and which channels do you use to reach them?".

The next part of the questionnaire was focused on discovering all the practices that the company implemented. Here, the questions were divided in the same way of the a priori analysis of the practices. Hence, there was a part about upstream practices, one about the internal practices, one about design and new product development etc.

Once discovered all the practices, the questionnaire dealt with the topic of the sustainable development of the company. Therefore, here the questions were about whether they were born sustainable or if they embraced sustainability afterwards, the drivers that brought them to sustainability and the obstacles found over the path. This part was critical since it is closely related with the research framework.

Finally, the questionnaire asked some complementary questions, such as the sustainable measurement assessed by the company and the future steps in mind.

The questionnaire is provided in the Appendix

2.7 Selection of the companies & collection of information

After the definition of the questionnaire it was possible starting the selection of the companies and the collection of the relevant information.

This phase was carried out screening some lists available online containing names of sustainable companies, looking for potential candidates. The first list considered was that of the certified B Corps. In fact, this certificate provides evidence of the sustainability of the company, since to get it the company has to undergo strict assessment to verify its practices on the environmental and the social side (Bcorporation, 2018). However, since most of the companies of that list did not answered when contacted, it was necessary expanding the research to other lists found online:

- Huffingtonpost (2018): https://www.huffingtonpost.com/entry/ethical-clothing-brands-you-probably-didnt-know-about_us_59e61300e4b0a2324d1dfa71
  Huffpost is one of the most followed American blog in the world. It provided a list of sustainable fashion companies.
- Nomadtribe (2018): https://www.nomadtribeshop.com/blogs/news/77565185-50-fair-trade-clothing-brands-redefining-ethical-fashion

Nomadtribeshop is an ethical fashion store which published in its blog a list of sustainable fashion companies.

- Girlvsglobe (2018): http://girlvsglobe.com/sustainable-fashion-brands/
  Girlvsglobe is a responsible travel blog, which deals also vegan food, natural beauty and sustainable fashion. It provided a list of sustainable fashion companies.

These lists were just a suggestion for new potential companies to be contacted. Before contacting them, their websites were assessed carefully together with additional information from other sources, so that to find proof of their sustainability, such as certificates, materials and practices adopted.

Another constraint followed in the selection of the companies was the position in the supply chain. The focus was given to organizations that were involved both in the retail and in the production of goods. Such constraint limited consistently the number of available companies, because it emerged that a big part of them relied on external partners for the manufacturing process

Selecting criteria	
Fashion industry	Companies that operate in the fashion industry.
Sustainability	Companies that had evidence of being truly sustainable. That evidence emerged from certificates, such as the B Corp certification, and from information present of their website or other sources connected. Such information could be other certificates obtained by the company, or the materials and practices adopted.
Position in the supply chain	The companies considered were positioned at the same point of the supply chain, which was retailing and production of the final good.
For-profit companies	Companies were all for-profit

Table 46 Selecting criteria

Having defined the selecting criteria, it was possible starting to send the emails in order to arrange the interviews. However, among the 68 companies contacted, only 10 replied. Of these, 5 agreed to arrange an interview, while the others preferred to send already existing materials (other interviews previously made) or to answer the questions by email. Again, among the 5 that agreed to have an interview, only 2 were positioned in the phase of supply chain analysed by this thesis. Hence, the case sample of this work consist in 7 companies, shown in the Table 46:

Name	Product	Country	Size	Year	List	Type of interaction
Nisolo	Shoes	USA	97	2011	Bcorp	Emails
Eileen Fisher	Clothes	USA	1200	1984	Bcorp	Interview (to the Director of Social Consciousness)
TS Design	Printing t-shirts	USA	11-50	1977	Bcorp	No interaction
Elvis & Kresse	Accessories	UK	10	2005	Bcorp	Previous interviews shared with me
Reformation	Clothes	USA	400	2009	Huffpost	Previous interviews shared with me
Mayamiko	Clothes	UK, Malawi	18	2013	Nomadtribe	Previous interviews shared with me

Amara Tulum	Swimwear	Mexico	3	2014	Girlvsglobe	Interview (to the founder)

Table 47 Selected companies

As it is possible to observe, 4 of them were Bcorps while the others were found in other lists. There was an interaction with all of them, with the exception of TS Design, that did not have an interview with me nor shared material. However, on the web it was possible to find all the relevant information, then it was included in the sample, also because of some peculiarities of its evolution. The offer among these companies are different each other. Some sell clothes, some shoes, some print t-shirts. The common think is that are all sustainable and that are involved both in retail and in production. Another consideration is that the data collection was performed with several means, which are interviews, emails and previous interviews shared directly by them, or found on internet as for TS Design.

This sample has the positive feature of being well balanced of different archetype and born vs non-born companies, as it is possible to observe from the table 47:

Firm	Born?	Archetype
Nisolo	Yes	Repurpose for society/environment
Eileen Fisher	No	Substitute with renewable and natural processes
TS Design	No	Substitute with renewable and natural processes
Elvis & Kresse	Yes	Repurpose for society/environment & Create value from waste
Reformation	Yes	Substitute with renewable and natural processes
Mayamiko	Yes	Repurpose for society/environment
Amara Tulum	No	Create value form waste

Table 48 Selected companies' features

As it is possible to see from the table, there are 4 sustainable born companies against 3 non-born companies. This allowed to assess the difference between the two categories, having a good sample per each type. The same happens for the archetype: the sample has 3 “Repurpose for society/environment”, 3 “Substitute with renewable and natural processes” and 2 “Create value from waste”, whose one is also a “Repurpose for society/environment”, meaning a hybrid case, a situation already identified in the literature by Bocken et al., (2016). This information will be derived from the reading of each single case performed in the next phase and chapter of the Analysis of results.

In that next chapter, the within case analysis will be presented with the aim of understanding deeply each single case (i.e. business models and the drivers that brought them to be sustainable and to adopt a specific archetype). This phase was very important, as Eisenhardt (1989) suggested. In fact, even if usually this generates only pure description of the cases, it helps the researcher to cope with the great amount of data and to get an intimately familiarity with the stand-alone case. Additionally, in this phase, codes were assigned to relevant concepts extracted by interview’s transcriptions made directly or obtained from secondary sources. These codes were used to provide a clear insight of the concept behind and to facilitate the recognition of the existing patterns during the cross-case analysis.

2.8 Information sources

This small chapter is dedicated to indicating the sources where the information was obtained. It is provided a summary table that show the websites and the sources for each specific company.

Company	Sources
Nisolo	Websites shared by them: - https://nisolo.com/ - https://docs.google.com/document/d/1NaDSomg7urQ_D8HuBfx-yI__Q2dY1hH2pWE2x2GKaWU/edit - https://www.forbes.com/forbes/welcome/?toURL=https://www.forbes.com/sites/laurelmoglen/2017/10/04/podcast-nisolo-shoes-places-priority-on-ethical-business-practices/&refURL=&referrer=#f8891cb1bdc5 Emails

Reformation	Websites shared by them: - https://cbey.yale.edu/events/bright-lights-green-sights-yael-aflalo-reformation - http://stylecaster.com/yael-aflalo-reformation/ - https://www.huffingtonpost.com/kathleen-talbot2/activating-purpose-in-the_b_10485678.html - https://www.thereformation.com/ - https://eecosphere.com/articles/care-for-what-you-wear-an-interview-with-reformations-kathleen-talbot - http://www.racked.com/2014/11/26/7567391/yael-aflalo-reformation - http://www.vogue.com/13367179/reformation-eco-fashion-ethical-label/
Mayamiko	Websites shared by them: - https://thegreenhubonline.com/2017/04/17/creating-sisterhood-in-malawi-with-mayamiko/ - https://www.trustedclothes.com/blog/2016/11/14/interview-paola-masperi-mayamiko-part-one/ - http://www.thegoodtrade.com/features/paola-masperi-interview-mayamiko - https://www.trustedclothes.com/blog/2016/11/14/interview-paola-masperi-mayamiko-part-two/ - https://www.mayamiko.com/ Emails
Elvis & Kresse	Websites shared by them: - https://www.mamoq.com/journal/10-questions-with-kresse-from-elvis-and-kresse-rescue-transform-donate/ - https://docs.google.com/document/d/1LcNcF4Hb-ay-CZe_D8cRLN8MoomKMB0V2vqptuRY_Fs/edit - https://docs.google.com/document/d/1mq_SDxiryHUEY_2iIXbT5UtilSLYrVH9dawoOjf6i4k/edit - https://docs.google.com/document/d/1Q23FUBMVibIKU1ovlZF9VjN2KK-MkPKc6IRwfrxdmS0/edit - https://docs.google.com/document/d/1B4LzXgf-vDCG7yLenEpFnTQZLcRLyYSOKVyhPz7wCN8/edit - https://docs.google.com/document/d/1Tzqi35PlS2zlAfQADf7HqLj6qQw0kxuPcYFOs5ppJGI/edit
Amara Tulum	Interview Website: - https://www.amaratulum.co/
Eileen Fisher	Interview Website: - https://www.eileenfisher.com/
TS Design	Websites: - https://tsdesigns.com/ - https://www.treehugger.com/culture/the-th-interview-eric-henry-of-ts-designs.html - https://inhabitat.com/ts-designs-eco-friendly-t-shirt-printing/

Table 49 Sources

3

Analysis & Results And Conclusions

3. Analysis & Results

This chapter is the central part of this work, where the research questions are answered. It is divided in two parts, according to the literature guidelines presented before. The first is the "Within case analysis", where the selected companies are discussed considering a general description, the drivers that led the founders to embrace sustainability and the company's sustainable business model. Instead, in the second part it is considered the "Cross-case analysis", where the companies are confronted in order to highlight the similarities and the differences existing between them in term of drivers, so that to be able to define specific path for each archetype considered, and then a general picture of the direction deriving from each kind of driver. The goal is to understand the drivers characteristic of each archetype and the differences between the born sustainable companies and the non-born sustainable companies.

3.1 Within case analysis

This part consisted in a careful reading of the information obtained from the several resources mentioned before, with the goal of understanding deeply the company, with a particular focus on three aspects:

- The evolution of the company and in particular if they were born sustainable or if they embraced it afterwards
- The drivers that brought the company adopt sustainability (at the birth or afterwards)
- The business model and the related archetype

It will be presented the discussion of each single case, starting with a general description of the company, followed by the drivers that brought it to embrace sustainability and finally, there will be a section about the sustainable business model of the company, obtained through interviews and secondary sources. The compilation of the sustainable business model is based also on the sustainable practices detected in the analysis of the company. The information obtained allowed the identification of the specific archetype the company belong to. In the analysis, it will emerge that the companies usually perform activities that belong to more than one single archetype. However, in all the cases, it is

possible to recognize a particular importance given to a specific archetype, through for example a statement regarding the value proposition of the company or a particular quotation emerged from the interviews or the secondary sources. Additionally, sometimes it happens that elements belonging to the social or the environmental side of the sustainable business model appear also in the economic side, meaning that they are at the base of customer value as well. This provides a further clue in the definition of the archetype. The complete list of the sustainable practices adopted by the companies as well as the quotations that led to the compilation of the economic side of the business models are available in the Appendix.

3.1.1 Nisolo

3.1.1.1 General description

Nisolo is a socially conscious lifestyle brand founded by Patrick Woodyard and Zoe Cleary in 2011, which produces shoes and accessories created by the highly skilled artisans of developing countries, particularly Peru. In fact, the whole idea started when Patrick took an economic development job in Trujillo (Peru) and saw the great talent of the artisans and the challenges that they had in reaching the global market to sell their goods. Hence, he understood that helping them to overcome these barriers could have been also a source of business and an opportunity both for him and for the developing community. Since he needed fashion industry expertise, he contacted Zoe Cleary, who immediately felt in love with the work of Peruvian's artisans and decided to join Patrick in this business.

Part of Nisolo's production is kept in-house, while part is outsourced to factories located in Mexico, or to independent artisans in Kenya. In all the cases, it is given a particular attention to the ethical and fair trade behaviours. In fact, Nisolo recognizes the championing of ethical factories as a key activity. The production is subdivided in the following three ways as already mentioned:

- The first and most important mode of production is through their own factory in Trujillo, where happen the 89% of the total output. In their factory, the workers earn 27% higher than the fair trade wage requirement. The average annual increase for all the producers is 140%.

- The second method is through championing other ethical factories in Leòn (Mexico), where 8% of production come from. These partners must meet a strict set of standards and Nisolo's staff is continuously engaged in controlling that these standards are maintained and in building a strong relationship with them. Here too, the workers earn 27% higher than the fair trade wage.
- The third method is through working closely with small and independent artisans in Nairobi (Kenya) and Trujillo (Peru), where 3% of production come from. Nisolo created partnership with them with the goal to eradicate extreme poverty in those communities. It provided also mentoring to these artisans, with the result of increased productivity, better organization of production and improved inventory management. As in the other cases, these independent artisans earn 23-27% above fair trade wage requirement.

It is possible to observe the strong Corporate Social Responsibility showed by Nisolo in its way of doing business.

In fact, through this production methods, Nisolo wants to improve the well-being of these developing communities, by allowing them a living wage and by providing them with education and support in many aspects of their lives, such as healthcare and access to universities. This is allowed by the value captured by Nisolo combining the expertise of the local artisans and the entrepreneurial skills of the founders.

In pursuing their mission, Nisolo evolved from 10 employees working in a small home as an informal workshop to being operating in large factory with close to 100 employees.

They pay a lot of attention also to performance measurement, as they explicitly mentioned as one of the key activities. They did not start from the beginning, but just from October 2014. Now they measure different performance, both in term of social and environmental impact. On the social impact they measure changes in the following areas: home/land ownership and living conditions, economic well-being (household income, assets, net worth, conditions pre-Nisolo, etc.), savings and debt levels and access to formal banking, education access for producers and family members, professional development, healthcare access and health level, social and psychological wellness, etc

On the environmental side they measure water usage, chemicals and CO2 emissions. However, they feel not to being doing enough in term of environmental sustainability and

they are moving further in that direction. In 2018 they aim to get the certificate ISO 14001 for their Peru factory and do hard assessment of all their Green House Gas emissions in their Nashville office and across all their value chain to understand better their carbon footprint and set reduction goals.

3.1.1.2 Drivers

Patrick Woodyard is the founder of Nisolo. Before starting his company, he was already engaged in humanitarian activities in Peru, trying helping women in challenges such as opening their own business or paying back their loans. This indicates a strong passion towards activism and social improvement of underprivileged people, meaning strong personal values about social justice and wellbeing. Together with this humanitarian passion, he was also very interested in business and his dream was to unify these two interests in order to have a direct impact in the world.

During that period of social activism, it happened by chance that he discovered the incredible quality of shoes hand crafted by the artisans in Trujillo. He was astonished by the amazing skills of these people that were so unnoticed by the rest of the world and was however so valuable. He saw that the local market of shoes was already saturated, hence preventing these artisans to sell their products and raise them out of a situation of poverty. He recognized the gap in the supply chain that separated these artisans from the international market and after all these considerations, he decided to start his social enterprise in order to fill this gap and allowing them to deliver and capture the value deriving from their competences.

Identified drivers	Explanation
Personal value/lifestyle	Patrick was already involved in humanitarian activities, implying his values towards activism and social well-being.
Desire to have a social or environmental impact	He wanted to exploit business to have a social/environmental impact in the world.
Recognition of a gap (Gap in the supply chain)	He saw that Peruvian artisans were not able to sell internationally, thus identifying a gap in the supply chain.

Recognition of product value from human competences & activities	He recognized the amazing skills of Peruvian artisans in shoes making activities.

Table 50 Nisolo's drivers

3.1.1.3 Business Model

Nisolo's business model is strongly oriented to the social side as it is possible to observe from the table below. This focus on the social side is immediately observable from the value proposition, since they want to "connect underserved, high skill producers to consumers worldwide." This is the fundamental mission, upon which Nisolo was started. Nisolo wants to act as a bridge between the local manufacturing and the international market. In this way, the value embedded in the local artisans and in their products can be captured and then shared with them. The value is shared in different ways. First of all, Nisolo's workers are provided with wages which are consistently higher than the minimum fair wage. In addition, part of the profits is destined to the empowering activities towards Nisolo's workers and their families. These activities are considered by Nisolo as key also for the customer value, as they want to provide them with products that are consciously and ethical made. The customer buys from Nisolo also aware of this aspect. All these aspects define Nisolo as a company belonging to **"Repurpose for society/environment"**. In fact, its existence is clearly oriented to a social mission and the part of the profits gained is used in favour of community empowerment.

Further it is possible to recognize also a marginal interest to environmental side, even if far from the level of engagement in the social side. However, they plan to invest more also in that area, through measures such as adoption of the certificate ISO 14001 and as the complete assessment of their carbon emission along the supply chain.

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- **Product**: Shoes, boots, bags, accessories, belts and more - **Customer target:** Young, urban professional (mid twenties to late thirties) - **Customer relationship:** Strong relationship with a frequent interaction, product reviews	-	Nisolo is a socially conscious brand connecting underserved, high skill producers to consumers worldwide.
Value Creation & Delivery	- **Key partners:** Factories in Mexico, independent artisans in Kenya, B Lab, investors - **Key resources:** Human resources, technology and materials - **Key activities:** Championing factories, empowering underprivileged workers, understanding their customers, measuring their impacts - **Channels:** Social media (chiefly Instagram), their blog (website)	- Upcycling - Adoption of renewable energies - Adoption of organic and benign materials - Green procurement	- Local sourcing - Suppliers monitoring - Ethical and fair trade - Workers stewardship: education, empowerment, access to education, etc - Collaboration with NGOs - Measuring of their social impact - Communication of social commitment to the public
Value Capture	- **Revenues:** Revenues from shoes, boots, accessories, bags. - **Costs:** Costs from human labour, materials, marketing, production, people empowerment, shipping	Environmental benefits from implementation of renewable energies, vegetable tanneries and upcycling. Environmental costs in term of water usage, chemicals and CO2 emissions	People empowerment through education, healthcare and other benefits. Creation of a bridge between local artisans and international market.

Table 51 Nisolo's Integrated Sustainable Business Model

3.1.2 Mayamiko

3.1.2.1 General description

Mayamiko is a social enterprise/hybrid business founded in 2008 by Paola Masperi. Initially, Mayamiko (The Foundation) was not a for-profit, but a charitable company operating in Malawi with the goal of empowering the local population in order to raise their living conditions and their well-being. In order to do that, Mayamiko provided and still provides education, skills training such as technical knowledge and entrepreneur attitude, access to finance etc. All these aspects that are taken for granted in the developed countries, in these poor countries do not exist and that is a barrier for the local population to thrive and improve their status quo. The target of these courses and training are mostly women, since Paola read about many studies reporting that women's education has a ripple effect not only on the women themselves and their families, but also on the community they live in. However, since the beginning of this charitable project, Paola already had in mind the idea to make Mayamiko evolve into a for-profit company. Then, in 2013 Mayamiko The Label was launched. This company offers to the market clothes that are made in Malawi, that possess the colourful designs of these places as well as their artisanal techniques and wonderful fabrics.

Mayamiko The Label could not exist without Mayamiko The Foundation. They have a symbiotic relationship, where Mayamiko The Label places the orders to the workshop (or Fashion Lab) in Malawi, where the employees receive good salaries, job stability and financial as well as healthy security. Further, the label also donates parts of its profit to the charity directly, thus funding new programs and activities.

This company is very engaged in what it is related to social and environmental sustainability. Over the path they have introduced many initiatives and practices: starting from collaboration, then they adopted upcycled collections like Rebirth, then they started moving towards Zero Waste program. Additionally, at the beginning their production was hindered by the lack of access to electricity. They overcame that problem through the installation of solar panels in their workshop in Malawi.

For the future, Paola has many plans in order to have a bigger impact and being more sustainable. First, she is looking for new developing countries where she can apply the same models that she did in Malawi, so that she can increase the population supported by her company. Additionally, currently they are working on a "circular wear" centre, where

customers can trace their garments form the beginning to when they decide to dispose them, using smart tech. Mayamiko is moving from strength to strength towards an increased level of sustainability.

3.1.2.2 Drivers

Paola Masperi is the founder of Mayamiko. She has been always engaged in activism and social justice as she explicitly said and she thinks that this passion comes from their parents, who were engaged in this field as well. Also, before starting Mayamiko, she was already working in Malawi (where the company will be founded) and she could see the potential within the people living in that country. She recognized the value hidden within the exuberant designs and the fabrics used by the locals in order to produce their clothes. However, she recognized a gap that prevented them to thrive. That gap was related to a lack of competences, in particular related to finance and entrepreneurship. In addition, their tailoring skills were quite basics and needed to be empowered. So Paola Masperi started Mayamiko, as she explicitly said with the sole desire to "help change people's lives by giving them choices. Choices come in the form of education, skills training, access to finance, and many other options that we often take for granted."

Identified drivers	Explanation
Personal value/lifestyle	Paola Masperi has always been engaged in activism and social justice
Desire to have a social or environmental impact	She explicitly said that the sole desire was to help change people's lives by giving them choices, through education, skills training etc.
Recognition of a gap (Gap in the supply chain)	She recognized a gap in the competences of tailors in Malawi, due to lack of knowledge in financial and entrepreneurial topics as well as basics tailoring skills.

Recognition of product value from human competences & activities	She recognized the potential that could be unlocked with the right empowerment. She recognized the value in the exuberant designs and unique locally made facrics

Table 52 Mayamiko's drivers

3.1.2.3 Business model

Mayamiko is divided in two branches: one is Mayamiko the Label, the for-profit part and one is Mayamiko Trust, which is a charity. The two parts work in synergy and one could not exist without the others. What happens is that Mayamiko the Label orders the products that it sells from Mayamiko Trust, where there is its fashion lab. In this way Mayamiko guarantees a stable job to their employees and a consistently high fair wage. In fact, at the core of Mayamiko there is the value proposition of "offering products made in its workshop based in Malawi, which allows it to provide work and opportunity of growth to the local women". In addition, at the core of Mayamiko there are the donations made in order to finance education and activities to improve the knowledge and the competences of the locals. In particular, the targets of these activities as well as the employees are women, since Paola thinks that an improvement in the living conditions and in the competences of women has a ripple effect on the overall community. Through these donations, Mayamiko wants to share the value deriving from the products sold with their employees and the community of Malawi. All these activities define Mayamiko in the archetype **"Repurpose for society/environment"**. In addition, even if the main focus is on social side, they are consistently engaged also in the environmental side, as they implement several practices aiming at reducing their environmental impact. Examples of these activities are the adoption of renewable energies and organic materials. Then, they aim at Zero Waste by recycling as far as they can. Further, they avoid plastics and every couple of year they launch an upcycled collection.

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- **Product**: Top, dresses, jackets, trousers, shorts, accessories etc - **Customer target**: Global modern woman - **Customer relationship**: Strong relationship through social media	-	Mayamiko offers products made in its workshop based in Malawi, which allows it to provide work and opportunity of growth to the local women.
Value Creation & Delivery	- **Key partners**: NGOs, organization (Cotonea for cotton) - **Key resources**: Human resources, financial resources - **Key activities**: Donation, people empowerment, education - **Channels:** Website, social media such as Facebook or Instagram, physical boutique	- Zero Waste mentality - Recycling -Renewable energies - Benign and organic materials - Sustainable packaging - Upcycling - Timeless design - Certification - Restorative actions	-Local sourcing -Ethical and fair trade - Worker empowerment - Collaborations - Communication of social commitment
Value Capture	- **Revenues:** Revenues from the products it sells - **Costs:** Cost from production, materials, education, human labour, donations, people empowerment (e.g. grants)	Environmental benefits generated by the previous mentioned activities Environmental costs: NA	Benefits in term of workers empowerment (education, consistent wages etc)

Table 53 Mayamiko's Integrated Sustainable Business Model

3.1.3 Elvis & Kresse

3.1.3.1 General description

Elvis&Kresse is a certified Social Enterprise, founded in 2005, whose mission is rescuing disposed raw materials, transforming them into luxury lifestyle accessories such as wallets, bags and belts. Then, 50% of their profits are donated to charities. The initial material that they started rescuing was the firehose. They literally felt in love with this material and the story behind, linked to its active service of life-saving. All the processes to turn this disposed material into something valuable and of luxury are made in-house, making Elvis&Kresse a vertically integrated company. The production is divided equally in two production facilities, situated in Kent and Istanbul. The process of transforming the rescued material into a valuable input consists in 6 phases: the hose is edged, then soaked, then brushed on the outside and inside surface, then cleaned, then dried, then split and then cut. They use to do it during summer, where they can dry the long length in the sun.

Even if they started with firehose, which is their standing out material, they are always looking for now material to save. However, they never take on a new material if they think they will not be able to solve the whole problem (meaning rescuing all the disposed material) and if they believe there are other companies that could do better than them. So far, they have addressed many types of materials: firehose, parachute silk, printing blanket, leather, coffee sack, shoe boxes, tea sack, auction banners.

They are always looking for new materials to rescue, with the dream of a world without landfill, where everything remains always part of circular economy, being recycled and reused again and again.

At this time, Elvis&Kresse's most ambitious material challenge is that of leather waste. In trying to address this problem, it partnered with the Burberry Foundation, from which it receives a grant and their leather waste, that it is converted into accessories and homeware.

3.1.3.2 Drivers

Kresse together with her husband Elvis are the founder of Elvis & Kresse company. Kresse had a background of kindness and great values, which comes from her relatives

who use to motivate her towards a responsible behaviour. It shapes Kresse's personality and in her adulthood, it pushes her to start a company that has the environmental mission of rescuing used materials and having a direct impact on society. This impact is through upcycling wasted materials, by taking them away from the landfills (or by avoiding them to finish there) and put them back in the chain of value in a perspective of circular economy. In fact, the gap recognized by the founders was exactly in the circle value chain. What was lacking was an actor that would rescue the disposed materials and put them back in the value chain.

Finally, the decision of starting with firehose was due to her love for that kind of material, employed by firefighter to save lives, where you can see the scars and the colour variation due to its active service in favour of community. Then, fire hose is very strong and durable, which make this material very valuable and useful for new utilization.

Identified drivers	Explanation
Personal value/lifestyle	Kresse said that she grew up in an environment of great kindness and values.
Desire to have a social or environmental impact	She wanted to rescue decommissioned fire hose. Next, the company got involved in rescuing also other kinds of materials, such as leather, parachute silk, coffee sacks etc.
Recognition of a gap (Gap in the supply chain)	They recognized a gap in the circular supply chain. What was lacking was an actor that would have put back the disposed materials in the supply chain.
Recognition of value from human competences & activities	She recognized the great value within the fire hose. That value derived from the fact that it had a whole story behind, linked to a product life dedicated to helping and saving people. Hence, such social value embedded was related to the work of the fire fighters.

Recognition of value from material input	She recognized the great value within the fire hose. Beside the social aspect mentioned before, the fire hose is very strong and durable

Table 54 Elvis & Kresse's drivers

3.1.3.3 Business model

Elvis&Kresse is a company completely sustainable on all the three pillars of the Triple Bottom Line. In fact, by looking at the value proposition, it is possible to observe that it is composed by an economic, an environmental and finally a social side. It is committed strongly and equally to all the aspects. Elvis&Kresse is a company born specifically to address the problem of disposed materials (initially fire hose and later other materials). One of its key activities is upcycling, which appears both in the economic and in the environmental side. This happens because the customer value depends also on the fact that the product is made with upcycled material, which according to Elvis&Kresse has a strong value inside, both social and economic. These aspects made Elvis&Kresse falls both in the "Repurpose for society/environment" and in the "**Create value from waste**" archetypes. Hence, the company can be considered a hybrid one. Further, there is another key activity appearing in the economic side and producing also the social value proposition. This activity is that of donations, since 50% of the profit are destined to charities. That practice reinforces the belonging to "**Repurpose for society/environment**", since the value captured from the materials are shared with a social purpose, towards charities such as the FireFighters charity

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- **Product:** Begs, belts, wallets, purses, general accessories (luxury) - **Customer target:** NA - **Customer relationship:** They have a space in their website to communicate with customers and additionally they use also Facebook	Elvis & Kresse upcycle reclaimed materials into sustainable luxury lifestyle accessories	All ethically handmade with 50% of profits going back to Charities.
Value Creation & Delivery	- **Key partners:** Fire Fighters charity, Burberry Foundation, B Lab - **Key resources:** Materials (fire hose, leather, and other rescued materials) - **Key activities:** Donations, product development, rescuing and upcycling disposed materials - **Channels:** Website, Facebook	- Upcycling (Circular Economy) - Product durability and longevity - Exploration of new materials to rescue - Renewable energies - Information disclosure	- Donations - Collaborations - Communication of social involvement - Transparency
Value Capture	- **Revenues:** Revenues from the products sold - **Costs:** production, donation, materials, product development	Environmental benefits from rescuing materials that would otherwise end up in landfills Environmental costs: NA	Social benefits from donation to charities

Table 55 Elvis & Kresse Integrated Sustainable Business Model

3.1.4 Amara Tulum

3.1.4.1 General description

Amara Tulum is a small company founded by Lisa Jackson in 2013, which produces swimwear. The firm started not imprinted to sustainability, but it had its turnaround in 2015, when its unique supplier (Aquafil) introduced a new disrupting technology. Such technology allows Aquafil to produce a material called Econyl ®, made with recycled nylon recovered by the ocean or as a by-product of other processes. Hence, this material is completely sustainable because it does not contribute to the raw material demand that is consuming the resources of the Earth. Additionally, this material is sustainable because it contributes to the process of cleaning the oceans. As soon as Lisa got to know about this new opportunity, she immediately shifted the traditional materials with this new one. This new material has both the sustainable benefits already mentioned and together with the qualities of the previous not sustainable one. This was very positive for Amara Tulum as the customer was not able to recognize any change in the quality of the material. However, in this new way the production is much more sustainable. So far, this is the core of Amara Tulum, but in its expansion process, it has a lot of plans. It wants to set up its own boutiques which it will make run with renewables energies. This retail store will be build up with renewable materials as well, and it will allow Amara Tulum to engage directly the customers with the goal of educating them about sustainability.

3.1.4.2 Drivers

Amara Tulum was founded by Lisa Jackson. The company is still very small, with 3 employees but it is still possible to recognize an evolution from being not sustainable to be truly sustainable. In fact, the turnaround towards sustainability happened only two years after the creation of the company. This change was due to a particular event in the firm's supply chain. In fact, its only supplier (Aquafil), introduced a new disrupting technology able to create fabrics from recycled nylon, mostly recovered from waste in the oceans and in a smaller part from by-products of other processes. This event was particularly appreciated by Lisa, since she said to be always passionate about the environment and that working in an industry well known for its negative impact to the Earth was very conflicting for her.

Identified drivers	Explanation
Personal values/lifestyle	She has always been passionate about the environment and she felt in conflict for her work in the fashion industry
Drastic event in the supply chain	Her supplier introduced a new technology able to realize this new fabric (Econyl ®) from recycled nylon.
Recognition of product value from material input	She recognized the value in that material, which has the same features and give same feeling of the previous, but it is totally sustainable.

Table 56 Amara Tulum's drivers

3.1.4.3 Business model

Amara Tulum has at the core of its business model the eco-material Econyl ®, the only fabric used to produce swimwear. This material is obtained from recycled nylon, defining the company in the archetype of **"Create value from waste".** The company is still very young and has a lot of planning for the future in regard of sustainability, as explained before.

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- **Product:** swimwear - **Customer target:** Women between 21 and 60 years old - **Customer relationship:** Close relationship, where the founder answers all the comments of her customers	Amara Tulum offers swimwear made with a special material obtained from recycled waste from the ocn	-
Value Creation & Delivery	- **Key partners:** Aquafil - **Key resources:** Sewing house, material (Econyl ®) - **Key activities:** Production, education.	- Recycling - Minimalist design (design for durability) - Customer education	-

	- **Channels:** Emails, social media (Instagram, facebook), website.		
Value Capture	- **Revenues:** Revenues from swimwear - **Costs:** Costs from production, material, marketing, human labour	Environmental benefits from the cleaning by-product of Amara's production. Less resources demand. Environmental cost: they are very small due to the small scale of Amara Tulum	-

Table 57 Amara Tulum's Integrated Sustainable Business Model

3.1.5 Reformation

3.1.5.1 General description

Reformation is company founded by Yael Aflalo in 2009 that has a mission to lead and inspire a sustainable way to be fashionable. Yael understood that the real problem with sustainability was that customers perceived it as not cool and not fashionable. Hence, she realized that the most important thing was to reposition the way that sustainability is seen. Therefore, Reformation does a lot of marketing to put side to side the concept of sustainability with the idea of cool and sexiness. Whenever Reformation talks about sustainability, there are always very beautiful girls, in order to change the way people look at sustainability. Additionally, Yael understood that sustainability is always discussed in a very serious and almost overwhelming way, referring to terrible situations and scenarios. However, such language creates distance with customers that want to shop with a happy and relaxed mood. Hence, Reformation decided to talk about sustainability in a very witty and sarcastic way. So, the dissonance between the importance of the topic and the way it is talked about is very sticky because the customer does not expect it. An example of this kind of language is: "An average t-shirt needs 400 gallons of water to be produced, and our t-shirt 6. Nothing get us hotter than saving water". Sentences like that catch the attention of the customer and remain in their mind. Another thing that Reformation cares a lot about is educating customer, giving them all the information to make the right choice, though avoiding imposing or forcing customer in the direction of

sustainability. It has to be a customer's choice. All these practices have the goal to reposition the sustainability in the mind of customers, to make it something cool and attractive.

Beyond these activities of marketing and education, Reformation adopts a lot of sustainable practices inside of their facilities, that will be talked through in higher detail later. However not all of them were started from the beginning, but there was an evolution that brought Reformation to the present situation. They started by adopting just recycled vintage clothes, which was very sustainable but did not allow them to scale. So, they decided to include also deadstock from mills and designers that have excess of fabric, even if this option is the least liked by Yael, because there is not the certainty that these fabrics would have become waste. Hence, they started to adopt sustainable materials, where Tencel ® stands out. While adopting these measures, Reformation tracks its environmental footprint, considering the carbon emissions, the waste generated and the water usage and comparing it with the impact of the industry standard. Then it shares all its improvement through Instagram, social networks and newsletters with a certain cadence.

For the future, Reformation wants to be like a sort of lifestyle destination where people can buy a broad range of products like clothes, accessories, home products, consumer goods, electronics etc. Everything built on three pillars: good products, inherent value (price has not to be too different from the intrinsic value of the product) and sustainability.

3.1.5.2 Drivers

Yael Aflalo is the founder of Reformation. She got involved in the fashion industry from very young, however as the time was passing she started to feel in conflict with what she was doing. First, fashion industry is characterized by long lead times, which implies huge stocks and related inevitable waste. That was very different from her natural personal way of living. Additionally, after a travel to China, she got shocked by the incredible level of pollution in the air and in the waterways around and within the cities. That travel has a big impact on Yael. She started to do a bit of accountability around the real environmental impact of the fashion industry and she got astonished by the way the world is going. She

understood that this situation would lead to terrible consequences for the industry and for the world. For this reason, she started to start a business that would have tried to change things. She started Reformation with the goal to have an impact and change the status quo. In order to do that they do a lot of marketing to reposition the idea people have about sustainability in the fashion industry, which usually is associated to not trendy products.

Identified drivers	Explanation
Personal value/lifestyle	The current situation of the fashion industry is in conflict with Yael's value, for the incredible levels of waste and of negative environmental impacts.
Desire to have a social / environmental impact	She wants to change the current situation of the fashion industry, leading it to an eco-friendlier reality.
Risk of future disruption	She figured out the terrible consequences that fashion industry would cause to the world if something did not change.

Table 58 Reformation's drivers

3.1.5.3 Business model

Reformation is a company strongly oriented to the environmental sustainability. It acts on many leverage to pursue its goal. First of all, it is strongly oriented to the adoption of sustainable materials. They rely on many of them, such as Tencel ®, Modal ®, viscose, flax. They leverage a lot on them, in particular on Tencel ®, which they reckon to be one of the most sustainable. This strong focus, which appears also in the value proposition makes Reformation fall in the archetype "**Substitute with renewable and natural processes"**. However, the company adopts many other practices regarding the environmental sustainability. They adopt recycling, even if in a small part since it did not allow them to scale. They adopt renewable energies. Finally, it is important notice Reformation commitment in educating customers and in making shift the mentality existing about sustainable fashion. This because there is this preconception that a sustainable garment is not fashion and cool. Reformation is trying to shift this mentality with strong marketing efforts, which is one their key activities

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- **Product:** Bottoms, denim, dresses, swimwear, jumpsuits, tops etc (fashionable) - **Customer target:** Cool young women - **Customer relationship:** Direct and strong relationship, where Ref tries to educate them.	Products made with sustainable materials	-
Value Creation & Delivery	- **Key partners: -** - **Key resources:** Materials (Tencel ®, Viscose, Flax, Modal ®, etc) - **Key activities:** Marketing, education, manufacturing - **Channels:** Website, newsletter, social media	- Local chain - Green procurement - Recycling - Renewable energies - Eco-friendly packaging - Benign and organic materials - Resource optimization /efficiency - Eco-design - Restorative actions - Green marketing - Customer education	- Ethical and fair trade - Donations
Value Capture	- **Revenues:** Revenues from the products sold - **Costs:** Costs from manufacturing, materials, human labour, education, marketing	Environmental benefits from adoption of renewable energies and sustainable materials, efficiency, recycling Environmental costs: NA	-

Table 59 Reformation's Integrated Sustainable Business Model

3.1.6 Eileen Fisher

3.1.6.1 General description

Eileen Fisher is a company started by the homonym founder in 1984. At the beginning she was just really interested in offering a product made with natural materials and with a timeless design. It is true that these are practices that can be considered sustainable, yet Eileen Fisher at that time was not concerned about that, but she just really liked the sensation of that fibers and the idea of a garment that is long lasting and not affected by fashion change. Hence, even if Eileen Fisher was born with some sustainable practices embedded, it cannot be considered a born-sustainable company. It was only many years after that she started to think about sustainability. The first step was in 2004 when she decided to introduce their first organic cotton yoga collection. However, even at that time sustainability was not a priority for her, but just more a good feeling about the characteristics of the organic material. The real moment of change happened in 2012. In that year, Eileen Fisher visited for the first time her suppliers and what she saw impacted her in a way that made her realize the critical importance of a revolution in the way of doing business. In fact, she realized the really incredible amount of water utilized in the production of their clothes and she understood that that pace of consumption would have led to finish the water available, thus jeopardizing the business as well as the condition of the human population. At that point they made a huge turnaround and they put sustainability as a strategic priority in their way of doing business. It is possible to say that between 2004 and 2012, Eileen Fisher passed form the phase of strategic proactivity of the "Six waves model" of Benn et al., (2014), to the phase of "The sustaining corporation", where sustainability becomes an integral part of the culture of the company.
In this direction, they began to adopt many other initiatives. First of all, they increased the number of materials that are eco-friendly such as Tencel ® and adopting bluesign ® companies, which allow a reduction of water usage. Then, most important, they began to build up a network of actors all highly engaged in the topic of sustainability. In fact, they recognize that to have an impact in that sense, they would have required to join the forces with other organizations, that could be for-profit as well as NGOs, in order to increase their effectiveness in changing the current situation. Additionally, she figured out that to be sustainable they had to focus not only on the environmental aspect, but also on the social side. That aspect however was very complex and they are still trying to have a

significant impact there. In fact, since they were not born sustainable, their suppliers were not chosen according to criteria of ethical trade and fair wages. Therefore, now they are dealing with them in order to align them to Eileen Fisher's value. Unfortunately, this is very hard to achieve, because first of all suppliers have their own values and culture and changing them is not easy. Additionally, these suppliers are not exclusive, since they work with other brands and that makes the change even more difficult to achieve. What EF is doing at that moment is trying to obtain as much information as possible from their suppliers in order to have at least the knowledge of the real and actual situation.

Accordingly, EF efforts toward environmental and social aspects, they implement performance measurement system for both of aspects. Regarding the environmental side, they measure fibers content, the dyes, the chemistry, and the carbon emissions in their facilities and shipping. From the social side instead, they measure the wages obtained by workers and the level of satisfaction regarding their working conditions as well as their happiness.

Eileen Fisher is at a forefront in the mission of achieving sustainability in all the three pillars recognized by Elkington of environment, social and financial and it is always looking for new initiatives and new partners to be as much effective as possible in its goal. For their Vision 2020, they aim to have all their cotton and linen organic by 2020, indicating their commitment to organic and benign materials.

3.1.6.2 Drivers

Eileen Fisher is the founder of the company, from which it takes its name. At the beginning Eileen Fisher was not oriented to sustainability, even if it already adopted natural materials and the design of its product were thought to be timeless. However, these practices were not adopted because of an engagement towards sustainability, but just because of Eileen's tastes. In fact, she just really liked the feeling that natural materials gave and she liked the idea of a timeless design. Even when they started talking about sustainability in 2004 with the introduction of the first organic cotton yoga collection, it was more a matter of materials' quality rather than a real interest for the environment. It was only in 2012, when Eileen visited for the first time her suppliers that she decided that something real needed to be done in the direction of a true sustainability. In fact, she saw the incredible amount of water adopted by her suppliers to manufacture

her clothes and she understood that with that pace they would have run out of water, jeopardizing the entire business. From that moment they started to push stronger in a sustainable direction. It is for that reason that Eileen Fisher can be considered a non-born sustainable company.

Identified drivers	Explanation
Personal values/lifestyle	Eileen always liked the feeling that natural materials gave her, and she always liked the idea of a timeless design.
Drastic event in the supply chain	Eileen recognized the risk of a future disruption in the supply chain, due to the risk of run out of water if continuing with the actual pace of consumption. Sustainability in this way is a mean to mitigate the risk.
Risk of future disruption	

Table 60 Eileen Fisher's drivers

3.1.6.3 Business model

Eileen Fisher's value proposition is more focused on the environmental side, rather than social. The company gives great importance to the qualities of the materials employed and this happens from the very beginning of the company, when it was not sustainable yet. In fact, Eileen liked a lot the characteristics of the natural and organic materials, which are appreciated a lot also by her customers. However, from the interview it emerged the customers like the materials only for their features and not for the fact they are sustainable. Actually, sustainability is not something valuable for them and EF is trying to reposition their mentalities about this argument. In any case, the commitment of Eileen Fisher towards sustainable materials pays both in term of economic value (the customers like the materials' qualities) and in term of environmental value. Hence, they are heavily shifting the material adopted and by 2020 they would like to substitute all the traditional harvested cotton and linen with organic cotton and lined. They want to wean of rayon in favour of Tencel ®. They are working with bluesign ® technologies to shift global dyehouses towards responsible chemicals, water and energy usage. All these aspects define Eileen Fisher as a **"Substitute with renewable/natural processes"** company. Further, in the environmental value proposition it is showed also the focus on

timeless design, even if this interest was driven only by Eileen's tastes and not by a commitment towards sustainability.

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- **Product:** tops, tees, sweaters, cardigans, coats, pants, dresses, etc - **Customer target:** Women with age around 40 - **Customer relationship:** EF is trying hard to educate their customers about sustainability	Eileen Fisher offers products made with natural and organic fibers with a timeless design.	-
Value Creation & Delivery	- **Key partners:** materials' suppliers - **Key resources:** materials, financial resources, human resources - **Key activities:** design, identification of new sustainable fibers - **Channels:** Website, stores, social media	- Green procurement - Suppliers monitoring - Collaboration with suppliers to increase efficiency - Organic & benign materials - Resource optimization & efficiency - Zero waste goal - Recycling - Eco-design - Timeless design - Collaboration with NGOs - Certifications - Customer education - Green marketing - Restorative actions	- Collaboration with NGOs - Worker empowerment - Charity & donations
Value Capture	- **Revenues:** Revenues from products sold - **Costs:** costs from materials (organic materials cost much more), production, marketing, human labour, identification of new fabrics	Environmental benefits: reduction of impact through previous mentioned practices. Customer awareness Environmental costs: chemicals, carbon emission, water usage	Social benefits: increase of awareness of ethical trade among suppliers, community empowerment, Social costs: suppliers' workers still earn very low wages.

Table 61 Eileen Fisher's Integrated Sustainable Business Model

3.1.7 Ts Designs

3.1.7.1 General description

TS Designs is a company founded in 1977 by Eric Henry, which provides a service a t-shirt printing for major brands such as Nike, Gap, Tommy, Polo as well as to final consumers. However, in 1993 the company underwent big challenges with even the risk of failure, due to the implementation of the NAFTA agreement. In fact, after that event, TS Designs lost almost 90% of its customers, which preferred to outsource the service to countries that had lower cost. Instead of calling its quit, Eric Henry decided to turn the business model towards the principles of the triple bottom line of Elkington. Hence, it started to implement many sustainable practices such as installing a solar array, setting aggressive energy efficiency target or sourcing organic cotton locally in America. Further and most important, it redesigned its core printing service along ecological principles. In fact, since the common way of t-shirt dying is of using an ink called plastisol, which is made from PVC (an harmful material), TS Designs developed through green chemistry a new way of t-shirt printing, namely REHANCE®. This method outstrips the common one both in term of quality and in term of sustainability since with this system, the print is inside the fabric of the t-shirt rather than on it. This allows the print to last longer, to avoid to crack and to have breathability, Additionally, this method is a water based technology and the dye is low impact, with no heavy metals, no formaldehyde etc, thus not harming the environment. Further, as said before, they started to source locally, because they became aware that even if the product sourced from abroad is sustainable, the process of transporting it to the facility makes it very polluting due to the carbon emissions.

3.1.7.2 Drivers

TS Designs was founded by Eric Henry and Tom Sineath. From the birth was a successful company dealing with major brands such as Nike, Tommi, Polo etc. However, after the implementation of the NAFTA agreement in USA in 1993, it lost almost 90% of its customers, that went to other suppliers with lower prices. So there was a drastic event in the downstream of the supply chain that made TS Designs risk to fail. This event makes Eric decide to go deeply into sustainability as a way of diversification in order to gain

back competitiveness. Hence, he redesigned the company's core service of t-shirt printing along ecological principles, he installed a solar array, he set up a biodiesel co-op. Now the company is still thriving, thanks to that initiative of going into sustainability. It is also true that the founder explicitly said that he has always been interested about sustainability, probably from the time he went to the Earth Day back in the early 80's.

Identified drivers	Explanation
Personal values/lifestyle	Eric has always been interested in sustainability, probably from the time he participated to the Earth Day back in the early 80's
Drastic event in the supply chain	Due to the implementation of the NAFTA agreement in US, he lost almost 90% and risked to fail.
Risk of future disruption	

Table 62 TS Designs's drivers

3.1.7.3 Business model

The core of TS Design's business model is the technology REHANCE, which allows the company to print the t-shirts using a eco-friendly water based process, with no PVC and petroleum based materials. This is a disrupting technology, since the traditional printing process is done using plastisol, which is very harmful for the environment. This new technology provides a great environmental value, but it is also critical in the economic value creation. This happens because the printing realized with this new technology will last longer in the garment and are more breathable. Hence, it adds customer value. Given the importance taken by this new technology in the business model of TS Designs, it is possible to classify it as a "Substitute with renewable and natural processes" company.

Integrated Sustainable Business Model	Economic side	Environmental side	Social side
Value Proposition	- **Product:** t-shirt printing service - **Customer target:** major brands such as Nike and Gap (B2B); also B2C sales through website - **Customer relationship:** strong and transparent relationship, where the customers are invited to visit TS Design's workshop	TS Designs offers a t-shirt printing service, made along ecological principles	-
Value Creation & Delivery	- **Key partners:** sustainable companies - **Key resources:** human resources, technology - **Key activities:** t-shirt printing, education - **Channels:** workshop, physical boutique, website, social media	- Adoption of renewable energies - Resource optimization & efficiency - Adoption of benign processes - Restorative actions - Customer education - Transparency	Local sourcing
Value Capture	- **Revenues:** revenues from t-shirt printing service - **Costs:** t-shirt printing, education, materials, human labour	Environmental benefits from the adoption of eco-friendly technologies and materials. Environmental costs: NA	Social benefits in term of local sourcing, which improves the local economy

Table 63 TS Desings's Integrated Sustainable Business Model

3.1.8 Additional considerations

From the previous cases, a list of drivers emerges, some of which were similar to the ones found in the literature. However, those found in the literature were too generic and were not able to explain properly the situation considered. Hence, new driver labels were presented in order to fit better the situations analysed.

The list of drivers mentioned are summarized in the Table 61:

DRIVER
Personal values/lifestyle
Desire to have a social/environmental impact
Recognition of gap (with the identification of three different kinds of gap, i.e. in the supply chain, in the competences, and in the circular supply chain)
Recognition of product value from human competences & activities
Recognition of product value from material input
Drastic event in the supply chain (occurred or potential)
Risk of future disruption

Table 64 Drivers list

Personal values/lifestyle

This driver is taken from the literature (Marylyn Carrigan et al., 2017). This attitude can derive from many causes. It can be transmitted by the founders's relatives when she/he was still young. This education influenced their lives in the adulthood thus bringing them to pay attention to sustainability as in case of Elvis & Kresse and Mayamiko. Then, it might be something acquired later when already adult, as Eric of TS Design. It can be related to tastes and preferences like for Eileen Fisher, that even before knowing about sustainability was unconsciously adopting sustainable practices. This driver somehow is present in all the cases, meaning that to start a sustainable company or to make an existing company change towards a true sustainability, it is always present a certain level of engagement towards value and lifestyle related to sustainability

Recognition of gap (with the identification of three different kinds of gap, i.e. in the supply chain, in the competences, and in the circular supply chain)

This driver is again derived partially from the literature where Keskin et al. (2013) presented the driver "Recognizing a social/environmental problem". However, that driver

was too generic and was not able to explain the evolution of the companies analysed. For this reason, it was converted in "Recognition of a gap", which is more specific and helps to understand the evolution of the company to a certain archetype. As it will be seen later, this driver together with another ("Recognition of product value from human competences & activities"), leads to the adoption of "Repurpose for society/environment archetype. In the cases analysed, this driver can be associated to different types of gap. In fact, in the case of Nisolo the gap is in the traditional supply chain, where the Peruvian artisans cannot go to the international market due to a lack of connection. In the case of Mayamiko this gap is due to a lack of competences in the artisans of Malawi, who cannot thrive, even if they have all the potentialities to succeed. Finally, in the case of Elvis & Kresse, the gap is in a perspective of circular supply chain. In fact, what it was lacking was an actor that allowed the reintroduction of dismissed goods back in the value chain.

Recognition of product value from human competences & activities

Again, this driver is derived from the literature "Recognition of a social/environmental opportunity" (Keskin et al., 2013) and made more specific for the cases analysed. In fact, product value can be considered an opportunity. In these cases, the product value derived from competences and skills as in the cases of the Peruvian artisans of Nisolo and of the African tailors in Malawi. For Elvis & Kresse the value is behind the utilization that the fire hose had before being thrown away. In fact, according to Kresse, part of its value was in the story behind the material, linked to the social service of the firefighters. This driver together with the previous of "Recognition of a gap" explains the adoption of the archetype "Repurpose for society/environment".

Recognition of product value from material input

This driver has a story similar to the previous one, in term of derivation from the literature and adaptation to the cases analysed. Here, the opportunity was discovered in a particular material made with disposed items, that the entrepreneur recognized as highly valuable and drove him/her to centre the company's business model on such material.

Risk of future disruption

This driver is totally new. It refers to any kind of disruption in the supply chain, in the industry or in the company. In fact, for TS Design the drastic event mentioned before, could have caused the failure of the business. For Eileen Fisher as well, the drastic event could bring to a failure for companies that will not implement proper practices and could jeopardize the whole industry. The same for Reformation, since Yael recognized that if the fashion industry kept operating with such negative impact on the Earth, the whole industry and the globe will be at risk. This driver is common for the cases belonging to "Substitute with renewable and natural processes"

Drastic event in the supply chain (occurred or potential)

This driver includes the sub-drivers recognized in the literature "Competitiveness" (Viesi et al., 2017; Abdul-Rashid et al., 2017) and "Technology innovation/availability" (Tello & Eunsang Yoon, 2008; Todeschini et al., 2017; Kotir, 2017). In fact, in the cases analysed the drastic events can be of different nature, both positive and negative. For Amara Tulum, the event was positive, since its supplier introduced this new great technology able to produce the fabric (Econyl ®) which is completely sustainable since is done with recycled nylon. This case would fall in the literature driver "Technology innovation/availability". For TS Design, the event was instead negative, as the NAFTA agreement made it lose almost 90% of its customer, thus impacting drastically the downstream of its supply chain. Therefore, sustainability was a means to gain back competitiveness which is a literature driver. Finally, for Eileen Fisher, the drastic event recognized is potential, in case the company and more in general industry keep consuming so much water. Eileen understood that the industry would not last so long if the water consumption will continue at the actual pace. Additionally, sustainability is a means to mitigate the risk for Eileen Fisher. In fact, it is foreseeable that if water availability will decrease in the future years, the prices of high water consuming fabrics will increase drastically, while other such as Tencel ®, which requires less water, will cost less.

Desire to have a social/environmental impact

This driver is derived from the literature with a subtle modification to make it fit better to the cases analysed. In fact, in the literature Carrigan et al. (2017) and Stubbs & Cocklin,

(2008) identified the driver "Desire of improving the well-being of the community". Such driver can be read also as "Desire to have a social impact", enlarged in this work also to environmental aspects.

3.2 Cross-Case Analysis

In this sub-chapter, as already mentioned before all the cases will be cross checked in order to find any similarities or differences among them, so that to be able to identify common paths that led to the adoption of an archetype rather than another. As explained before, since the company sample contains more than one organization for each of group considered (born vs non-born and belonging to different archetype), it was possible to find many peculiar patterns that explain the adoption of an archetype rather than another and to explain the differences between the born companies and the non-born companies. In the first part of this sub-chapter, each driver will be analysed in order to see which are the archetypes involved and which belong to born sustainable rather than non-sustainable companies. The second part will show the paths that led to the adoption of the archetypes from born-sustainable and non-born sustainable companies.

3.2.1 Drivers' analysis

In this part, the drivers will be analysed in order to see which are the archetypes connected and whether they belong to sustainable born companies or to non-sustainable born companies.

3.2.1.1 Base driver: Personal values/lifestyle

It was possible to identify one driver which was common for all the companies analysed. This driver is "Personal values/lifestyle". Somehow, it recurs in all the cases considered, either as something acquired in the childhood and transmitted by the parents or something acquired afterwards during the adulthood. In any case, since it is always present, it proves to be quite critical in the adoption of sustainability. It seems that driver is a sort a base upon which all the other drivers can happen and act their influence. In fact, without this base driver probably the founders would not be particular watchful to potential opportunities raising around them, or they would not be sensible to the possible gaps that

occur in front of their eyes. The values and the lifestyle are breeding ground for the development of any true sustainable business model.

Here below it is presented a table with the quotations for each company's founder, that show the existence of these values/lifestyle for all the cases. As it is possible to see, in all the cases there is a clue that indicate the existence of this driver, which is common to all the archetype, thus is not able to explain why the company takes a specific direction rather than another. Though it is important to explain why the founder decided to enter in the topic of sustainability.

Personal values/lifestyle	Quotations
Nisolo	"After graduating I just wanted to do something that would allow me to pursue my passion for business and using market forces and have a social and environmental impact at the same time."
Mayamiko	"I had always been interested in human rights and sustainable development and always had a passion for fashion: the combination resulted in an awareness of fashion's impact on people and the environment." "I was born and raised in Milan, Italy. My parents have always been very active in the community, so I think that's where the passion for social justice and activism comes from."
Elvis & Kresse	"My Mom's Mom was indescribable in her commitment to others. She was overwhelmingly kind. I don't even remember the context of this, but she once said to me: "If you are capable of something, you are responsible for it". I think about this all the time. If I can do something about it, then I have to do it. I just have this belief that we can do better."
Reformation	"I read stuff watched a lot of documentary, about sustainability … I had to do something about that. I was wondering if join a charity, picking up trash…"

	"Another issue was (and I didn't recognize it as an environmental issue) the waste. In my house I don't have stuff everywhere because I don't like it."
Eileen Fisher	"When Eileen founded the company in 1984 her vision was to use natural fibers (cotton, silk, wool, linen). She also had this idea of timeless design. So design that doesn't go out of style and becomes not trendy."
TS Design	"I don't exactly know for what reason, but we've also always had an interest in caring for the environment, my partner says it came from an Earth Day event I went to back in the early 80's."
Amara Tulum	"I was supper passionate about environment and my working in fashion always felt conflicted, even promoting and trying to get people buying stuff is something like a conflict between my believes and the industry I was involved in. So eventually I started asking the question how can I make these two aspects of myself not in contradiction."

Table 65 Personal values/lifestyle

3.2.1.2 Recognition of gap

First, it is necessary to explain that three kinds of gap were identified, i.e. in the supply chain, in the competences and in the circular economy.

Looking at all the cases, it emerges that this driver occurs in just 3 of the 7 firms analysed, which are Nisolo, Mayamiko and Elvis & Kresse. This is significant because all of them belong to the archetype **"Repurpose for society/environment".** For this reason, it is possible to state that this driver is specific for this archetype. This is reasonable because as previously explained, this driver derives from the literature as "Recognition of a problem" and as Bocken explained, social enterprises belonging to "Repurpose for society/environment" have the goal to solve already existing problems. Therefore, these companies put this social/environmental problem at top priority, even before profit maximization. Considering Nisolo and Mayamiko, they want to improve the well-being of the population by capturing and sharing the potential value embedded in the competences of the artisans and the tailors. In other cases, it is instead an environmental

mission, since Elvis & Kresse started with the goal to solve the issue of disposed fire hose and continue afterwards addressing other disposed materials, such as leather, shoes box, tea sacks etc.

Here below, the table with the quotations related to this type of driver for each company:

Recognition of gap	Quotations
Nisolo	"… 3000 of shoemakers in the same city facing the similar challenge that the local market is become completely saturated, no one had products to the international market." "Why there was no growth for William, what issues he was facing. And it really came down to market more than anything else."
Mayamiko	"I had been doing work in Malawi since 2005 (and in other developing countries) and I could see so much potential that could be unlocked by providing education and skills."
Elvis & Kresse	"…we need designers to create exciting circular goods, we need more of the most talented sales and marketing professionals to seek out companies who make this way and take their talents to businesses where circular successes can be scaled and we need to governments to raise landfill taxes or create other incentives to drive circularity…"

Table 66 Recognition of a gap

3.2.1.3 Recognition of product value from human competences & activities

As the driver discussed before, also this one appears to be specific for the companies belonging to the archetype "**Repurpose for society/environment**". In fact, Nisolo, Mayamiko and Elvis & Kresse were able to recognize a potential value deriving from human competences (Nisolo and Mayamiko) or from human activities (Elvis & Kresse). In the first case, Nisolo and Mayamiko recognized the potential in the abilities of Peruvian artisans and in the exuberant designs of African tailors respectively. In the second case, Elvis & Kresse recognized that the story of social activism behind disposed firehose increased its value. In both the cases, the founders recognized the possibility to extract

some value, that would have been possible to share with the local communities or with the Firefighters charity in the case of Elvis & Kresse.

Here below, the table with the quotations related to this type of driver for each company:

Recognition of product value from human competences & activities	Quotations
Nisolo	"And I haven't never seen a shoes being made I was very interest and I turned the corner and in this kind humble home on the outskirt of the city and her husband is sitting there hand making by himself one of the nicest looking shoes I have ever seen and of course it kind of rock my world a little bit saw this high quality product in this environment."
Mayamiko	"I had been doing work in Malawi since 2005 (and in other developing countries) and I could see so much potential." "Her eye for fashion led her to discovering an incredible opportunity in these rural communities. Malawi clothing is well known for its exuberance. The bright colours, beautiful patterns and locally-made fabrics is so distinctively unique."
Elvis & Kresse	"We fell in love with the hose instantly, how could we not? The hose is a life saving material whose long history of active service is evident in its scars and colour variations. Its association with fire service personnel, our heroes, was also a draw."

Table 67 Recognition of product value from human competences & activities

3.2.1.4 Recognition of product value from material input

This driver instead occurs both in Elvis & Kresse and Amara Tulum. As it was said before in the description of the cases, Elvis & Kresse is not only in the archetype "Repurpose for society/environment", but also in the archetype "Create value from waste", which is the same archetype Amara Tulum belongs to. Therefore, when the product value is in the input deriving from a specific material, it is possible arguing that this driver is specific for the archetype "**Create value from waste**". This is reasonable. In fact, practices belonging to this archetype can be adopted also marginally by companies of other archetypes. However, Amara Tulum and Elvis & Kresse are centred on this business model. Their core proposition and value creation processed are related to materials disposed (alias waste). Elvis & Kresse recovers disposed materials such as fire hose, leather, shoes box, tea sack and upcycle these materials, thus creating products of higher value and quality than the material input. Amara Tulum on the other hand relies on its unique supplier that created this new fabric from recycled nylon rescued by the oceans and in small part as by-products. Therefore, both of them recognized a value within the material considered. For Elvis & Kresse, it recognized the quality of the fire hose (the material from which they started), since it is very durable and strong. Amara Tulum instead recognized the value of the product in its similarity to the previous material utilized in term of qualities (Amara Tulum was not born sustainable), yet without contributing to increased demand of raw materials. Additionally, the new material allows the company to clean the ocean as a by-product.

Here below, the table with the quotations related to this type of driver for each company:

Recognition of product value from material input	Explanation
Elvis & Kresse	"…Then you have the nature of the material itself (of firehose), it is incredibly strong and durable, with far too much potential to languish in landfill"
Amara Tulum	"Fortunately, I was using the Italian mill already and they introduced the recycled fiber and so as soon as it was available I

	switch to that material and started to make sustainability a huge part of our brand" "Exactly, I mean the ocean is one of the most important thing, so if we can clean it up in an anyway as by-product of our company, that's pretty amazing. "

Table 68 Recognition of product value from material input

3.2.1.5 Risk of future disruption

Here too, this driver occurs just in companies with the same archetype, which is "**Substitute with renewable and natural processes**". In fact, it is possible to observe this driver in the firms Reformation, Eileen Fisher and TS Design. All of them recognized a risk in the close or far future. There is TS Design, which was risking the failure due to the drastic event caused by the NAFTA agreement, and so decided to redesign its core service of t-shirt printing along ecological principles and to install a solar array and a biodiesel co-op to get competitiveness and differentiate itself from the other players. Then, there is Reformation founded by Yael, which after the travel in China started to make some calculations about the long-term impact of the fashion industry on the planet and she recognized that with the current situation the industry would arrive in a point of no return. Finally, there is Eileen Fisher which recognized in the future a potential supply chain disruption if the consumption of water does not decrease, putting at risk the entire business. Then, it emerges that in the case of a risk related to the supply chain, "Substitute with renewable and natural processes" is a mean to gain competitiveness/mitigate the risk. Eileen Fisher at the same time mitigates the risk and potentially gains competitiveness in the future compared to competitors that did not decided to adopt materials requiring less amount of water (price competitiveness, due to potential shortage of water). TS Design obtained competitiveness by differentiating from the competitors. However, this archetype is also available for companies that want to have an impact as Reformation, which recognizes the risk in the future of the industry and of the planet if things do not change. This driver demonstrates that the adoption of the archetype "Substitute with renewable and natural processes" can be adopted both with an environmental goal and with a goal of competitiveness.

Here below, the table with the quotations related to this type of driver for each company:

Risk of future disruption	Quotations
TS Design	"… and then NAFTA [North American Free Trade Agreement] came along, and within two years we lost about 90% of our business. That was an awakening to us in terms of global trade, and in terms of competition ... Fortunately I had a friend, Sam Moore from Burlington Chemical Company, who was years ahead on this sustainability stuff. He came to my partner, Tom, and I, and he said 'you need to develop a triple-bottom-line business model'."
Eileen Fisher	"The major thing that happened was in 2012 when Eileen was on a trip and visited some suppliers (and she never did that before) and when she came back from that trip she said oh my gosh, I just realized for the first time what it is going on in the planet. I just realized how critical global water supply is right now. This is 2012 and she said if we don't change the way we do business we would run out of water. Our supply chain will run out of water and we won't have a business."
Reformation	"So there is this area where I am in and they are producing 80% fashion and the pollution is at a level which is hard to understand if you can't see with your eyes: two blocks there is no visibility, there is

	water ways in the middle of the city very polluted and there is people alongside the street and like farming rice and it was terrible and I came back really depressed to the states. I was like I don't know if I can do it anymore. I had this sort of moment where you have so much empathy from having seeing the impact first hand and I started to have this incredible amount of accountability for it: like I'm making 15000 dresses for company, all them are made out of fossil and now I understand, it would take hundreds of year to biodegrade and I don't know if I can do it anymore."

Table 69 Risk of future disruption

3.2.1.6 Drastic event in the supply chain (occurred or potential)

This driver is very different from the ones mentioned before, since it is not common to all the archetypes, but nor specific of a single one. In fact, it is possible to find it in the case of Amara Tulum, which belongs to "Create value from waste" and in the cases Eileen Fisher and TS Design, which are "Substitute with renewable/natural processes". However, the characteristic shared by all the firms is that they were **not born sustainable**, but they embraced it only in a second moment. This is interesting, since it indicates the necessity of a drastic event in the supply chain to produce a clear turnaround in the direction of sustainability. This is reasonable, since changes are always difficult to be made in an already existing organization. There must be something that shake deeply the current situation. For TS Design it was going close to the failure due to NAFTA agreement, which impacted drastically its downstream supply chain. For Eileen Fisher it was recognizing the potential of a drastic future event in the supply chain if the situation does not change. Indeed, the actual water consumption of the suppliers is not sustainable in the long term, thus putting at risk the whole business. For Amara Tulum it was more a

positive drastic event, since its supplier introduced a new material made from recycled plastic.

Here below, the table with the quotations related to this type of driver for each company:

Drastic event in the supply chain (occurred or potential)	Quotations
TS Design	"… and then NAFTA [North American Free Trade Agreement] came along, and within two years we lost about 90% of our business. That was an awakening to us in terms of global trade, and in terms of competition ... Fortunately I had a friend, Sam Moore from Burlington Chemical Company, who was years ahead on this sustainability stuff. He came to my partner, Tom, and I, and he said 'you need to develop a triple-bottom-line business model'."
Amara Tulum	"Fortunately I was using the Italian mill already and they introduced the recycled fiber and so as soon as it was available I switch to that material and started to make sustainability a huge part of our brand"
Eileen Fisher	"The major thing that happened was in 2012 when Eileen was on a trip and visited some suppliers (and she never did that before) and when she came back from that trip she said oh my gosh, I just realized for the first time what it is going on in the planet. I just realized how critical global water supply is right now. This is 2012 and she said if we don't change the way

	we do business we would run out of water. Our supply chain will run out of water and we won't have a business."

Table 70 Drastic event in the supply chain (occurred or potential)

3.2.1.7 Desire to have a social/environmental impact

This driver is similar to the previous, since it belongs to 4 firms that fall in 3 different types of archetype. In fact, there are first of all Mayamiko and Nisolo, which are pure "Repurpose for society/environment". Then there is Elvis&Kresse which is a hybrid with both "Repurpose for society/environment" and "Create value from waste". Finally, there is Reformation that is a "Substitute with renewable and natural processes". However, here too there is a common characteristic shared by all the 4 firms. All of them were **born sustainable**. Hence, as the previous driver could be linked to the non-born sustainable companies, this one can be connected to born sustainable companies. Each of these organizations want to have an impact in the world, some focusing more on the human side, such as Nisolo and Mayamiko, and some focusing more on the environmental side as Reformation and Elvis & Kresse.

Here below, the table with the quotations related to this type of driver for each company:

Desire to have a social/environmental impact	Quotations
Nisolo	"After graduating I just wanted to do something that would allow me to pursue my passion for business and using market forces and have a social and environmental impact at the same time."
Mayamiko	"At the very heart of it, there is a sole desire to help change people's lives by giving them choices. Choices come in the form of education, skills training, access to finance, and many other options that we often take for granted."

Elvis & Kresse	"We are doing this to solve the problem of world's industrial leather waste. That is 800,000 tonnes every year." "It took us 5 years to grow to the size where we could solve London's problems (of disposed firehose) but by 2010 we were doing it and have to continue to do this each year." "By 2010 we were large enough to be rescuing all of London's decommissioned hoses. The problem we first launched the business to solve, was solved."
Reformation	"I started to think I have this very big interest in new business model I have this expertise In fashion and I have a real desire to solve this issue, fashion impact on the environment. I knew it didn't have to be. I started researching and I was there were so many things that would be very impactful in term of sustainability by changing just something. Why wasn't anybody doing something? So I decided to build it."

Table 71 Desire to have a social/environmental impact

3.2.2 Recognition of general paths

As it was explained before there are some drivers that are common to specific archetypes, drivers that are common to companies born sustainable and drivers that belong to companies that on the other hand adopted sustainability after their births. Hence, it is important grouping firms with the same archetype and status born/non-born in different

classes, in order to understand which are the drivers that characterize each class. Looking at the companies in the sample and considering their characteristics in term of archetype and of attribute born/non-born, these are the possible classes:

- Born sustainable companies → Repurpose for society/environment
- Born sustainable companies → Create value from waste & Repurpose for society/environment
- Born sustainable companies → Substitute with renewable and natural processes
- Non-born sustainable companies → Create value from waste
- Non-born sustainable companies → Substitute with renewable and natural processes

3.2.2.1 Class 1: Born sustainable → Repurpose for society/environment

In this class there are the companies Nisolo and Mayamiko. Both of them follow the same story that led them to the adoption of the archetype "Repurpose for society/environment". Initially, the founders had all a background of solid values imprinted to kindness, environmental protection and social activism. These values made grow in their mind the desire to have an impact in the world, either social or environmental. They want to change the current situation and solve problems. That was the first driver that made them decide to focus on sustainable business models. In these cases, the problems recognized were the existence of "gaps", respectively in the supply chain and in the competences. The founders were able to recognize a potential value locked behind the gap and they understood that they would have found some economic value by bridging that gap.

They figured out that this value would have been a great opportunity to start a profitable business which would have been also able to share such value with the local communities. Probably this last driver "Recognition of product value from human competences & activities" is that that discriminates between charities and social enterprises as those considered here. Interesting is the story of Mayamiko, which even started as a charity and then developed the for-profit branch Mayamiko The Label, thus indicating that the two types of organizations are not so far each other and corroborates the hypothesis that this last driver is that that makes the difference.

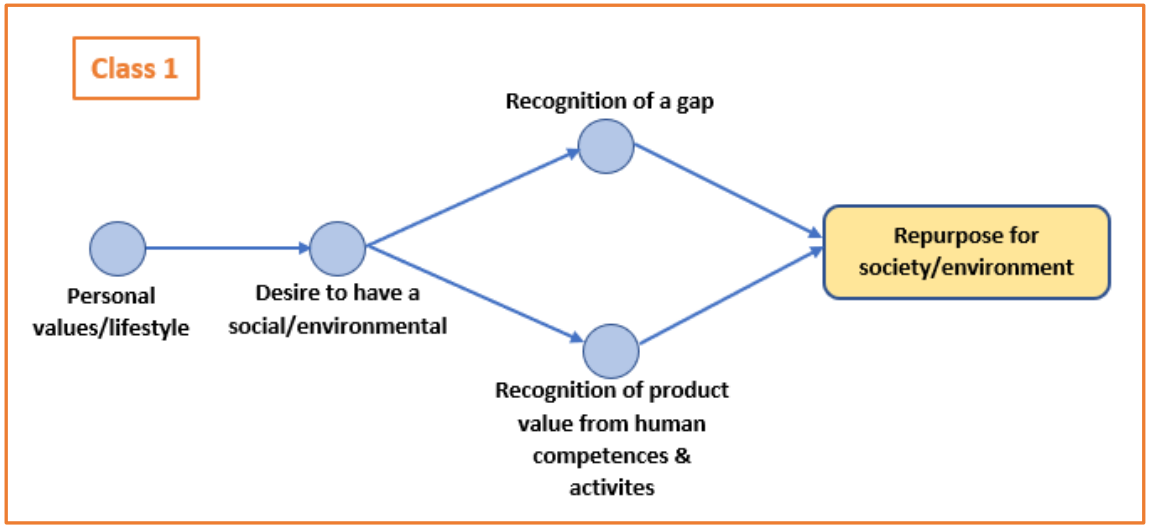

Figure 13 Class 1: Born sustainable - Repurpose for society/environment

3.2.2.2 Class 2: Born sustainable → Create value from waste & Repurpose for society/environment

This class comprises just one company which is Elvis & Kresse. This company, which was born sustainable, belongs clearly to the archetype "Repurpose for society/environment", since its environmental mission of addressing the problem of waste and the fact that it shares 50% of its profits with the charities. According to this nature it is possible to recognize the same path discussed for the previous class. The founders had a background of solid values oriented to kindness and to do the right thing. Here too, they wanted to have an impact on the environment and this driver made them decide to focus on sustainable business models. As the previous case, the desire to adopt a sustainable business model was pushed towards the archetype "Repurpose for society/environment" by the driver "Recognition of a gap". In this case, the gap was in a perspective of circular economy. In fact, they understood that the disposed items still possessed an economic value that could have been capture. Hence, they decided to bridge that gap by re-entering these item in the value chain. As before, the second driver leading to "Repurpose for society/environment" was "Recognition of product value from human competences & activities". This value derives from the story behind the fire hose (the material with which they decided to start), linked to the activities of fire fighters engaged in saving life. Therefore, the founders had the desire to acquire that value and then sharing it with the Fire Fighters charity. However, Elvis&Kresse belongs not only to the archetype

"Repurpose for society/environment", but also to "Create value from waste". Coherently, it is possible to note another driver which is in common with the firm Amara Tulum (also Create value from waste, but non-born sustainable). This driver is "Recognition of product from material input". In fact, beside the value associated to the story behind the firehose, Kresse recognized value proper of the material itself, which is very strong and durable. Hence, as explained before it is reasonable that the utilization of this upcycled material is positioned at the core of Elvis & Kresse value proposition.

Here below the map of the drivers' path. As it is possible to observe it is similar to the previous class, which the additional one of "Recognition of product value from material input"

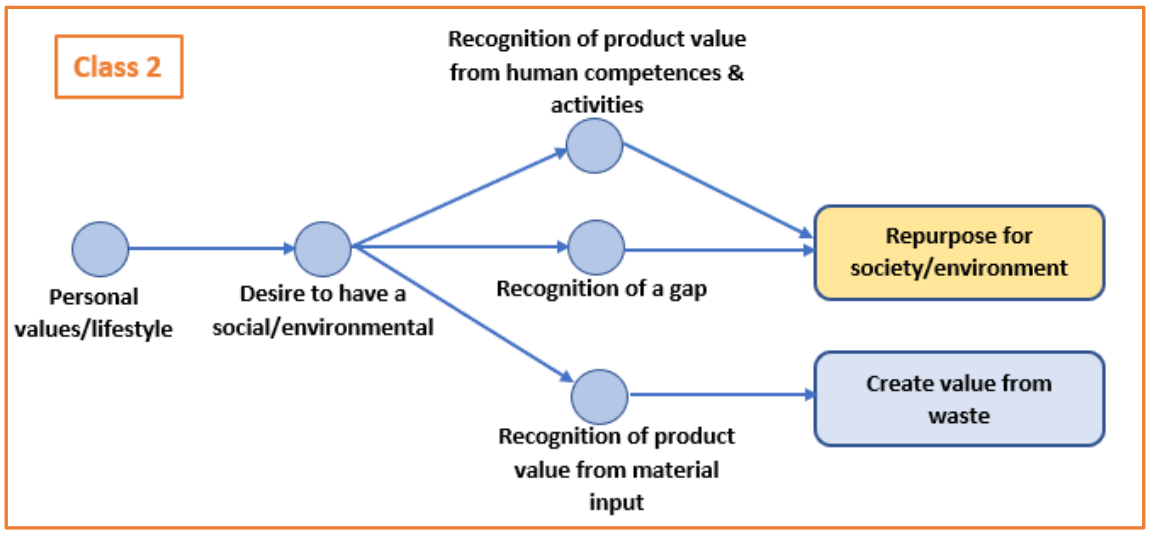

Figure 14 Class 2: Born sustainable - Create value from waste & Repurpose for society/environment

3.2.2.3 Class 3: Born sustainable companies → Substitute with renewable and natural processes

In this class it is possible to find the company Reformation. For the first part of path there is no differences compared to the previous cases. Yael has strong values and the desire to have an impact in the fashion industry. She is aware that customers position sustainability as something not cool or trendy, and for this reason they are reluctant to buy sustainable clothes. With Reformation, Yael wants to reposition this idea in the mind of the consumers by associating the concept of sustainability to cool and trendy girls, thus making eco-friendly clothes appealing for the final consumer. Then, Yael decided to open a company focused on sustainable business models. Additionally, Yael recognized a

potential “Risk of future disruption”, related to the reaching of a point of non-return in the environment conditions and consequently also in the industry. Hence, it is reasonable that the archetype chosen was “Substitute with renewable and natural processes”, as among the archetypes it is the one with the greatest focus on the theme of pollution prevention and reduction of finite resource consumption.

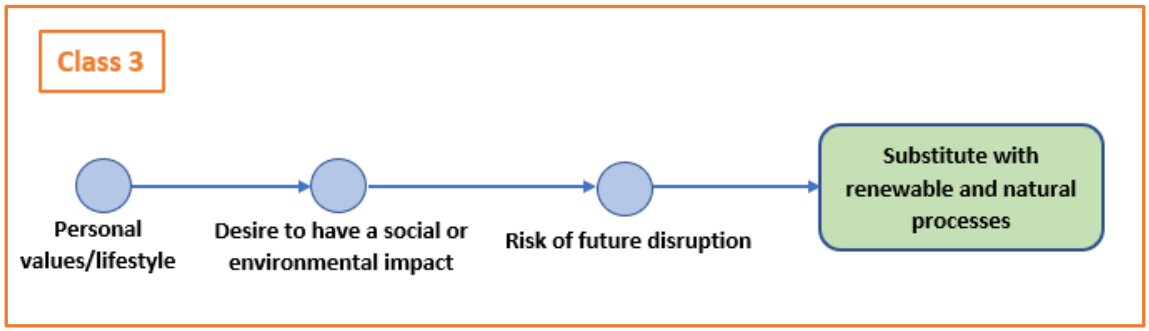

Figure 15 Class 3: Born sustainable companies - Substitute with renewable and natural processes

3.2.2.3 Class 4: Non-born sustainable companies → Create value from waste

This class comprise just one company, which is Amara Tulum. That company was not sustainable at beginning, but it embraced it only afterwards. It was needed a drastic event in the supply chain to make it focus on sustainable business models This event was the introduction of a new technology from its unique supplier. This new technology introduced a great innovation in the fabric sold by this supplier (Aquafil). This innovation allows the company to create a fabric from recycled nylon rescued mainly by the oceans. This material (Econyl ®) has the same characteristics of the raw nylon, but it is more sustainable because it does not contribute to consumption of new resources. In addition, the adoption of this material has the positive externality of cleaning the water as by-product. In fact, the higher the adoption of this material, the higher the cleaning effect on the oceans. Therefore, the founder recognized the great value inside this material and as a consequence she decided to put it at the core of the firm’s business model, thus falling in the archetype “Create value from waste”. Finally, it is important to say that also here the founder had already strong values and commitment and in fact, she felt in conflict when her company was not sustainable. Then, it is possible recognizing that the founder was predisposed to adopting a sustainable business model, as she was caring for environmental protection even before the turnaround.

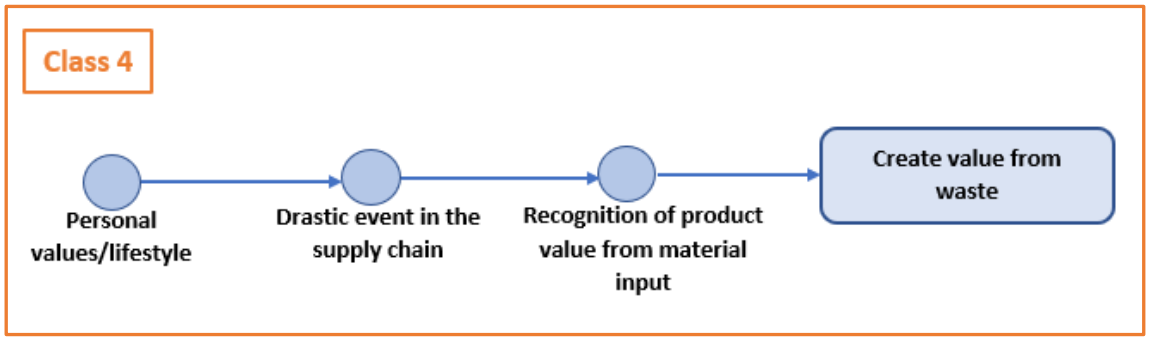

Figure 16 Class 4: Non-born sustainable companies - Create value from waste

3.2.2.4 Class 5: Non-born sustainable companies → Substitute with renewable and natural processes

This class comprises the companies TS Design and Eileen Fisher. As Amara Tulum, here too the companies were not born sustainable. Again similarly, the decision to turn to sustainable business models was triggered by an occurred drastic event in the supply chain or by the forecast of a future drastic event in the supply chain. As explained before, TS Design experienced the loss of 90% of its customer due to the NAFTA agreement and Eileen Fisher feared a future disruption (drastic) in the supply chain due to a water shortage. As a consequence, they decided to shift the business model towards a true sustainability. They were both moved by a risk of future disruption, since in the case of TS Design, the firm was risking the failure in the short term, while Eileen Fisher was risking a future disruption in the supply chain, due to a potential shortage of water. However, even here, the founders had lifestyles and values not far from sustainability, since Eileen really liked naturals and organic materials and Eric (the founder of TS Design) said it was interested in environment also before turning the company towards sustainability.

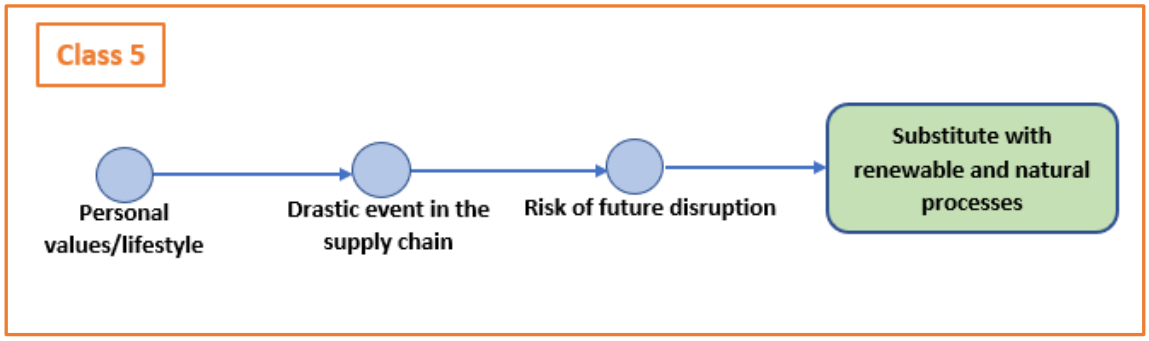

Figure 17 Class 5: Non-born sustainable companies - Substitute with renewable and natural processes

3.2.2.5 Generic overview & research questions' answers

This next paragraph put together what explained in detail before, in order to have the overall big picture and to answer the two research questions which were:

- **RQ1: What are the drivers to explain the adoption of a certain sustainable business model archetype in the fashion industry?**
- **RQ2: For each archetype, which are the differences between the drivers for the companies born sustainable and the non-born sustainable companies (i.e.the companies that were not born sustainable, but became sustainable)?**

Putting together the paths of each class, it is possible to get the big picture of the evolution that brings the companies to select a precise archetype rather than another. First of all, it is possible to recognize the base driver "Personal values/lifestyle", which is common to all the cases and that probably acts as starting point for whatever initiative in the direction of a true sustainability. At this point it seems to be necessary to discriminate between two levels among the identified drivers. The first level includes those drivers that make the entrepreneur focus on sustainable business models. These drivers are "Desire to have a social/environmental impact" and "Drastic event in the supply chain (occurred or potential)", where the first belongs to non-born sustainable companies, while the second to sustainable born ones. This difference is reasonable, as a change for traditional operating companies is always difficult and a drastic event that creates a sort of "shock" could be the proper mean to unfreeze the current situation.

After the decision to focus on sustainable business models, it is possible to recognize a further level of drivers, that explain the adoption of a specific archetype rather than another. The union of the driver "Recognition of a gap" and "Recognition of a product value from human competences & activities" determines the adoption of "Repurpose for society/environment", the driver "Recognition of product value from material input" determines the archetype "Create value from waste" and the driver "Risk of future disruption" determines the archetype "Substitute with renewable and natural processes". This explanation provides a clear answer to **the first research question**, since associates for each archetype their specific drivers.

Instead, trying to answer **the second research question**, it emerged that the differences between born and non-born cannot be detected inside the drivers related to the archetypes,

but at a step before, where there is the decision to focus on sustainable business models. The decision of the archetype occurred only afterward. Here below the general map that explains the evolution of all the cases and the table that show graphically the distribution of the drivers among companies:

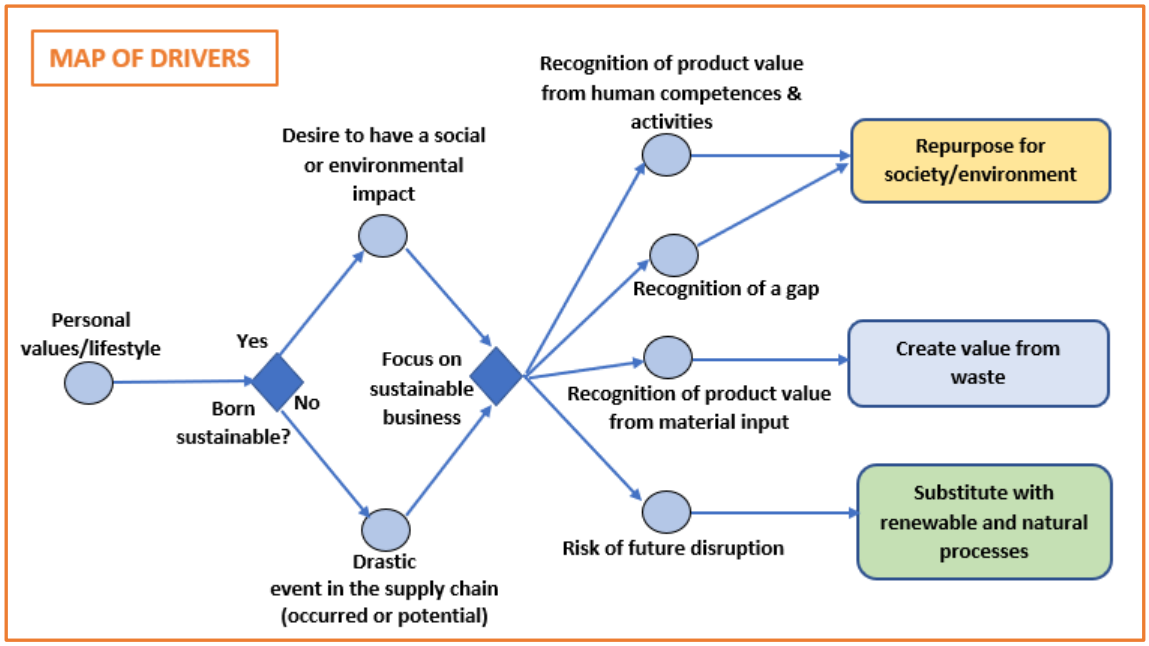

Figure 18 Map of drivers

4. Conclusions

This work provides an innovative contribution to the literature by answering the questions of the research framework, which are:

- RQ1: What are the drivers to explain the adoption of a certain sustainable business model archetype in the fashion industry?
- RQ2: For each archetype, which are the differences between the drivers for the companies born sustainable and the non-born sustainable companies (i.e.the companies that were not born sustainable, but became sustainable)?

Such gaps emerged by the identification of some gaps in the literature regarding the identification of the drivers connected to each archetype and the differences existing between born sustainable companies and non-born sustainable companies.

This work was able to answer such questions by providing a general map that shows the connection of each driver to the related archetype and the existence of peculiar drivers for the born sustainable companies and the non-born sustainable companies.

It emerged that the driver "Personal values/lifestyle" is common for all the cases considering, proving to be a sort of breeding ground for the adoption of sustainability. The drivers "Recognition of a gap" and "Recognition of product value from human competences & activities" were connected to the archetype "Repurpose for society/environment".

The driver "Recognition of product value from material input" was connected with "Create value from waste" and the driver "Risk of future disruption" (in the supply chain or at global/industry level) to "Substitute with renewable and natural processes".

Finally, two drivers explained the existence of sustainable born companies against non-born sustainable. The driver "Desire to have a social/environmental impact" was related to companies born sustainable, while the driver "Drastic event in the supply chain (potential or occurred)" was connected to non-born sustainable companies.

Such results as well as all the information presented provide managerial implications and support. First, it emerged that the archetype "Substitute with renewable and natural processes" can be an effective mean to face the risk of disruption. In fact, on the one hand it proves to be a good strategy for mitigating the risk of an upstream supply chain disruption, since the company starts to increasingly rely on non-finite resources and sustainable materials (e.g. Eileen Fisher). Then, it appeared to be also an effective survival strategy against a downstream supply chain disruption, since it contributes to improve the brand market position, thus reducing the risk of losing more customers (e.g. TS Designs). Finally, this archetype can prevent the risk of future disruption also in the perspective of the whole industry. In fact, it reduces drastically the environmental impact of the companies, which distances the risk of reaching an environmental point of non-return, that would affect the whole industry (e.g. Reformation).

Another insight derived from this study is that is important to pay attention to possible "gaps" existing in the industry and in the supply chain. In fact, behind a gap it could be possible to find great value both economic, environmental and social. Hence, if an entrepreneur wants to start a sustainable company, it could start by looking at the current situation in search of these mentioned gaps. In particular, the transition from the linear

supply chain to a circular supply chain (e.g Elvis & Kresse) could offer many opportunities to start a successful business.

Usually, the path towards a true sustainability is slow, however step by step it is possible to continuously improve. In particular, from Eileen Fisher's case, it emerged that for non-born sustainable companies aligning the suppliers' values to the own ones can be a hard process. Eileen has not succeeded in this process yet, but she is making progress by acquiring all the detailed information regarding the condition of the suppliers' workers. Hence, the information collection phase can be considered also by other companies with the goal of becoming more ethical.

Further, another lesson derived from the case of Reformation is that marketing is important. Sustainability is perceived in a negative way in the market, as customers think that sustainable clothes are not fashion and cool. Hence it is critical changing this mentality in order to have a greater impact in the industry. This can be done by effective marketing efforts that has to create an association between sustainable and fashionable.

International governmental organizations could play an important role in the transition towards a sustainable world. Beside the incentives to sustainable companies, they could also point out relevant challenges and gaps to entrepreneurs interested in sustainability. Such increased awareness could facilitate the birth of sustainable companies desiring to address social and environmental missions.

Even if this work provides great contribution to the literature, it presents also some limits. First, not all the archetypes were considered, due to sample characteristics. Hence, new researches could address new companies belonging to the remaining archetypes, in order to complete the map of drivers.

Another limitation consists in the low number of companies, which does not provide a complete coverage of each archetype. Hence, the results found in this work should be expanded also by considering new companies of the analysed archetypes, in order to find new possible drivers and practices adopted.

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APPENDIX 1: Sustainable Practices

In this appendix the tables containing the practices of all the companies considered are reported-. Such practices are divided per stage of supply chain.

Nisolo

	Practice	Description
Upstream practices	Local chain	The majority of their raw materials are intentionally sourced and processed in close proximity of their production facilities.
	Choice editing	They are increasingly able to push their suppliers to more environmentally friendly practices due to their growing bargaining power
	Monitoring of suppliers	They frequently visit their suppliers
	Green procurement	They select their suppliers according a strict set of criteria focused on operations and ethics. When possible, they source leather from suppliers that have the certification from The Leather Working Group, the most well regarded third party certification in the leather industry.
	Ethical and fair trade	Linked to the previous point, Nisolo's suppliers have to treat their workers fairly and ethically.
Internal practice	Adoption of renewable energy	In their factory in Peru, they are planning to install soon solar panels
	Workers empowerment	Nisolo offers education, training and financial help to empower their workers
	Hand-crafted products	Their products are handcrafter by the artisans
	Resource optimization/efficiency	In their factory in Peru all light is LED to reduce environmental footprint.
	Ethical and fair trade	Their workers received a consistent salary, work in pleasant and safe spaces and are treated ethically.

	Measuring their social impact	They use the Progress Out of Poverty and Human Development Index to measure their social impact.
	Adoption of organic/benign materials & processes	They are starting to adopt vegetable tanned leather, which is much more sustainable and environmentally friendly.
	Upcycling	All Nisolo jewelry are made from upclycled materials in Nairobi
Network practices	Collaborations with 3rd parties and organizations	Nisolo collaborated with 3rd parties to develop the Progress Out of Poverty and Human Development Index. Further it joined the B-Corp community that certifies Nisolo's high standard in term of sustainability, accountability and transparency.
	Social business	Nisolo is a social business which aim at empowering artisans of underdeveloped countries. In particular, so far it focused on Peru, Mexico and Kenya.
	Collaborations with independent artisans	Nisolo collaborates with independent artisans in poor areas such as Kenya, in order to empower them and raise them out of poverty.
Marketing practices	Communication of the company's sustainability involvement	Nisolo is interested to let the customers know their high involvement in sustainability. Also because they want to generate a shift in the actual situation in the fashion industry.

Reformation

	Practice	Descritpion
Upstream practices	Local chain	They source locally whenever possible.
	Green procurement	They also screen their potential suppliers to seek those that use environmentally friendly practices and fair and safe labour.
	Collaboration with suppliers	They created partners programs to push their suppliers to higher sustainability

Internal practices	Reduction/elimination of waste	Through reduced lead time, they are able to reduce waste
	Packaging	Their packaging is plastic free and made from 100% recycled paper
	Pollution prevention	They invest in clean water system
	Resource optimization/efficiency	They use LED lighting and Energy Star-rated appliances in their offices
	Adoption of renewable energies	They source wind energy and they plan to install solar panels
	Recycling	They recycle, compost organic wastes, and recycle or donate their textile scraps whenever possible. Now, they are recycling about 75% of their garbage. They recycle all their supplies. They use recycled cotton. They use Recover ®.
	Ethical and Fair trade	Over three-quarter of their employees are woman or people from underrepresented populations. All their workers are paid more than the minimum wage.
	Adoption of organic/benign materials & processes	They use materials such as Tencel ®, viscose, flax, Modal ®.
Design practice	Eco-design	They design product with benign and sustainable materials
Downstream practices	Consumer education	They provide a lot of information about the current situation in the fashion industry and they give some suggestions on how behave more sustainably.
	Incentives	Refrecycling program: when the customer receives the box with product ordered online,

		it receives also a special return label. In this way, it can put inside the box the clothes it wants to be recycled and just put the label on the box and leave it out for its mail carrier.
Network practices	Restorative actions	They offset their impacts by planting trees to naturally capture CO2.
	Charity/donations	They donate to People Tree, MUSE school, ACLU, Planned Parenthood, or EDF.
Marketing practices	Communication of company's sustainability involvement	Reformation communicate very clearly its sustainable behaviour and involvement.
	Marketing strategy	Reformation utilizes a language aimed at attracting the attention of the customer. Further, it put side to side sustainability with the idea of sexiness and coolness.

Elvis & Kresse

	Practice	Description
Internal practices	Upcycling	They upcycle rescued materials such as firehose, parachute silk, leather etc
	Adoption of renewable energies	They are powered 100% by renewable energies.
	Hand-crafted products	Their products are hand-crafted.
Design practices	Product durability and longevity	Their products are made with the intention of being durable and with a long life.
	Exploration of new fabrics	They are always looking for new materials to rescue
Downstream practices	Information disclosure	They are very transparent with their customers and with their partners

Network practices	Circular economy	Through the upcycling, they aim at the circular economy.
	Social business	They have the mission to rescue disposed materials, which has a strong environmental impact.
	Charity/donations	They donate 50% of their profits to the Fire Fighters Charity.
	Collaboration with non-profit, local communities, NGOs, other for-profits	They collaborate with the Fire Fighters Charity. They are part of the B Corporation network and they collaborate with other Bcorps. They collaborate with the Burberry Foundation.
Marketing practices	Communication of company's sustainability involvement	Elvis&Kresse communicates strongly its commitment to its social mission.

Mayamiko

	Practice	Description
Upstream practices	Localization	They try to source within a distance of 20 Km
	Ethical and fair trade	They are a hybrid business and they care a lot for their workers. They pay them fair prices, benefits, security etc
Internal practices	Zero Waste	They started their Zero Waste commitment. E.g. they use all cutting waste for other.
	Hand-crafted products	Hand-made fabrics, scarves etc
	Packaging	All packaging is made in recycled paper, up-cycled fabrics and recycled plastic for the postal bag.

	Ethical and fair trade	Their workers earn a consistent salary and work in safe and pleasant conditions.
	Worker empowerment	Mayamiko offers education, training and financial help to their workers.
	Adoption of renewable energies	Their workshop runs on solar panels.
	Adopting organic/benign materials & processes	They use organic cotton. They use natural soap
	Third-party certifications	GOTS certification
	Eco-labelling	Peta Approved Vegan label
	No plastic usage	They avoid plastics (except for recycled plastic) at each step of the supply chain.
	Recycling	E.g. they use recycled paper, recycled plastic, upcycled plastics, recycled water to wash their fabrics.
	Upcycling	Every couple of year they launch an upcycled collection, making use of end-of-roll, end-of-life textiles from factories
Design practices	Timeless design	"Season free" collection
Network practices	Social business	Their business has the mission to empower disadvantaged people in poor countries.
	Hybrid business	Their company is divided in Mayamiko the Foundation (non-profit) and Mayamiko the Label (for-profit), that rely on the Foundation for its production.
	Collaboration with non-profit, local communities, NGOs, other for-profits	They collaborate with Fiore all'Occhiello for upcycled silk collection. They collaborate with One Tree Planted.

	Restorative actions	They offer their customer the possibility to plant a tree paid for by Mayamiko to offset the carbon miles with every order they place online through our partnership with One Tree Planted.
Marketing practices	Communication of company's sustainability involvement	Mayamiko communicates strongly its commitment to social mission and its good social and environmental prctices.

TS Designs

	Practice	Description
Upstream practices	Local sourcing	They try to source locally whenever possible, in order to reduce carbon emissions.
Internal practices	Adoption of renewable energies	They installed a solar array. They use biodiesel.
	Resource optimization/efficiency	They set aggressive energy efficiency targets. They have been trying to use the most efficient lighting possible, including a couple of LED fixtures.
	Adopting organic/benign materials & processes	They developed the REHANCE® processes that adopt eco-friendly materials
Downstream practices	Consumer education	They try to raise awareness about sustainability in their customers.
	Distribution/transportation	They use trucks that run on biodiesel

Network practices	Restorative actions	They are involved with groups like Terrapass who offset all of our business travel.
	Collaboration with non-profits, local communities, NGOs, other for-profits	They collaborate with other companies such as Terrapass, Piedmont Biofuels and Larry's Beans

Eileen Fisher

	Practice	Description
Upstream practices	Green procurement	They ask their suppliers to source wood from Forest Stewardship Council-certified forests and plantations. They choose suppliers that follow certain labour standards.
	Collaboration with suppliers	They try to increase the efficiency of their suppliers in order to save money for the workers.
	Environmental and social monitoring of suppliers	They audit their suppliers and they ask sensible information to have a clear idea of the situation.
Internal practices	Adopting organic/benign materials & processes	They use organic cotton and linen. They use viscose and Tencel®. They have chlorine-free wool.
	Ethical and fair trade	They want that all their workers earn a fair wage an work in safe and pleasant conditions.

	Resource optimization/efficiency	They are working to increase their water efficiency in their manufacturing processes
	Zero waste	They aim at Zero Waste → they sell 97% of their waste to spinners who turn it into coarser fiber for jeans and other products. The remaining 3% is sent to the incinerator, where it is burned to generate electricity for the town.
	Third-party certifications	Bluesign® certified dyehouses (Currently 13% of their product is bluesign® certified). Certificate Standard 100 by OEKO-TEX®. (20% of their product). SA8000 certification.
	Recycling	They adopt recycled polyester, nylon, cotton and cashmere.
Design practices	Exploration of new fabrics	They collaborate with an Italian mill to develop their first chlorine-free wool. They actively supporting the research and development of fibers that do not rely on virgin wood pulp.
	Eco-design (eco-innovation)	They design product with sustainable materials.

	Time less design	They offer product that do not follow fashion trends, but that are timeless.
Downstr	Consumer education	They educate costumers about sustainable practices that they adopt by their own.
Network practices	Collaboration with non-profits, local communities, NGOs, other for-profits	They believe they need to be in a network to have a significant impact. So they collaborate with many organizations.
	Workers empowerment	They been supporting an alternative supply chain where workers are trained to use hand-operated industrial knitting machines and given one free knitting machine.
	Charity/donations	Their Activating Leadership grant program has given over $2 million to support 65 non-profits that help women find their voices and become leaders in their communities and lives.
	Restorative actions	They partner with NativeEnergy to offset their emissions. They offset 50% of their emissions
Marketing	Communication of company's sustainability involvement	Eileen Fisher communicate strongly its commitment to sustainability.

Amara Tulum

	Practice	Description

Upstream practices	Green Procurement	Its supplier is committed towards sustainability
Internal practices	Recycling	Adoption of a material made with recycled items
Design practices	Timeless design	It designs minimalist products that last for long time
Downstream practices	Customer education	It is strongly engaged in educating customers
Marketing practices	Communicating of company's sustainability involvement	

APPENDIX 2: Business models' Nine Building Blocks

Reformation

Business Model		Why?/Quotations
Value proposition	Reformations offers fashionable clothes made with sustainable materials	Video (look at the link), website
Value creation	Key partners: - Key activities: marketing, education, manufacturing Key resources: materials (Tencel, Viscose and others)	- In the video the founder says that they are still looking to build new partnership. - In the video the founder gave great importance to the activity of repositioning the idea people have about sustainability through marketing

		- In the video, she gave importance to the activity of educating people → "I think one of our biggest thing is how do we reposition the way the people think about sustainability" - "I think the manufacturing is really an element of our business model of domestic manufacturing" - In the video, a lot of importance is given to material, in particular to Tencel.
Value delivery	Customer target: cool young women Customer relationship: direct and strong relationship, where Ref tries to educate them. Channels: website, newsletter, social media	- "We have very healthy margins because we go directly to the consumer" - "I do think that our mission and our sustainability afford us a certain forgiveness from our customers … because they do love us because of what we are doing and they think of us in a very god way" - "We also highlight the improvement that we have on newsletter and with a certain cadence on Instagram and our social channels will pulse environmental messages to the customers"
Value capture	Revenues from clothes and accessories	Products sold by the company

	Costs from manufacturing, materials, human labour, education, marketing.	Source of costs identified in the sources
Archetype	Substitute with renewable and natural processes	
Why/General quotation	In the website and in the video they give really great importance to the materials used (Tencel, Viscose, Modal etc)	

Nisolo

Business Model		Why/Quotations
Value proposition	Nisolo is a socially conscious brand connecting underserved, high skill producers to consumers worldwide. It offers leather shoes, chukka boots, sandals, bags, belts & more.	Explicitly said in a document shared with me by them (look at the sources) and in the official website.
Value creation	Key Partners: Factories in Mexico, independent artisans in Kenya, B Lab, investors Key activities: championing factories, empowering underprivileged workers, understanding their customers, measuring their impacts Key resources: human resources, technology and materials	- "We do this (connecting underserved producers) by championing ethical factories already in existence". - "We work with four ethical factories in León, Mexico." - "Our jewelry is made by a team of 11 independent artisans in Nairobi, Kenya." - "Becoming a B-Corp enables us to join a community of likeminded businesses challenging the status quo" - In the link below, a lot of emphasis is given to the activities of workers empowerment. - The key resources, and key activities understanding their customers/measuring impacts are mentioned explicitly in the emails
		-

Value delivery	Customer segment: young, urban professional (mid twenties to late thirties) Customer relationship: strong relationship with a frequent interaction, product reviews Channels: social media (chiefly Instagram), their blog (website)	All these elements are explicitly mentioned in the emails hade with them
Value capture	Revenues from their shoes and accessories Costs from human labour, materials, marketing, production, people empowerment, shipping	Products sold by the company Source of costs identified in the document shared and in the email.
Archetype	Repurpose the business for society/environment.	
General quotation	"We started this company with a social and environmental mission"	

Elvis&Kresse

Business Model		Why?/Quotation
Value proposition	Elvis & Kresse upcycle reclaimed materials into sustainable luxury lifestyle accessories. All ethically handmade with 50% of profits going back to Charities.	From the website

Value creation	Key partners: Fire Fighters charity, Burberry Foundation, B Lab Key activities: donations, product development, rescuing disposed materials Key resources: materials (fire hose, leather, and other rescued materials)	- "We spent several years developing these shapes and now for over one year we have been selling the rugs. We are now working on several ways that people can interact with the pieces and are about to debut a collection that combines both leather and fire hose" - "Everything started from the desire to rescue the fire hose" - "There is a map of materials which is constantly growing, but the map is tempered by reality" - "50% of the profits from the fire hose range are donated to the Fire Fighters Charity" - In 2017 the Burberry Foundation partnered with Elvis & Kresse to tackle the even greater global problem of leather waste
Value delivery	Customer target: NA Customer relationship: they have a space in their website to communicate with customers and additionally they use also Facebook Channels: website, Facebook	From the website
Value capture	Revenues from accessories such as belts, wallets, bag etc	Products sold by the company Source of costs identified in the sources

	Costs from production, donation, materials, product development	
Archetype	Repurpose for society/environment & Create value from waste	
Why/General quotation	Create value from waste clearly emerge from the value proposition. Repurpose for society/environment emerge from the significant share of profit donated and from the fact that their mission is to rescue disposed materials.	

Mayamiko

Business Model		Why?/Quotation
Value proposition	Mayamiko offers products made in its workshop based in Malawi, which allows it to provide work and opportunity of growth to the local women	"Mayamiko the label places orders for products and collections from the lab, which are paid at a fair price. This ensures that the employees of the lab receive good salaries and all the protection and benefits they need in terms of financial, job and health security"
Value creation	Key partners: Cotonea, One Tree Planted, Fiore all'Occhiello Key activities: donation, people empowerment, education Key resources: human resources, financial resources	- For our upcycled silk collection, we have partnered with ethical workshop 'Fiore all'Occhiello' - We have partnered with One Tree Planted, an amazing non-profit organisation who are helping us to give back to the planet one tree at a time - we have partnered with Cotonea, who works with cotton farmers in Gulu

		- The label donates part of its profits to the charity directly, allowing for new programs and activities to be developed. - At the very heart of it, there is a sole desire to help change people's lives by giving them choices. Choices come in the form of education, skills training, access to finance, and many other options that we often take for granted." - I could see so much potential that could be unlocked by providing education and skills, a way out of poverty that was sustainable and not dependent on aid. - Money is always a concern for an entrepreneur
Value delivery	Target customer: Global modern woman Customer relationship: strong relationship through social media Channels: website, social media such as Facebook or Instagram, physical boutique	- A selection of Mayamiko products can be found on the online/physical boutiques listed below - It is possible to observe their activism in their Facebook profile and Instagram

Value capture	Revenues from clothes Costs from production, materials, education, human labour, donations, people empowerment (e.g. grants)	Products sold by the company Source of costs identified in the sources
Archetype	Repurpose for society/environment	
Why/General quotation	"At the very heart of it, there is a sole desire to help change people's lives by giving them choices. Choices come in the form of education, skills training, access to finance, and many other options that we often take for granted."	

TS Designs

Business Model		Why?/Quotation
Value proposition	TS Design offers a t-shirt printing service, made along ecological principles	Explicitly said in the article below
Value creation	Key partners: companies like Piedmont Biofuels and Larry's Beans Key activities: t-shirt printing, education Key resources: human resources, technology	"We already had a care for our employees, and we'd always seen them as our greatest asset" "Much of our business comes through referrals from partners, like Piedmont Biofuels for example, or Larry's Beans" "The REHANCE® printing process is one of your unique selling points, both in terms of environmental performance, and product quality" "Ultimately, it's about educating the consumer, and turning them from consumer, to citizen"

Value delivery	Customer target: major brands such as Nike and Gap (B2B); also B2C sales through website Customer relationship: strong and transparent relationship, where the customers are invited to visit TS Design's workshop Channels: workshop, physical boutique, website, social media (e.g. Facebook)	"TS Designs, a successful apparel company dealing with major brands like Nike and Gap" "We'd love to give you a tour! There are a lot of cool things going on at TS Designs, and we're happy to show you around."
Value capture	Revenues from service of t-shirt printing Costs from t-shirt printing, education, materials, human labour	Service offered by the company Source of costs identified in the sources
Archetype	Substitute with renewable and natural processes	
General quotation	The new printing system called REHANCE® was developed through green chemistry and it is a method that substitute environmental harmful materials like PVC, with low-impact bi-functional reactive dye - it has no heavy metals, no formaldehyde etc.	

Eileen Fisher

Business Model		Why?/Quotation
Value proposition	EF offers products made with natural and organic fibers with a timeless design.	In the interview it emerges that EF decided to sell products made with organic & natural fibers and a timeless design because she liked it.

Value creation	Key partners: environmental & human rights partners Key activities: managing & building the network for sustainability, design, identification of new sustainable fibers. Key resources: financial resources, parners' network, resources	Partners indicated in their website (in the notes the complete list) "What happened, every year the designed team identified a new organic fiber that wanted to begin to use" Human and financial resources explicitly said. Then, in the interview significant importance given to partner's network
Value delivery	Customer target: women with age around 40 Customer relationship: EF is trying hard to educate their customers about sustainability Channels: website, stores	We are targeting younger customers, woman into 40s "we are trying really hard to tell them and to engage them in what we are doing and to incorporate all these messages in signs in the stores, in the information on the clothes, we put it on the website"
Value capture	Revenues from general clothes, shoes & accessories. Costs from materials (organic materials cost much more), production, marketing, human labour, identification of new fabrics,	Products sold by the company Source of costs identified in the interview
Archetype	Substitute with renewables and natural processes/Encourage sufficiency	

Why/General quotations	In the interview, it emerged that when EF started the company, she had this idea of providing products with natural fabrics and timeless design.

Amara Tulum

Business Model		Why?/Quotation
Value proposition	Amara Tulum offers swimwear made with a special material obtained from recycled waste from the ocean	From the interview
Value creation	Key partner: Acquafil Key activity: production, education. Key resources: sewing house, material (Econyl ®)	"We have a small sewing house in Mexico, we are based in Mexico right now" "We are using just one material for one product line, so I think that partnership and using sustainable fabrics is one of the core element of the brand"
Value delivery	Target customer: women between 21 and 60 years old Customer relationship: close relationship, where the founder answers all the comments of her customers Channels: emails, social media (Instagram, facebook), website.	Target customer explicitly said in the interview "I answer all the email, all the Instagram messages, all the comment"
Value capture	Revenues from swimwear.	Products sold by the company Source of costs identified in the interview

	Costs from production, material, marketing, human labour.	
Archetype	Create value from waste	
Why/General quotation	Amara Tulum's clothes are made only with Econyl ®, a material created by recycled materials extracted by the ocean	

APPENDIX 3: Questionnaire

COMAPANY'S INFORMATION

- Which is your size in term of number of employees?

BUSINESS MODEL

Economic Level

Value proposition

- Which is your value proposition (what you offer to the customer)? (tailor this question to the specific company I interview, with more detailed questions)
- Which type of customer do you target?

Value creation

- Which are your key partners? Did you select them according criteria related to sustainability, such as environmental and social aspects?
- Which are your key activities? (Customize this question according to the business model that I see from information obtained by internet)
- Which are your key resources? (Customize this question according to the business model that I see from information obtained by internet)

Value delivery?

- Which are your customer segments?
- Which are your customer relationship?
- Which are the channels to reach the customers?

Value capture

- Which are your revenues and cost stream (meaning sources of revenues and costs)? Do you apply a premium price for to the fact that your product is sustainable?

PRACTICES

- What are your upstream sustainable practices? Those related to sourcing and purchasing??
  Transparency with suppliers
  Green procurement
  Choice editing
  Local chain
  Monitoring of supplier
  Collaboration with suppliers
  ….

- What are your sustainable manufacturing practices?
  Adopting organic/benign materials
  Adoption of renewable energies
  Additive manufacturing
  Recycling
  Repurpose, reuse
  Remanufactured fashion

Third-Party certification
Adoption of Higgs Index
LCA
Resource optimization/efficiency
Hand-crafted production
Pollution prevention
Utilization of by products
Eco-labelling
Reduction/elimination of waste
....

- What are your sustainable practices related to design and new product development?
  Eco-design
  Design for sustainability
  Cradle-to-cradle
  Design for reuse/upgrading/easy maintenance/easy replacement
  Design for recycling
  Exploration of new green fabrics
  Product durability and longevity
  ....

- What are your downstream practices? Those related to selling, distribution, transportation, etc?
  Distribution/transportation
  Change of transportation mode
  Collaboration with customers
  Reverse logistics
  Information disclosure
  Leasing
  Repairing/maintenance
  Second-hand reselling
  Consumer education
  Market places for second hand
  Information sharing with retailers and distributors
  ...

- What are practices in term of sustainable network design?
  Circular economy
  Ethical and fair trade
  Extended product responsibility
  Social business
  Hybrid business models
  Charity/donations
  Collaboration with non-profit, local communities, NGOs
  Franchising
  Crowdsourcing
  Open innovation

Restorative actions
…

- Do you perform any marketing practices to promote sustainability?
  Incentives
  Slow fashion
  Choice editing
  Communication of the company's sustainability involvement
  …

COMPANY'S SUSTAINABLE DEVELOPMENT

- Did you start implementing sustainable practices from the birth of your company, or you became sensible to the sustainability topic afterwards?
- Which is the evolution of your company in the world of sustainability? Which are the practices that you started first and those that came afterwards?
- Did the fact that your were be born sustainable (or non-sustainable) affect the implementation of your sustainable practices?

DRIVERS

- FOR TRADITIONAL COMPANIES: Are there internal or external factors (drivers) that encourage you to embrace the concept of sustainability in your company? Like legislations or economic benefits, or any kind of pressure from the market or stakeholder or in general? Or it was a personal motivation? Or other?
- FOR BORN SUSTAINABLE: what are the factors that make you decide to start a company characterized by sustainability? Like stringent legislations or economic benefits, or you recognized that markets demanded sustainability or pressures? Or it was a personal motivation? Or other?

PERFORMANCE

- Do you measure your performance in term of sustainability? What do you measure?

FUTURE

- What are the next steps regarding the sustainability of your company?