



**“(Re)designing” business models based on circular principles:
a comparative case study of three fashion companies**

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Abstract

Title: “(Re)designing” business models in terms of circular principles: a comparative case study of three fashion brands

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The fashion industry is one of the most polluting sectors worldwide and currently operates under linear economy principles leading to prominent levels of overconsumption. While it is growing rapidly, increasing attention has been drawn to the industry's significant negative environmental and social impacts. Making a transition towards circular systems and incorporating circular economy principles into business models can be one solution for the future of the fashion industry. The purpose of this dissertation is to examine how do fashion companies implement circular practices in their business models. To answer the research question, I used the business model canvas as the theoretical framework and adopted a qualitative approach. I conducted a comparative case study of three fashion companies that have started the transition towards a circular economy. My findings indicated that primarily four components of the business model canvas are affected in the process of transitioning towards circular systems specifically value proposition, key partner, key activities, and key resources. However, they demonstrated that it requires a systematic transformation across the entire value chain. Finally, my findings suggested that it is a complex process, and there are different strategies that can be utilized to implement circular principles, namely incorporating sustainable material choices, exploring new business models, and applying other operational best practices.

Keywords: fashion industry, business model, circular economy, circular business model, circular fashion

Resumo

Título: “(Re)desenhar” modelos de negócios em termos de princípios circulares: um estudo de caso abrangente de três marcas de moda

Autor: Julia Anna Zombori

A indústria da moda é um dos setores mais poluentes do mundo e atualmente opera sob princípios de economia linear, levando a altos níveis de consumo excessivo. Embora esteja a crescer rapidamente, cada vez mais atenção tem sido dada aos significativos impactos negativos ambientais e sociais da indústria. Fazer uma transição para sistemas circulares e incorporar princípios de economia circular em modelos de negócios pode ser uma solução para o futuro da indústria da moda. O objetivo desta dissertação é examinar como é que as empresas de moda implementam práticas circulares nos seus modelos de negócios. Para responder à pergunta de investigação, utilizei o business model canvas como ferramenta teórica e adotei uma abordagem qualitativa. Realizei um estudo de caso comparativo de três marcas de moda que iniciaram a transição para uma economia circular. As minhas descobertas indicaram que principalmente quatro componentes do business model canvas são afetados no processo de transição para sistemas circulares, nomeadamente proposta de valor, parceiro-chave, atividades-chave e recursos-chave. No entanto, estes demonstraram que é necessária uma transformação sistemática em toda a cadeia de valor. Por fim, as minhas descobertas sugeriram que é um processo complexo e que existem diferentes estratégias que podem ser utilizadas para implementar os princípios circulares, tais como, incorporar escolhas de materiais sustentáveis, explorar novos modelos de negócios e aplicar outras práticas de operação recomendadas.

Palavras-chave: indústria da moda, modelos de negócio, economia circular, modelo de negócio circular, moda circular

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List of abbreviations

CE – circular economy

CF – circular fashion

CBM – circular business model

BM – business model

BMC – business model canvas

EMF – Ellen MacArthur Foundation

SBM – sustainable business model

SF – sustainable fashion

1 Introduction

The fashion industry is considered one of the largest and most polluting industries globally with the potential to leave substantial negative environmental and social impacts on the planet caused by the extensive use of natural and non-renewable resources and the high levels of pollution from production and consumption processes (Ki et al., 2021). It is coming under growing criticism worldwide due to the environmental impact of its supply chain. However, the business keeps expanding, in part owing to the popularity of fast fashion, which is characterized by low production costs, high consumption rates, and very short garment lifespans (Niinimäki et al., 2020). It operates under a linear economy model based on the “take, make, dispose” concept (Esposito et al., 2018), which assumes that resources are limitless. Hence, the current linear system is testing the world's physical limitations and exposing it to high risk (Esposito et al., 2018).

One solution to alleviate the environmental stress caused by the fashion sector is to make a systematic move toward circularity (Barbu et al., 2018). According to EMF (2020, p. 5) “a circular economy is based on three principles, all led by design: eliminate waste and pollution, keep products and materials in the use and regenerate natural systems.” There are three primary strategies to attain circular economy (CE), namely slowing, narrowing and closing resource loops (Bocken et al., 2016a).

Although the fashion industry has a strong desire to move towards a CE, little is known about the principles of the CE and how they might be used in the fashion sector (Dissanayake & Weerasinghe, 2022). In recent years, CE has demonstrated one of the most debated subjects in management research. Although during the past ten years, comprehension of this paradigm has greatly improved (Franzò et al., 2021), there is a dearth of study on circular fashion (CF) which hinders the adoption of CE practices in the fashion business (Ki et al., 2021). Besides, several important research questions remain unanswered. Among them, the design process of business models based on CE principles.

To contribute to filling this gap, I propose to address the following research question: **“How do fashion companies implement circular principles in their business models?”**

This study has managerial relevance, since it can lead to short-term cost benefits and long-term strategic advantages, by maximizing resource utilization, along with new profit streams in reverse cycle services such as reselling, renting. Beyond that, it can boost competitiveness, improve brand value, create employment and foster innovation by building a ‘user-centric

economy', particularly in the services branch (EMF, 2013, 2020a; Heese et al., 2005). Both environmental protection and business profitability can be achieved through circularity (Jia et al., 2020). Moreover, it also has benefits for the society. Economies can gain from large net material and energy savings, less reliance on natural resources, the reduction of supply chain and volatility risks, possible job gains in services, and long-term economic resilience (Dissanayake & Weerasinghe, 2022; EMF, 2013).

To answer the exploratory research question, I used a qualitative approach (Birkinshaw et al., 2011). I conducted a comparative case study on three fashion companies. The three selected firms include Náz, a Portuguese fashion company inspired by circular principles, Théla, a Greek circular lifestyle brand, and Company N, a Hungarian high fashion company extremely committed to responsible production.

This study is divided into five chapters. The first chapter contains the academic literature review that is split into three big sections and provides a comprehensive description of already existing scholarly literature about the fashion industry, potential sustainable solutions for fashion actors, and the transition to circular business models. Besides, it links all three subjects. The second chapter presents the methodology applied, including the research design, the sampling strategy, data collection and data analyses. Chapter 3 outlines the empirical setting by presenting the three selected companies extensively. The fourth chapter provides the answer to the research question. Chapter 5 is a discussion of the findings. Finally, the conclusion provides an overview of the key outcomes, the limitations, and potential subjects for future research.

2 Chapter 1 - Academic Literature Review

The review of the literature shows that the fashion industry is one of the largest sectors of the global economy, produces an incredible amount of waste and pollutes the environment in enormous volumes. It currently relies on a linear economic model; though, this approach overextends natural resources, and it is not long-term resilient to innovation. However, there are several aspirations to pursue sustainability in the fashion business, such as product and process innovations and new, sustainable business models (SBMs), including circular business models (CBMs). Transitioning towards circular systems and adapting circular practices to business models (BMs) can regenerate the environment and support a strong and prosperous fashion business. Scientific literature still falls short about the transition process from linear to circular system within fashion. Besides, guidelines that could help companies in the transition process are missing.

The literature review is divided into three big sections. The first part focuses on the introduction of the fashion industry. The second big section investigates potential sustainable solution within fashion, including the slow fashion movement, product, and production process innovation and SBMs. Finally, the last part discusses the transition from linear BMs to CBMs. It introduces the concept, principles, and challenges of CE. It presents the BM concept and CBMs.

2.1 The fashion companies under pressure

This section introduces the fashion and textile industry, with an emphasis on their present characteristics and trends. Moreover, it investigates their challenges, including negative social and environmental impacts and presents fast fashion.

2.1.1 Attributes of the fashion industry

Today in the global economy, the fashion sector is well-known as a major force. Over 300 million people are employed throughout its value chains, and it is valued USD1.3 trillion (EMF, 2017a). Particularly in the previous 20 years, the fashion industry has undergone substantial changes (Bhardwaj & Fairhurst, 2010) becoming a complicated, fragmented, global structure, in terms of its supply chain, that is based concept of continuous consumption of the "new" and discarding of the "old" (Kozlowski et al., 2012). It has evolved to be increasingly perceived disposable, and the market has become highly globalized, with many clothes being created in

one country, produced in another, and marketed internationally (EMF, 2017a). According to Christopher et al. (2004) the nature of the fashion marketplaces is defined by short life cycles, extreme volatility, limited predictability, and high impulsive purchasing. Due to the changing dynamics of the fashion industry, retailers now need cheap costs, flexibility in design, high quality, and quick time to market in order to compete in the highly competitive market (Bhardwaj & Fairhurst, 2010).

2.1.2 Criticism of the fashion industry

The fashion business has come under growing scrutiny as a major cause of negative environmental (Kozlowski et al., 2012) and social impacts worldwide, especially on people who are at the bottom of the supply chain, despite its remarkable economic significance (Allwood et al., 2015). According to Christopher et al. (2004, p. 1) "Fashion markets are complex open systems that frequently demonstrate high levels of "chaos"" since it is impossible to predict the demand for fashion items.

The emergence of fast fashion heavily influenced the industry (Bhardwaj & Fairhurst, 2010). It is distinguished by its ability to react quickly to the market (low manufacturing and distribution periods), which permits precise matching of supply with ambiguous demand and great design (Ertekin & Atik, 2015). Fast fashion companies are known for their affordable costs and widely available, in-vogue products (Amatulli et al., 2016). Moreover, exceedingly long working hours, hazardous circumstances, "systematic" sexual harassment, violence, and remuneration that is barely over the poverty line continue to be reported (Bain, 2019) while causing serious environmental damage (Chan et al., 2020). It heavily influences the subject of climate change, industrial economy, water scarcity, and human rights (Boström & Micheletti, 2016). Over 92 million tons of garbage are created annually by the apparel industry, the most of which is burned, dumped, or sent to third world nations, and 79 trillion liters of water are used (Niinimäki et al., 2020).

Today's fashion business is driven by unnecessary demand, which goes against the concept of sustainability (Kozlowski et al., 2012). Over the past 15 years, global clothing manufacturing has nearly doubled, yet average garment usage has decreased by over 40% (EMF, 2017a; McKinsey & Company, 2016). According to some estimates, people wear the low-cost items only seven or eight times before throwing them away (McKinsey & Company, 2016). The fast fashion industry and its negative effects sparked the search for solutions, such as the slow fashion movement (Ertekin & Atik, 2015) and the desire for SBMs (Mishra et al., 2021).

2.2 Potential solutions for sustainability for fashion actors

This part focuses on possible approaches how sustainability can be integrated in the fashion business. First, it describes the origin of sustainable fashion (SF) and introduces the slow fashion movement. Moreover, it explores ways of sustainable innovation in terms of products and production processes. Finally, it presents some alternatives of SBMs.

2.2.1 Pursuing sustainable fashion

The concept of sustainable clothing originally appeared in the 1960s and has been evolving since then (Carey & Cervellon, 2014). The term 'sustainable fashion' refers to several corporate initiatives to address diverse perceived shortcomings in the fashion industry (Lundblad & Davies, 2016). The concept of SF covers a variety of terms such as "organic, green, fair trade, slow, eco and so forth" (Grazzini et al., 2021, p. 2). While there is still no universally accepted definition of SF (Mukendi et al., 2020), decent labor conditions, sustainable business strategy (Joergens, 2006), eco-friendly materials, transparency, traceability, and third-party certifications are recognized characteristics of SF (Henninger, 2015). According to Gardetti and Torres (2017) sustainability in the context of fashion entails that no harm is caused to individuals or the environment during production and consumption, and that the end product positively improves the lives of those who use it and the surrounding community.

Sustainable clothing is sometimes misunderstood as the antithesis of fast fashion, while being a central tenet of the slow fashion movement (Pookulangara & Shephard, 2013). The core principles of slow fashion are those of sustainability, including fair treatment of workers, minimizing negative environmental impact (Pookulangara & Shephard, 2013) and prioritizing quality over quantity (Ertekin & Atik, 2015). It applies conventional production methods, as well as upcycling and recycling, and utilizes natural and recycled materials (Henninger, 2015). The in-depth academic knowledge of what sustainable fashion is from a holistic standpoint is lacking in the present research (Henninger, 2015). The following two subsections focus on initiatives and strategies that can foster sustainability for fashion organizations.

2.2.2 Innovation in fashion products and production processes with sustainability aspects

There are various aspirations to pursue sustainable fashion, two possible approaches are the redesign of existing products (Fletcher & Grose, 2012) and the optimization of production processes (Niinimäki, 2015).

Product transformation can be achieved through more sustainable material choices (Fletcher & Grose, 2012) which has been the initial step in developing fashion innovations (de Brito et al., 2008; Fletcher & Grose, 2012). Sourcing and utilizing more sustainable resources such as organic, eco-friendly and renewable resources assumes material that are manufactured with less water and fewer hazardous substances (de Brito et al., 2008; Kozłowski et al., 2015), less waste or under better labor conditions (Fletcher & Grose, 2012).

The goal of sustainable production processes is not only to reduce the negative effects of the industry on the natural environment (Niinimäki, 2011) but to improve social sustainability as well (Henninger et al., 2016). There are several ways of sustainable production methods such as ethical production that ensures fair wages, safety precautions, and improved labor rights (Niinimäki & Hassi, 2011). Moreover, there is recycling that transforms raw resources into new products with new purposes (Henninger et al., 2016; Nasr & Thurston, 2006) and upcycling which aims to increase the value of a product (Henninger et al., 2016; Sung, 2015). Additionally, one of the finest strategies for sustainable production is remanufacturing, since it reduces the need for new raw materials (Krystofik et al., 2015). It involves disassembling used items, cleaning, and remaking component parts to produce a new product (Nasr & Thurston, 2006). Environmentally responsible manufacturing entails the creation of goods with a focus on resource efficiency and mitigating effects on the environment (Ellram et al., 2008). Furthermore, zero waste fashion intends to entirely eliminate fabric waste (Niinimäki, 2013a).

2.2.3 The desire for sustainable business models

The fashion sector has begun to address new BMs, since the increasing demand from a wide range of stakeholders for companies to incorporate more sustainable goals into their operations (Mishra et al., 2021) including SMBs (Geissdoerfer et al., 2018). According to Geissdoerfer et al. (2018), they are a refinement of the traditional BM concept with advanced traits and objectives such as implementing concepts and practices that facilitate sustainability or redefining existing value propositions, value creation and value capture with sustainable principles. SBMs use a "triple bottom line" strategy to balance economic, environmental, and

social considerations by incorporating a variety of stakeholder perspectives (Geissdoerfer et al., 2018; Stubbs & Cocklin, 2008). They play a crucial role in fostering a culture of innovation for sustainability, integrating sustainability into the core of a company's mission and daily operations (Bocken et al., 2014), that can lead to competitive advantage (Porter, 2011).

The literature describes several distinct types of SBMs (Bocken et al., 2014), among them the fashion-on-demand BM (McKinsey & Company, 2019). Fashion on-demand implies that clothes are manufactured to order. It has both benefits and drawbacks. On the positive side, it necessitates decreased capital expenditure, fewer inventory, and enables increased flexibility and agility, along with shorter turnaround periods that can lessen demand uncertainty and support more sustainable manufacturing cycles. Negative aspects include increased production and transportation costs for the company due to smaller quantities (McKinsey & Company, 2019).

CBMs are another variety that aim to decrease negative environmental effects and support sustainability performance of organizations (Bocken et al., 2014). They are built on CE fundamentals (Geissdoerfer et al., 2018). CE can be seen as a solution to address the sustainability challenges resulting from the linear economic model (Dissanayake & Weerasinghe, 2022). The subject of CE will be further discussed in the upcoming section along with CBMs.

2.3 Transitioning towards circular business models

This section introduces the concept of CE along with its principles and CF. Moreover, it presents the BM concept, investigates CBMs and the challenges associated within the transition from linear BMs to CBMs.

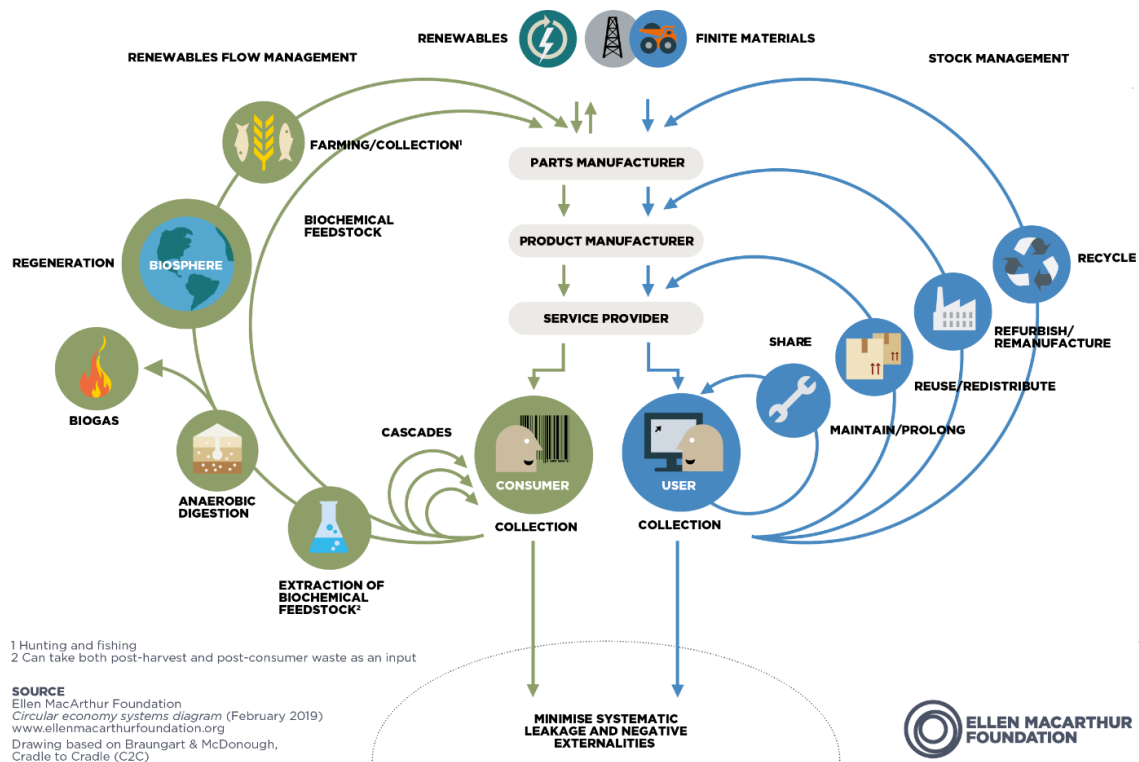
2.3.1 The origin of circular economy

Our society has functioned in a linear economy since the industrial revolution (Esposito et al., 2018). Our "take, make, dispose" culture has turned the globe into a consumer and "single use" society (Esposito et al., 2018) putting a limit on classic linear consumption patterns and testing the restricted availability of resources (EMF, 2017b). Since it implies the conventional system of materials moving in a straight flow (EMF, 2017b) that suggests that vast amounts of valuable resources are being wasted in the linear system (EMF, 2013; Niinimäki, 2017). This concept has shown deficiencies since the turn of the millennium, and the eventual collapse is anticipated to happen shortly (Sariatli, 2017).

On the contrary, the CE concept has been developed based on the idea that the environment and the economy must concur (Bocken et al., 2017). With the intention of reducing the quantity of supplies required in industrial production, the CE concept first originated in the 1970s. CE targets closed-loop (circular) material and energy systems across all industries to minimize natural resource utilization and negative environmental effects by transforming products that have reached the end of their lifespan into resources (Stahel, 2016). This means that it serves as a paradigm for effectively using already generated assets (EMF, 2015). CE is an emerging model, there is no universally accepted concept of CE in academia, and several interpretations exist side-by-side (Homrich et al., 2018). Geissdoerfer et al. (2017, p. 759) define CE as a “regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops [...] and recycling.” Narrowing refers to the utilization of few resources, slowing suggest that the duration of product use is lengthened or intensified, consequently, the movement of resources is moderate (Bocken et al., 2016a). Besides, closing the loop between after being used and manufacturing leads to a circular resource flow (Stahel, 2016). Nevertheless, the most eminent interpretation is formulated by EMF (2013, p.7) which states that “circular economies are restorative and regenerative by intention and design” and as Webster (2015, p. 16) continues they “aim to keep products, components and materials at their highest utility and value, at all times.” Figure 1 shows the CE system diagram by EMF.

Based on the ‘Cradle to Cradle’ concept of McDonough and Braungart (2010) the theory of closed loops is divided into 2 categories. Biological loops are more focused on an ecological and biological perspective, and technical cycles are more addressed by economic and industrial angles (Bocken et al., 2016a; Linder & Williander, 2017). Consumption only takes place during biological cycles, after which biologically derived resources are intended to be returned through, e.g., anaerobic digestion or composting. Technical cycles employ techniques including reuse, repair, remanufacture, to recover and restore goods, along with recycling materials (Bocken et al., 2016b; EMF, 2017a; Esposito et al., 2018; Lozano, 2013).

According to Lieder & Rashid, 2016, an expanding number of challenges, including wastage, resource scarcity, and the intention of sustaining economic advantages, are being addressed through CE. Consequently, businesses must embrace new business strategies and models that contribute to CE.



1. Figure - Circular economy system diagram by EMF (2017a, p.49)

2.3.2 Circular economy principles

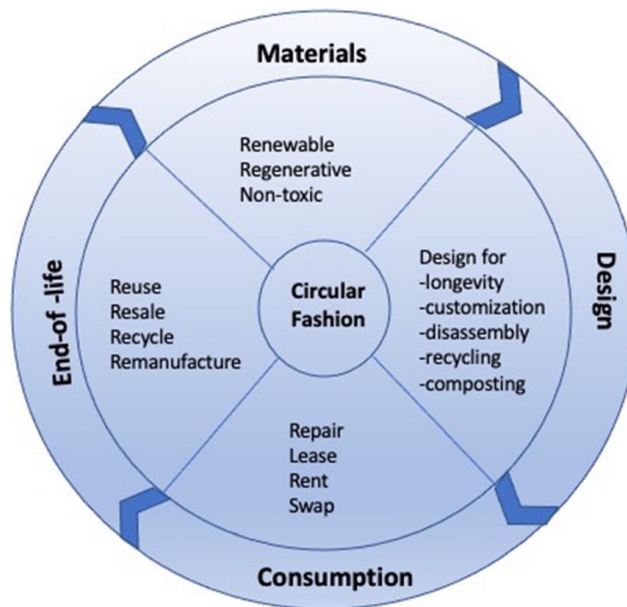
There are several guiding concepts for the CE model, Prieto-Sandoval et al. (2018) identified two distinct groups. The first group includes the 3R principles: “reduce, reuse and recycle” (Prieto-Sandoval et al., 2018, p. 610), which are the most prevalent and commonly discussed in academia (Ghisellini et al., 2016; Haas et al., 2015). They can be applied to all stages of the manufacturing, utilization, and return of resources (Yuan et al., 2006).

The second group encompasses the application of sustainable design strategies as stressed, for instance by the EMF (2013). EMF (2017a) distinguishes three key principles. The first principle is *design out waste and pollution*, suggesting that the detrimental effects of economic activity that harm both human health and ecological systems are revealed and managed for by a CE (EMF, 2017a). The second principle refers to *keep products and materials in use*, by encouraging energy, labor, and material-saving initiatives. This entails designing goods, elements, and materials for longevity, reuse, remanufacturing, and recycling (EMF, 2013, 2017a). Finally, the third principle encompasses *regenerate natural systems* that supports natural processes, minimizes the use of finite resources, and promotes the shift to sustainable resources (EMF, 2015, 2017a).

2.3.3 Circular fashion

CE presents potential solutions to reduce sustainability challenges along the life cycle of the fashion supply chain (Dissanayake & Weerasinghe, 2022), it can be seen as opportunity for product differentiation (Deloitte, 2019). The fundamentals of CE in fashion imply incorporating all stakeholders of the value chain and it necessitates strong collaborations among them (Dissanayake & Weerasinghe, 2022; Niinimäki, 2017).

The existing literature on CF is quite limited (Ki et al., 2021). Numerous scholars who have written about CF embraced the general definition of CE (Dissanayake & Weerasinghe, 2022). According to Niinimäki (2017), the objective of CE in fashion is to establish closed-loop systems, lengthen the functional lives of clothing, and preserve the value of products and resources for as long as possible which implies all components will be recycled repeatedly. Baker-Brown (2019) argues that one of the most important aspects of sustainable development is the prolongation of clothing's useful life. Dissanayake and Weerasinghe (2022, p. 5) define CF as “a fashion system that moves towards a regenerative model with an improved use of sustainable and renewable resources, reduction of non-renewable inputs, pollution and waste generation, while facilitating long product life and material circulation via sustainable fashion design strategies and effective reverse logistics processes.” Figure 2 exemplifies this.



2. Figure - Circular fashion systems by Dissanayake and Weerasinghe (2022, p. 6)

Actors within the fashion business mostly focus on closing the loop through technical cycles rather than through biological (Niinimäki, 2017). Since biological cycles focus mostly on

composting and most fibers are unsuitable for it, moreover, textiles contain dangerous compounds that should not be discharged into the soil (Niinimäki, 2013b).

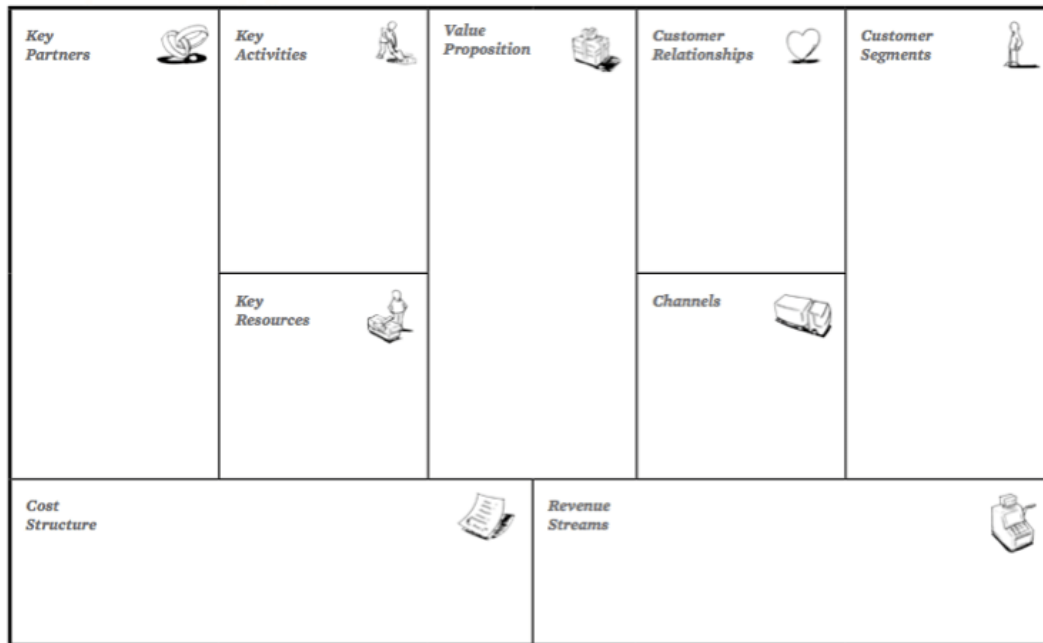
A sustainable business strategy for the fashion sector begins with the design phase, which is dependent on the advance of technology and cooperation. Additionally, it involves holistic rethinking of production models (Ræbild & Bang, 2017). CE supports local and regional activities such as local waste disposal and production methods (Niinimäki, 2017). Moreover, certifications and audits are crucial to supply chain management (Dragomir & Dumitru, 2022). Furthermore, traceability and transparency are fundamental characteristics of circular models. Detailed labeling such as digital product IDs and online disclosures about the origin and content of the materials can increase products' transparency for both customer and other supply chain partners that can enhance recycling initiatives (Dragomir & Dumitru, 2022; Sandvik & Stubbs, 2019) which otherwise would be hard to track due to fragmented manufacturing processes and complicated supply chains (Niinimäki, 2015).

In response to the theory of CE, the fashion industry has begun to focus on new BMs (Mishra et al., 2021). The subject of BMs and CBMs will be introduced and discussed in the upcoming subsections.

2.3.4 Exploring the business model concept

The phrase 'business model' was first raised in an academic article in the 1950s (Bellman et al., 1957). While the term BM is broadly used in practice, the scholarly literature on this subject is fragmented and inconsistent by varying definitions and construct limits (George & Bock, 2011). For example, Chesbrough and Rosenbloom (2002, p. 529) defined it as a "heuristic logic that connects technical potential with the realization of economic value." According to Casadesus-Masanell and Ricart (2010, p. 195) a "business model is [...] a reflection of the firm's realized strategy." Teece (2010) defines BM as an explanation of how a company creates economic value using its resources and competencies. Osterwalder and Pigneur (2010a, p. 14) state that BMs are principles of "how an organization creates, delivers and captures value." Building on nine primary components, so called "basic building blocks." They encompass customer segments, value proposition, channels, customer relationship, revenue streams, key resources, key activities, key partnerships, and cost structure (Osterwalder & Pigneur, 2010b, p. 16). It is illustrated by Figure 3.

The Business Model Canvas



3. Figure - The business model canvas by Osterwalder and Pigneur (2010a, p. 44)

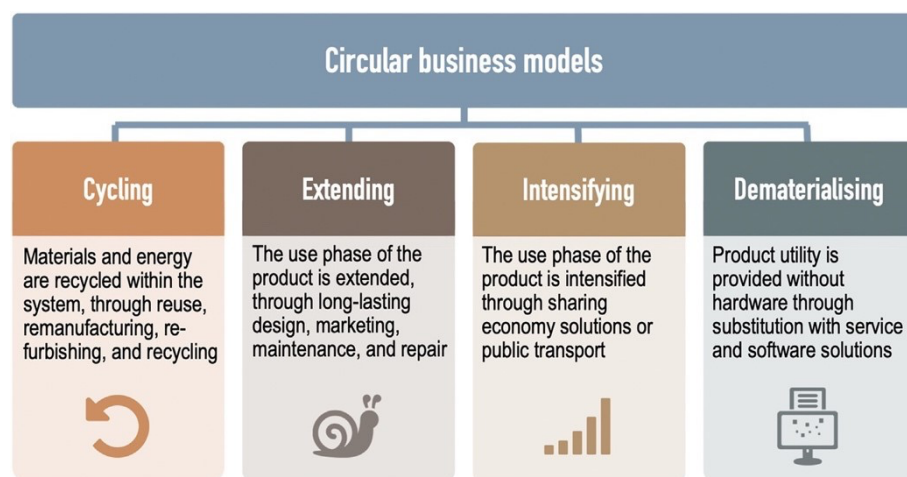
Moreover, four primary aspects of an organization are covered by the nine blocks, “customers, offer, infrastructure, and financial viability” (Osterwalder & Pigneur, 2010c, p. 15). The BMC has attracted widespread adoption among professionals because of its unchallenging applicability. It is a transparent way to illustrate a company's structure and operations. It provides a systematic framework for defining, analyzing, and developing BMs. The nine components assist in describing a company in-depth and briefly (Osterwalder & Pigneur, 2010b). As the two authors state long business plans can raise the chance of failure (Osterwalder & Pigneur, 2010b). The following section discusses the potential BM strategies for circular systems.

2.3.5 Circular business models

The transition from a linear towards a circular system suggests essential adjustments and changes of a company’s BM or the establishment of new BMs (Ferasso et al., 2020; Lüdeke-Freund et al., 2019), as it implies a drastic way of transformation, which will necessitate new approaches of running a business (Bhamra & Lofthouse, 2016). Companies should adapt their BMs around new activities to create a sustainable growth that preserves resources (Centobelli et al., 2020).

The primary goal of CBMs is to support companies in value creation by making use of input

materials repeatedly to reduce consumption and minimize, in the best case eliminate, waste (Ayres & Ayres, 1996). The research on CBMs is relatively new and authors define the notion differently (Linder & Williander, 2017). According to Geissdoerfer et al. (2018) CBMs are a subset of SBMs with improved attributes, concentrating primarily on environmental and economic effects. They provide an alternative to conventional BMs (Geissdoerfer et al., 2018) by utilizing BM tactics that either slow, narrow, close, intensify or dematerialize material and energy loops (Bocken et al., 2016a; Geissdoerfer et al., 2018; Stahel, 2016). These include efforts to recycle (closing), boost efficiency (narrow), lengthen use phase (slowing), increase use phase intensity (intensifying) and replace physical goods with their digital counterparts (dematerializing) (Geissdoerfer et al., 2018). Figure 4 presents it. Mishra et al. (2021) propose that to include CE concepts such as reduce, repair, reuse, and recycle into existing BMs, it is necessary to reframe existing value propositions and modify key BM parts.



4. Figure - Circular business model strategies by Geissdoerfer et al. (2020, p. 7)

The concept of CBMs, their matching design alternatives and the methods through which organizations transform from linear to circular system are continuously discussed in academia (Franzò et al., 2021). Previous studies have shown that the adaptation of the circular practices at the company level requires further investigation, since the absence of guidelines for the transition (Ghisellini et al., 2016; Salmi & Kaipia, 2022). Moreover, the fashion industry has a lower level of understanding of the principles and practices of CE (Dissanayake & Weerasinghe, 2022). The existing literature on circular fashion is quite limited, that hinders the application of CE principles in the fashion business (Ki et al., 2021).

Consequently, we still do not fully comprehend the actions that fashion companies may take to incorporate circular processes into their business structures. I suggest addressing the following research question to help close this gap:

“How do fashion companies implement circular principles in their business models?”

2.3.6 Challenges associated with the transition to circular business models

Adopting circular strategies and transitioning to CBMs can carry significant obstacles and uncertainties for many businesses (Schaltegger et al., 2016), resulting from the complexity of the process (Wang et al., 2008). As it requires systematic change throughout the value chain such as forming new collaborations, developing innovative products, using closed-loop methods to transform waste into resources, implementing new BMs and redesigning of existing ones (Bocken et al., 2016a; Lacy, 2015; Linder & Williander, 2017; Schaltegger et al., 2016). Besides, it also demands to adopt a new mentality and new operation best practices (European Commission, 2011). According to Lacy (2015), the transition to CE requires “an organizational and cultural shift”.

Guldmann and Huulgaard (2020) distinguish 4 levels of barriers, namely the organizational, the value chain, the market and institutional, along with the employee level. The organizational level includes among others the lack of internal resources, expertise, or competences, concerns about cannibalization and the current sustainability initiatives' limited scope. The value chain level refers for instance to time concerns about new partners and their trustworthiness, unease regarding the quality of returned items, and the complexity of value chains. The market and institutional encompass particularly market demand uncertainty and regulatory restrictions. The employee level deals with lack of understanding of CBMs and dominance of linear business model structures (Guldmann & Huulgaard, 2020).

Overall, it is evident that transitioning to a CE is a disarray endeavor, since the gap between the current and ideal states of the system is vast (Wang et al., 2008).

3 Chapter 2 - Methodology

In this chapter I explain the methodology used for this study. First, it describes the research design, the sampling strategy, then the data collection process and finally the data analysis approach.

3.1 Research design

To answer the research question, I decided to employ a qualitative approach since this study examines an under investigated topic and aims to analyze and provide an in-depth understanding of a complex organizational phenomenon (Birkinshaw et al., 2011). Qualitative research provides extensive descriptions of actual events in real-life circumstances, it can explain management's social processes and illuminate key managerial challenges and concepts (Rynes & Gephart, 2004). It allows understanding complex process issues as well as discovering new insights since it enables the researcher to uncover generally applicable patterns (Graebner et al., 2012) which is essential to address the research question “How do fashion companies implement circular principles in their business models?”

Specifically, I decided to conduct a comparative case study for several reasons (Eisenhardt, 1989). First, a larger range of theoretical development and research topics can be discovered through the use of multiple case studies (Eisenhardt & Graebner, 2007). Second, comparative case studies produce high quality evidence than unique case studies (Baxter & Jack, 2008). Finally, this method is suitable for determining similarities, differences, and general patterns across all three cases leading to a more robust and comprehensive understanding of the phenomenon (Baxter & Jack, 2008).

In terms of the selection strategy, I initially identified fashion companies via secondary research by employing purposeful sampling (Patton, 1990). I primarily reviewed online articles and interviews. To pinpoint the potential cases the initial criteria was that they already made attempts towards CE by starting to implement circular principles, best practices. Besides, having a diverse product portfolio, not only focusing on one product. I contacted the identified companies through emails, phone calls or personal visit. However, a substantial proportion of them did not reply at all or because lack of capacity, due to time constraints, could not answer my interview questions. So eventually I could successfully reach out to three companies, Nāz, Théla and Company N. Company N made me sign a non-disclosure agreement therefore, I am not allowed to disclose its real name in this study.

3.2 Data collection

I collected both primary and secondary data, such as in-depth and semi-structured interviews (Patton, 1990), as well as archival data, like online articles, internal documents, online interviews, podcasts, and blog posts. First, I collected publicly available data of the three selected companies to get an initial overview of the industry and the companies' sustainable strategies. Then I gathered primary data. Overall, I conducted 7 interviews via zoom with managers or founders of the selected companies. It can be seen in Table 1. Although I was not able to talk to the companies' CEOs in all three cases, it would have been unbelievably valuable. Moreover, intending to collect data from multiple stakeholders, I also tried to reach out to suppliers, however, unsuccessfully. The first interviews focused on the founding story, history of the companies, their core values, vision, culture, offerings, and sustainable principles. Besides, getting an overall overview of current sustainability strategies, purpose, and their approach to circularity. In the second and third interviews, the objective was to get a deeper understanding of the strategies, initiatives and goals associated with circularity. Additionally, to get insights about operational best practices, changes, and challenges. Finally, I conducted a deeper secondary data research by doing a systematic search in online newspapers, focusing on information not older than five years old. Secondary data was gathered from online magazines, social media platforms, and the companies' websites. The criteria for the selection of secondary sources were their relevance, connection to circularity, and credibility. Moreover, to gain more validity a data triangulation method was applied, which demands the gathering of data from multiple sources (Carter et al., 2014). Appendix 1 shows the secondary data collection and Appendix 2 list all secondary data sources.

Interviews conducted						
Case	Type of data	Name	Organization	Position	Date	Length
Näz	interview	Cristiana Costa	Näz	founder, designer	21.10.2022.	1 h
Näz	interview	Cristiana Costa	Näz	founder, designer	11.11.2022	1 h
Company N	interview	Anonymous	Company N	sustainability manager	24.10.2022	1 h
Company N	interview	Anonymous	Company N	sustainability manager	08.11.2022	30 min.
Théla	interview	Diti Kotecha	Théla	founder, designer	02.11.2022	1 h
Théla	interview	Diti Kotecha	Théla	founder, designer	09.11.2022	30 min.
Théla	interview	Diti Kotecha	Théla	founder, designer	22.11.2022.	20 min.

1. Table - Collection of primary data

3.3 Data analysis

I analyzed the data by applying a coding method. This process required the selection, categorization, and labeling of the data. It refers to the procedure of classifying the data into subcategories and systematically connecting them to a broad category, subsequently confirming linkages between them (Carter et al., 2014).

The first codes arose from the research question, the literature review, and the theoretical framework. Aiming to code the interviews more precisely first, I transcribed all of them. After that I started reviewing and coding the interview transcripts, resulting in the emergence of additional codes, and eventually I coded all the secondary data as well. Then, I compared all the codes from all three cases and checked the proportion of their appearance to be able to determine their relevance for the analyzes. Moreover, I divided the codes into categories, and then I classified the themes based on those categories. Appendices 3 and 4 contain the coding table including illustrative quotations for each of the codes and the coding tree along with the codes, categories, and themes. As an example, *social sustainability* is a code based on the literature review. As Cristiana Costa, the founder of Nüz stated “We do our best on the social side. We search for companies that have a social impact on the area where they are located, to bring positive value for the region.” This statement was linked to the previously mentioned code, *social sustainability*. Another example is *extending the life of garments* that was developed during the coding process. As the sustainability manager of Company N expressed “Our goal is to make sure that we provide the possibility to our customers to somehow re-upcycle a product. So that it can stay in the wardrobe for longer.” This comment was connected to the code, *extending the life of garments*. Additionally, for the purpose of the analyzes I built on the BMC of Osterwalder & Pigneur, (2010b) as a framework.

4 Chapter 3 - Empirical Setting

The following chapter provides a description of the three companies selected for the multiple case study. First, it introduces Náz, a Portuguese fashion brand following circular principles, second, Company N, a Hungarian luxury fashion company with sustainable principles and finally, Théla, a Greek circular lifestyle brand.

4.1 Náz

Náz is a Portuguese sustainable fashion label established in 2016 by Cristiana Costa. It has been inspired by CE principles, utilizing deadstock material from the beginning. The company was founded whilst Cristiana, its designer and founder, was still pursuing her master's degree. Back then she began to investigate and examine the textile business in Portugal's interior. She realized that although, many European and foreign companies produced in Portugal at the time, Portuguese sustainable fashion was missing. Despite the huge negative environmental and social impacts associated with the textile and fashion industry, she adored fashion and desired a job in the field, but she did not want to support such a filthy sector. Therefore, she made the decision to develop a Portuguese ethical fashion label, made fairly in Portugal and to adhere to sustainability principles.

As Cristiana states “We are not a fashion brand, fashion in the sense of trendy items, we make clothing, sustainable clothing“ (interview of the founder, Náz). Náz creates high-quality, recycled garments by collaborating with small-scale Portuguese companies by utilizing recycled, organic, and leftover fabrics to prevent more textile waste.

In the first years Cristiana was the one doing all the garments alone. Today three women lead the company, it is headquartered in Covilhã but most of the office work is conducted in Lisbon. Náz products are sold in more than twenty-five countries. Náz's product portfolio consists of womenswear and accessories, the prices range from 40-250 EUR. All Náz goods fall into one of three categories, each of which describes the materials employed. There is the recycled, the surplus and the ecological line.

Náz collaborates solely with local partners, 100% of its garments are produced in Portugal from weaving to sewing. Its supply chain consists of eight main and three trimming partners. In 2020, the company sold more than 2300 garments. In 2021, the company earned a B Corporation Certification, having a score of 86.5.

As Cristiana states “It started already being kind of circular without knowing it, but our concerns were a lot more connected with the social impact in the past” (interview of the founder, Náz). She did not entirely understand what circular fashion was back then, however, she used 100% leftover fabric from the start. Nowadays, she perceives circularity in a way that she only wants to use resources that already exist and sees residuals as new materials instead of trash.

4.2 Company N

Company N is a Hungarian, Budapest-based luxury fashion brand founded in 2006. It sets high emphasis on craftsmanship, detail, and responsible production. By producing high-quality, timeless designs and making ongoing efforts to address environmental problems, its central aspect has always been running the business with sustainability and responsibility in mind. Now it is a core stone of the company, being famous for its vegan leather. Budapest remains to be the brand's physical and artistic hub since the founder and creative director is influenced and inspired by the cultural history of the city. The founder and creative director believes that “if a garment is designed to function well, it will be beautiful by definition” (interview of the founder, www.libertylondon.com).

Long operating under the radar, it has only recently come to widespread attention. It mostly catered to its local market for the first seven years. It began offering its products to foreign stockist in 2012, but until very recently, it remained unnoticed. The creative director's partner in life joined the company as CEO at the end of 2016, bringing a family business mentality to the brand. Together they decided to develop the company into a legitimate fashion house, they chose to pursue a more aggressive growth strategy with a larger global presence and a complete rebranding. After that, the company made the decision to participate in NYFW, debuting its first collection in February 2018. In the same year it decided to join the Make Fashion Circular working group created by the EMF. The launch of the New York Store in 2019 marked the pinnacle of the company's expansion and growing global presence. Following the company's explosive expansion over the previous four years, Company N was made the subsidiary of the recently founded Vanguards Group in 2020.

It has evolved from a family-run business into an increasingly global one. In terms of employment, according to the latest sustainability report the label has 158 coworkers. Today, Budapest serves as the location of the Company's headquarters, atelier, flagship store, and warehouse. With additional stores in New York, London, Shanghai, by the end of the year they will open one more in China. Next year additional stores will be opened in another North

American and in another European fashion capital. Along with delivery to more than one hundred destinations globally, its collections can be found in more than forty countries.

In the early years it started as womenswear, in 2019 the first man's collection was introduced. Nowadays the product portfolio consists of womenswear, menswear, shoes, bags, and accessories. The average cost of an item is 500 EUR. Since May 2018, the business has been operating profitably. Despite the COVID-19-related economic crisis, Company N continued to expand. In 2021, it closed the year with sales revenue of EUR 30 M. The company's sales revenue in 2022 is expected to exceed EUR 50 M.

The sustainability strategy of Company N is based on circularity as the founder and creative director states "For us, sustainability and circularity mean being part of an ecosystem - and maintaining its balance" (interview of the founder, Company N).

4.3 Théla

Théla is essentially a Greek lifestyle brand operating under circular principles, which provides local, creative, innovative solutions to the world's plastic waste problem. It was founded in 2019 by Diti Kotecha. The brand provides solutions in two areas. First, designing and manufacturing handcrafted products with discarded plastic waste to show the value and versatility of the material. Second, providing education to schools, businesses, charities, and social groups to raise awareness about plastic overconsumption and eventually change their habits.

Diti's journey towards sustainability started with her exposure to plastic. While growing up in Mumbai she was not familiar with single-use, disposable items such as toilet paper, kitchen rolls etc. She grew up without plastic, or at least significantly less plastic. Later, though, she saw how India's consumerism and plastic use were expanding, and she started studying about the negative effects of plastic on the environment. When she moved to Athens, she discovered that there was a significantly higher level of plastic usage than she was accustomed to. That increased her awareness and motivated her to take some action.

First, she started cutting and crocheting with thrown away, used plastic bags. It was a combination of her understanding of design, her passion of handmade products and her desire to live as sustainable as possible. As she states, "I did not think then that it would grow into a sustainable plastic upcycling business" (interview of the founder, Théla). Currently, they are working with sustainable and like-minded Indian organizations and have diversified into other craft skills. Today there are two employees within the company, Diti and her husband, who is

the co-founder. Their model is to collaborate with existing organization, craft and tailoring units and work with them on project basis.

Their customer base is from twenty-five countries. The product portfolio includes bags and pouches, home and other accessories and jewelry. Except for the jewelry, all the other products are gender neutral. The average cost of an item is EUR 80. In 2019, when the company was founded, the revenue was EUR 5,000 by selling 120 items. It has evolved to EUR 10,000, last year 200 items were sold at a higher value compared to the first year. The revenue forecast was EUR 30,000 with a stable growth rate, however because of the COVID-19 disruption, logistical problems, and the loss of retail partners, the company did not reach this target.

Théla did not start as a circular fashion brand, in the first years, Diti was mostly making products for herself by handcrafting with plastic waste. As she states, “it is like a work in progress, we are not a fully circular company yet, but we are moving closer to the goal” (interview of the founder, Théla).

5 Chapter 4 - Findings

We lack an in-depth understanding of the potential measures taken by fashion businesses to integrate circular processes into their organizational frameworks. Considering this, in this section I present key points of answers on the ensuing research question “How do fashion companies implement circular principles in their business models?” For analyzing the data, I built on the BMC of Osterwalder & Pigneur (2010b) as a framework. This chapter is divided into six parts: the directly affected BM building blocks, value proposition, key partners, key activities, and key resources. Moreover, it involves the remaining components of the BMC. Finally, it shows a summary of the findings.

5.1 Value Proposition

According to Osterwalder & Pigneur (2010b, p. 22), the value proposition “describes the bundle of products and services that create value for a specific customer segment.” The analysis shows that the implementation of circular practices in BMs is feasible by rethinking the company's offerings, both products and services by incorporating ideas and concepts, that aim at circularity. For instance, developing reverse cycled services like repairing, reselling, or renting to prolong the life of items in circulation. Moreover, regenerating natural systems by circulating materials. Besides, promoting both social and environmental sustainability.

When Náz was established, its value proposition focused mainly on producing very small quantities of unique, handmade garments from only leftover fabric. Since then, it has evolved into a more sustainable company, delivering high-quality garments that are only made locally and fairly in Portugal, with a strong emphasis on social sustainability, natural resources, a transparent price point, and ever-increasing traceability.

“We are a Portuguese brand that's eager to deliver fashion made fairly in Portugal with respect to the people who make it but also to our natural resources.”

– From Náz's website

Company N offers beautifully crafted products with an authentic and consistent consideration for responsible production in the luxury segment. It strives to not just lessen their negative effects on the environment, but also to benefit the communities in which they operate. Recently, it started to add circular principles to its offerings, such as reducing resource consumption and

extending the life cycle of garments through different activities like repairing, renting, reselling, or recycling.

” Since 2020 we have been active in improving our circular practices through our material choices, while supporting the development of new business models, processes and services which can extend the life cycle of our garments.”

– From Company N’s sustainability report, November 2020

The founder of Théla started handcrafting with plastic waste as a hobby, today it evolved into producing high-quality, ethical, locally made fashion accessories out of plastic waste by applying traditional craft skills and sold at a fair price. Recent additions to their offerings include education and consulting services for schools, small businesses, charities, and social groups, which serve as a strong differentiator.

“We offer premium, ethical fashion accessories handcrafted from plastic waste in order to address the problem of fast fashion and to create a more conscious society around ethical consumerism. Moreover, we provide education and consulting services raising awareness by education to schools, businesses, charities and social groups target audience to address the global plastic waste crisis and enable people to create a positive environmental impact.”

– Diti Kotecha, the founder of Théla

5.2 Key Partners

Osterwalder and Pigneur (2010c, p. 38) define the key partnership element, as a “network of suppliers and partners that make the business model work.” The results show that fashion brands can form partnerships with different stakeholders, such as factories, material suppliers, NGOs, research institutes, craft units, tailoring units, logistic providers, etc. In all three cases, the interviews proved that finding and working with the right, like-minded partners is essential to the process of applying circular practices. Since it can support a more transparent supply chain, contribute to knowledge sharing, increase traceability, and boost social and environmental sustainability.

As Cristiana, the founder of Náz, states, she was the one doing everything alone in the first years. To improve Náz’s value proposition, the company has started to form partnerships with trustworthy, local suppliers. It began to grow alongside incredible partners that thought it was feasible to change the industry by adding a new perspective. Currently, they have 8 main partners and 3 trimming partners, mostly small-scale family-owned businesses, including

material suppliers and factories, all of which are located in Portugal. The label works with all its suppliers directly, there is no intermediary involved, which is important for increasing transparency and traceability.

“More than being suppliers they are partners that grow at our side - it’s a long-term relationship of sharing knowledge. They bring a huge traditional know-how while we try to bring to the table innovation and design - developing new products without the need of huge investments. We also share knowledge of eco-friendly and socially fair practices, connect them with other partners.”

– From Náz’s sustainability report, November 2020

Moreover, they do their best on the social side as well. Náz collaborated with Just the Change, an NGO that renovates houses for people living in extreme poverty. They were successful in raising funds for a new roof last year. Concerning certifications, for Náz its necessity depends on the sort of partnership. For example, it is indispensable for large suppliers. However, they believe that for small partners, it does not make any difference.

“The majority of our production partners are small companies that are not certified due to its high costs. We would never change partners just because of a logo in our tags. So, we choose transparency.”

– From Náz’s website

Théla has similar characteristics in terms of key partners. When Diti, the founder of Théla, made the decision to produce goods in larger quantities she started to collaborate with an Indian fair-trade tailoring community. She has been collaborating with artisan communities in India, supporting 100% local production. Moreover, with existing craft and tailoring units that paid special attention to social sustainability. In Greece she identified refugee communities that are learning weaving through NGOs, and she is planning to start working with them. She supports partners from disadvantaged communities. Furthermore, she works closely with educational institutions, charities, and small business corporations by organizing workshops, and providing trainings to create awareness. In terms of certification, she is working with smaller partners who are seeking good quality but do not have any certifications. She believes that it does not change anything.

“I choose my partners for their social angles. Because they were helping these communities by giving them employment and a livelihood. So, while I am very conscious of the

environmental aspect and take care of it, the organizations I work with manage the social aspect, which is very important.”

– Diti Kotecha, the founder of Thêla

Both companies are working mostly with small, family-run enterprises or communities, supporting 100% local production. Their key partners primarily involve material suppliers, manufacturers, and production facilities.

In contrast, Company N does not rely solely on local partners, but also builds on close, global partnerships. However, Company N is also committed to support local economy, 41% of its cost of goods sold (COGS) is incurred from domestic sources. Moreover, to support transparency and traceability Company N evaluated four tiers of its supply chain and started to map them, including tier1 (assembly) tier2 (material processing), tier3 (raw material processing) and tier4 (raw material production).

“Full transparency and traceability are the two key goals that we have set at Company N. From the very beginning of our journey, it has been important for us to source and produce locally, remain close to our supply chain partners, support our local economy, and stay connected to our roots. That is why we are very proud to have more than 70% of our products being manufactured in Hungary and Serbia. And as Company N is expanding, so is our effort to get closer to all our global partners.”

– From Company N's sustainability report, November 2022

Company N also underlines the importance of collaborating with social initiatives. Its social efforts and philanthropic contributions have benefited local communities through donations and charity, for instance clothing, books, and toys offered to a Hungarian kindergarten after raising HUF 220,000. Or it kept creating employment through its social project in Terény, Hungary, where labor is limited. Furthermore, with the aim of promoting CBMs, it also started to build on new, long-term, international partnerships. Through its collaboration with HURR, Company N have made its goods accessible for rental in the United Kingdom. Additionally, it has made male pieces available for rental through Seasons in New York, joining the previously rentable womenswear items that are offered through Rent the Runway. Moreover, to extend the useful life of products, it began to collaborate with The RealReal to facilitate the sale of second-hand consignments. In addition, its digital IDs were introduced in collaboration with EON a product cloud platform. It is also partnering with RePack to provide clients with circular packaging options for online purchases. Finally, since the beginning of 2022 it started to work together with Scrap NY to donate and recycle some of its defective products.

5.3 Key Activities

According to Osterwalder and Pigneur (2010c, p. 36) key activities “are the most important actions a company must take to operate successfully.” They can range from material sourcing through production, packing, distribution to marketing, etc.

The findings indicate that in all three cases the companies placed high emphasis on implementing and developing certain activities and initiatives to address circular principles. These new actions are directly supporting CBMs. Besides, it is important to mention that the number of successfully implemented or currently developing practices vary greatly among cases. Moreover, they cover various activities from circular design and packaging practices through responsible production, reverse cycle services and material development to donation of leftover fabric.

First, all three companies point out circular design practices by designing for high-quality, durability, versatility, disassembly, and recyclability with reduced impact on the environment. Moreover, by utilizing upcycled, repurposed, and renewable resources, they focus on designing out waste and pollution. Besides, Théla has a zero-waste design approach.

” At Náz we perceive design as a whole, approaching its responsibility on each one of the products created. We design clothes to be worn multiple times and during an extended period of time, thus we are designing products that have a reduced impact on the environment when compared to fast fashion. And even though post- consumer textile recycling is still very reduced we do design with that in mind, hoping that the possibility is increasing in the near future.”

– From Náz’s impact report, November 2020

“Circular production starts at the design.”

– From Lampoon Magazine, the founder and creative director of Company N

“Our designs are zero-waste – the plastic woven fabrics are custom-made to avoid cutting during the tailoring. Any waste generated is also donated to recycling initiatives.”

– Diti Kotecha, the founder of Théla

Second, local, and responsible production is key for all three companies. Náz’s manufacturing is mostly based in the center of Portugal, which accounted for 42% of all its production expenditures in 2019. In this area, the company collaborates closely with organizations that are vital to the communities they serve. In case of Théla, everything is done locally in India from the collection of plastic waste through washing and drying, cutting, and balling the discarded plastic to handcrafting and tailoring it.

For Company N local sourcing and manufacturing is key priority by manufacturing around more than half of its products in Hungary.

Third, all three cases are following circular packaging principles, either through partnerships or by utilizing only circular or sustainable materials. As an example, Th  la works with recycled cardboard boxes; they wrap the products in newspaper and use paper tape with water glue. In N  z's warehouse, nothing is packed, which implies fewer poly bags. The company only puts poly bags and recycled plastic mailers on orders that go to retailers, and consumers never get them. The end consumers receive their orders in craft cards with paper tape. Company N also switched to alternatives that are either recycled and recyclable, compostable or reusable. It also has a commitment to Canopy, an NGO, which entails the preservation of the world's forests through ethical sourcing, and the goal is to have all its paper packaging FSC-certified by the end of 2022.

Forth, additional services have been introduced to support higher utilization of garments. Company N is already active on the repair side, by providing an in-store repair service for all their products after the first six-month warranty term. Besides, it operates rental and resale opportunities with the support of various partnerships, as listed in the previous section. The resale option is based on the idea that every customer can bring to the partner's store an old piece of clothing, and they will receive a voucher that can be used in store or online. Both N  z and Th  la are currently developing their return system to be able to give garments a second life. Moreover, N  z is currently working on a repair system as well.

“It is like a work in progress, within the next six months, we are going to have a system where the customers can return products back to us. So, we can dis-assemble and recycle it.”
– Diti Kotecha, the founder of Th  la

“We are planning to implement a repair and return system. We are still developing them. We intend to implement them within the next two years at the most.”
– Cristiana Costa, the founder of N  z

Fifth, two out of three companies are developing their own material. Company N is constantly working on a better version of its vegan leather, transitioning, whenever feasible, to recycled polyester and other recyclable materials since the company is extremely committed to making its vegan leather as sustainable as possible. It is made without the use of any products deriving from animals. Cristiana, the founder of N  z, discovered recycled yarn along the way; after the company's second year, she began to develop her own fabric with a reliable, local partner.

“Before 2022 we launched our new alternative leather as Company N became popular for using vegan leather. That was an area that we needed to further explore and innovate, it took like almost 2 years to develop this new material, because we did not want to compromise on the quality.”

– Sustainability manager of Company N

“Alongside small textile factories near Covilhã with deep knowledge in the art of making fabrics, we started developing fabrics and knits of recycled yarn.”

– Cristiana Costa, the founder of Náz

Sixth, all three companies either donate or utilize their leftover fabric. Company N created a deadstock fabric library, an inventory of deadstock to support the upcycling of surplus materials. Its design team uses them for both sampling and new collections. In addition, for any leftover material that the company was unable to utilize in its collections, it organized a local fabric auction. All unsold textiles were donated to theaters and design faculties of Hungarian universities. Náz has a separate line for only deadstock material, called surpluses line. These textiles came from factories that misjudged their demands or required to make more due to order minimums or equipment Théla collects all the fabric waste occurring during the weaving of the fabric and looks for organizations, recycling initiatives to donate it.

“Any plastic scraps generated during the making of the woven fabric is donated to recycling initiatives.”

– From Théla’s website

Besides, two of the selected companies, Náz and Company N, address traceability and transparency by introducing or planning to introduce a product passport. Digital certificates keep track of the history of each item and offer users access to unique information, content, and services. Scanning a garment's label reveals its origin, material composition, and care recommendations.

“We’ve teamed up with Eon to place digital passport QR codes within our garments. By scanning the code on a garment’s label, you can learn about its journey, material composition and care instruction.”

– From Company N’s Website

Moreover, to increase traceability and transparency having a sourcing policy is a key aspect. Náz is only sourcing natural and recycled materials with the least impact. The core of Company N's strategy remains responsible material sourcing improvement. The company is committed to improving its procurement procedures in order to use fewer resources and to explore alternative agricultural methods such as regenerative farming.

Furthermore, there is evidence that two out of three companies have codified their most fundamental social, environmental, and ethical principles in a commitment or have joined different initiatives, working groups. Náz has been a certified B Corporation since 2019. It is the first fashion label in Portugal earning a B Corporation Certification. Moreover, the company is committed to enhancing its traceability and circularity by 2025. Company N joined the Make Fashion Circular working group created by the EMF in 2018. In 2020, it joined the UN Fashion Charter and the same year in February it signed its commitment to Canopy. Moreover, it is planning to achieve full traceability by 2025.

“We plan to achieve full traceability by 2025, meaning that all materials and components will be mapped.”
– From Company N’s sustainability report, November 2022

Additionally, constant monitoring and controlling facilitates the successful implementation of circular practices and helps identifying non-compliances. Náz can ensure fair and safe working conditions, traceable materials and high-quality through visiting all partners more times a year. Besides, the company also films the factories it works with. Company N also puts a lot of effort in monitoring and controlling its supply chain. It sends out and evaluates yearly supplier questionnaires. The company also expanded data collection to tier1 and two suppliers, which help them to map tier1 and tier2 sub-suppliers and obtain understanding about manufacturing techniques and procedures. Besides, tier1 and tier2 partners are visited annually. In the case of Théla it is mostly about trust. Diti, the founder of Théla works with her partners very closely. She visits them every year and she is always there during the production.

“We are quite a controlling company, when it comes to that, we do as much as possible, we are the ones managing all our supply chain.”
– Crisitana Costa, the founder of Náz

“I would say it is trust. I go there every year. We are like a family, we respect each other, if something is wrong, they will tell me. They understand my environmental sustainability standards and I understand their social standards as well.”
– Diti Kotecha, the founder of Théla

Finally, assessing potential partners is essential for both Náz and Company N. Before starting to work with a new partner like a factory Náz goes there at least two times and checks them in person. Besides, all the new suppliers need to fill out a survey, which helps to evaluate them. Náz has its own supplier code of conduct that all new partners need to sign before starting

working with them.

The situation is similar in the case of Company N, it tends to have long-term relationships with its manufacturers. Usually, when the brand has new suppliers, it shares a questionnaire with them that they need to complete, which makes the evaluation process easier. All the suppliers need to sign the newly developed supplier ethical code of conduct. To make sure that production takes place in an ethical way, supplier contracts and unofficial visits to suppliers must reflect the company's code of conduct.

“The company’s Code of Conduct implements the most relevant international standards, with particular reference to the ETI² Base Code and International Labor Organization³ guidelines, and it outlines our requirements and expectations in regard to safety in the workplace, respect for workers’ rights and environmental protection. Any individual or company that establishes a business relationship with Company N must comply with our Code of Conduct.”
– From Company N’s sustainability report, November 2022

5.4 Key Resources

Osterwalder & Pigneur (2010c, p. 32) define key resources as “the most important assets required to make a business model work.” Key resources can be tangible or intangible. They can be categorized into physical, financial, intellectual, and human skillsets.

I found evidence, in all three cases, that the usage of circular and sustainable materials is essential to integrating circular principles. In all three cases I identified three types of materials utilized namely, leftover fabric, recycled and natural materials.

From the beginning, Nāz utilized 100% deadstock materials. After the third year of the brand intended to communicate things more clearly to its customers, they established three different collection lines. All Nāz goods fall into one of three categories, each of which describes the materials employed. The recycled line is created in collaboration with small textile businesses that have a deep expertise of developing fabrics. Together with them, Nāz began creating knits and textiles from recycled yarn. The surplus line features clothing manufactured from deadstock materials. The ecological line includes items produced entirely from natural fibers such as organic cotton or linen.

“Since we thought it might be confusing for our customers if they saw, for example, that a garment is made not only of recycled materials but also of leftover fabric. In the third year of the brand, in order to communicate things more transparently, we decided to establish product lines depending on the material utilized.”

– Cristiana Costa, the founder of Náz

Company N demonstrates the biggest change in terms of the proportion of sustainable and circular materials. In 2021, over 13% of the materials used in its collections were from what the business refers to as circular materials, which include deadstock, recycled fibers, and products with a recycled composition. In addition to the aforementioned initiatives, they released a small batch of their first upcycled collection in November 2021. 65% of materials they employ are either organic, recyclable, or FSE-certified.

Théla's material usage differs slightly because it has always used discarded plastic as its primary material. In the first year, it used nylon as secondary material. However, Diti realized that it is adding new plastic to the plastic waste, which did not make so much sense. So, she changed this, and she is not adding any new plastic at all, instead, using azo-free, naturally dried organic cotton as the secondary material. Diti is also experimenting with yarn made from recycled PET to further improve the usage of circular materials.

All three cases showed that the know-how and mindset of the employees is considered crucial for the development of circular principles. Náz's founder, Cristiana was extremely committed to sustainability from the beginning, and she is only employing and collaborating with people who share the same perspective. To integrate sustainable and responsible ways throughout its operations, Company N created a specialized Sustainability Team. These approaches are debated and addressed at monthly Sustainability Committees.

Diti, the founder of Théla places a high emphasis on environmental consciousness. She is working with its partners on project basis. For her social sustainability is an absolute priority. The artisans weaving Théla's products apply traditional, Indian weaving techniques that make the brand's products so unique.

5.5 Remaining BMC components

This subsection describes the findings of the other BMC components specifically, customer relationships, customer segments, channels, cost structure and revenue streams. However, the analysis revealed that some parts of the BMC were either not mentioned during the interviews by any of the companies or were only briefly referenced. Moreover, none of the internal documents or other secondary data sources specified them. It shows that to transform their BM into CBMs, they did not change these components, which makes them less relevant in the process of transitioning towards CE. Consequently, reviewing them did not reveal any new result.

5.6 Summary of findings

Overall, my research suggests that none of the investigated companies were able to fully implement circular practices yet to their BMs. However, all three companies have been working hard to put circular concepts into practice. In diverse ways and to different scopes and timeframes, all three companies supported the application of circular practices to their BMs. The findings are outlined in Table 2.

I identified three broad categories of possible strategies that support the implementation of circular principles, which apply to all cases. It can serve as a guideline for other fashion companies who have set similar targets. They are the utilization of sustainable resources, the application and development of new and innovative BMs and other operational practices. First, according to my results, the material choice is essential. Specifically, employing upcycled, recycled or natural resources. Two companies, Nüz and Théma were built from the ground up on using upcycled materials, namely deadstock and upcycled plastic waste. Keeping these already existing resources in the loop, automatically proves the successful first steps towards achieving circularity. The core stone strategy of Company N also requires sustainable material use, however, for them, its full realization demands more time and resources. Second, modifying existing or developing new BMs is essential as well. Compared to the other examined companies, Company N is at the forefront of developing and implementing new BMs and reverse cycle services like repairing, renting, or reselling. Third, implementing other operational best practices can contribute to address circular principles. They can contain a wide range of activities such as designing with circular

principles, responsible production, packaging with circular principles, material development and donation of leftover fabric. They are applied equally in all three cases.

Value Proposition	Näz	CompanyN	Théla
high-quality	x	x	x
social sustainability	x	x	x
environmental value	x	x	x
transparency and traceability	x	x	
education			x
Key Partners	Näz	CompanyN	Théla
like-minded partners	x	x	x
local partners	x	x	x
family-owned, small-scale businesses	x		x
certified suppliers	x	x	
local communities			x
NGOs, charities	x	x	x
educational institutions			x
Key Activities	Näz	CompanyN	Théla
circular design principles	x	x	x
local, responsible production	x	x	x
packaging with circular principles	x	x	x
repair	/	x	
return	/	x	/
rental		x	
developing own material	x	x	
donation of leftover fabric		x	x
product passport	/	x	
commitments	x	x	
monitoring, controlling	x	x	x
assessing potential partners	x	x	
sourcing policy	x	x	
Key Resources	Näz	CompanyN	Théla
utilization of sustainable materials	x	x	x
know-how of employees	x	x	x

2. Table - Summary of findings

6 Chapter 5 - Discussion

This part of the study compares the empirical findings with the existing scholarly literature introduced in the literature review chapter. For the explanation of this section, I do not draw on any new academic study. The following research question served as the basis for this dissertation: “How do fashion companies implement circular principles in their business models?” I conducted a comparative case study by analyzing three selected companies within the fashion industry (Eisenhardt, 1989).

The findings of this study indicate that there are no complete CBMs in existence within the fashion industry, despite enormous efforts and achievements. However, the examined companies show that circular concepts are constantly being tested and introduced. Indeed, some new practices and initiatives have a greater impact on some existing BMC elements (Osterwalder & Pigneur, 2010b) than others.

This study expands the readers' knowledge of how fashion companies can support circular fashion fundamentals by modifying some parts of the BMC. According to Mishra et al., 2021, it is necessary to reinterpret current value propositions and alter key BM components in order to include CE concepts like reduce, repair, reuse, and recycle into existing BMs. According to the analyses I identified value propositions, key partners, key activities, and key resources as vital components of the BM, each of which contributes to circular practices in different proportions.

Firstly, the selected companies stress the importance of introducing circular standards in their value proposition. This is an essential component of a BM, which explains the values and advantages a company guarantees to provide for its clients. It develops a unique selling proposition and outlines how a business differs from its rivals, which proves the allegation that circularity presents a chance for product differentiation in the fashion sector (Deloitte, 2019).

Secondly, the existing scholarly literature describes the necessity of the involvement of the entire value chain and the importance of strong, reliable collaborations (Dissanayake & Weerasinghe, 2022; Niinimäki, 2017). My findings also highlight the significance and central role of trustworthy, long-term partnerships. The types of partnerships vary between the selected companies, ranging from local communities to small-scale, family-owned businesses to international collaborations. It is a common feature in all three cases that the companies promote the local economy by mostly building on local partnerships.

As Dragomir and Dumitru (2022) state, for viable supply chain management, certifications and audits are essential. My findings confirm this statement, but only in terms of global, large suppliers, where certifications greatly support transparency. In case of small enterprises, they do not have a significant impact.

Thirdly, my research indicates that businesses apply circular principles in the key activities building block. It contains most of the changes and innovations as compared to the other components, including the exploration of different, creative BMs and other operational practices. Dissanayake and Weerasinghe (2022) recommend four strategies that can help the fashion sector implement CE ideas, including resource efficiency, design for circularity, extending the product's life and end-of-life circularity. The first step toward circular fashion starts at the design phase (Dragomir & Dumitru, 2022), it aims to design the items for multiple life cycles (Niinimäki, 2017). All three selected companies follow circular design practices by designing for longevity, versatility, recyclability, and disassembly. Consequently, my data confirm the characteristics listed above. Additionally, all cases set high emphasizes on local, responsible production that is promoted by the CE concept (Niinimäki, 2017). Moreover, product life extension and end-of-life circularity can contain a wide range of activities, including reuse, remanufacture, recycle, repair or resale (Dissanayake & Weerasinghe, 2022). My research proves these strategies and goes beyond that. It primarily highlights the significance of the practical applications of recycling, repairing, renting, and reselling. Additionally, I identified some other activities that are absent from current literature. Specifically, the development of the companies' owns sustainable materials, such as vegan leather and recycled yarn and the donation of leftover fabric, as well as the relevance of assessing potential partners and precise monitoring, along with strict controlling, which can increase transparency and traceability. My findings also prove that they are key aspects of circular models (Dragomir & Dumitru, 2022) that can be supported among others by the implantation of digital product IDs.

Lastly, through the utilization of sustainable resources selected companies can embrace circular principles within their key resources as stated in the literature sustainable development starts with the right materials choices (Fletcher & Grose, 2012). Besides, employee know-how, attitude, knowledge sharing and company culture all determine the scope how circularity is implemented within companies (Guldmann & Huulgaard, 2020).

Moreover, my findings contribute to the existing literature as they show that implementing circular practices into BMs can facilitate to reaching and pinning new sustainability targets

within the companies. For instance, supporting to engage in new commitments, different material choices or the introduction of new activities.

Additionally, the current literature suggests that the transition to CE remains a challenge for many organizations since it involves systemic change throughout the value chain, such as new collaborations, closed loop processes and novel BMs (Schaltegger et al., 2016) my findings confirm this allegation.

7 Conclusion

The main objective of this study was to address the following research question: “How do fashion companies implement circular principles in their business models?”

The environmental, social, and economic costs accumulated over the years by the fashion industry and the phenomenon of ‘fast fashion’ highlight the importance for fashion actors making a transition towards circular systems and adopting circular strategies (Abdelmeguid et al., 2022). Academic literature still falls short to deepen the application and best practices of CE concepts in fashion businesses (Franzò et al., 2021; Ki et al., 2021). To fill this gap, this research offers a comprehensive analysis of CE strategies for fashion companies. Despite the significant efforts of the selected companies, a fully CBM could not be achieved yet. However, the examined companies are at the forefront of the process, showing their peers that it is possible to put certain principles into practice and setting an example for them. My results show that there is no single universally applicable standard for achieving circular principles in practice. My findings prove that there are several strategies, including sustainable material usage, new, creative BMs, and new operational practices. It requires a systematic change (Schaltegger et al., 2016) which primarily affects certain parts of the BMC of Osterwalder and Pigneur (2010), namely value proposition, key partners, key activities and key resources.

Timeframe was certainly a limitation that might have affected the data collection process, specifically the depth and number of insights gathered. Moreover, there is lack of data collected from multiple stakeholders such as material suppliers and manufacturing units. Furthermore, according to my results, not all components of the BMC (Osterwalder & Pigneur, 2010b) were affected by CE, which indicates that the cases either did not require certain components to be used, or did not know how to use them. The study was also constrained by the small number of cases.

The opportunity for future research is highly extended, since the scholarly literature about CE principles in the fashion industry is still its infancy (Ki et al., 2021). Further research on this subject could examine other sectors of the fashion industry, such as the fast fashion BM. Besides, a wider range of cases could be investigated in terms of revenue, size, and global presence to reach a more solid conclusion. Moreover, the research could be extended to the remaining elements of the BMC that were not covered by this study.

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Appendix

Appendix 1 – Summary of secondary data collection

Data source	Type of data	Use in analysis	Total
Online articles	Contains articles from reputable magazines related to the industry such as Vogue, Vogue Business, Harper's Bazaar, Forbes	To obtain a more complete picture about circular fashion brands, To select the cases, To learn more about selected companies' history, operational best practices, goals and sustainability strategy	33
Podcasts	Includes interviews with the founder, creative designer and with the CEO of Company N	To get insights about the company's core values, objectives, dynamics, and sustainable principles	3
Companies' internal documents and reports	Comprises website's information, internal documents such as sustainability reports, information from LinkedIn	To understand the companies' vision, culture, community, number of employees and performance, To gather information about strategy, measures and goals in relation to sustainability and circularity	15 companies' websites, 8 internal documents, 3 LinkedIn descriptions
Online interviews	Includes online interviews conducted with the founder, creative director, and CEO of Company N	To know more about company's history, ongoing processes, sustainable principles and plans for the future	5
Blog posts	Contains online posts of blog	To get an overview about circular fashion companies, To get insights about the founding story, challenges and product portfolio of companies	8
			75

Appendix 2 – Collection of secondary data

Case	Type of data	Title of the document/ article /podcast	Name of the author/interviewer	Year of publication	Published by
Näz	website	About us	Näz	n/a	Näz
Näz	website	Materials	Näz	n/a	Näz
Näz	website	Transparency	Näz	n/a	Näz
Näz	website	Factories	Näz	n/a	Näz
Näz	website	Sell 1 Buy 1	Näz	n/a	Näz
Näz	internal document	Näz impact report	Näz	2020	Näz
Näz	LinkedIn	About	Näz	n/a	Näz
Näz	online article	Näz: pode ser um caso sério de sustentabilidade	Margarida Vaqueiro Lopes	2022	Visão
Näz	online article	ModaLisboa takes Portuguese fashion abroad	TPN/Lusa	2019	The Portugal News
Näz	online article	Duas mulheres, dois projetos por um mundo mais sustentável	Carla Tomás e Paula Freitas Pinto	2018	Expresso/ Sociedade
Näz	post of blog	Circularity and Fashion: (How) Does That Work?	n/a	2021	Shop like you give a damn
Näz	post of blog	Top 200 Sustainable Clothing Brands In Europe For 2022	Alex Assoune	2022	Panaprium
Näz	post of blog	Näz: sustainable fashion from Portugal	n/a	2021	My slow world
Näz	post of blog	Näz: sustainable fashion, Portuguese-style	n/a	2020	Ecoripples
Näz	post of blog	Let's talk about sustainability?	Maria Galvão de Sousa	n/a	The Feetingroom
Case	Type of data	Title of the document/ article /podcast	Name of the author/interviewer	Year of publication	Published by
Company N	website	Circularity	Company N	n/a	Company N
Company N	website	Community	Company N	n/a	Company N
Company N	website	Earth	Company N	n/a	Company N
Company N	website	Supply chain	Company N	n/a	Company N
Company N	website	Stories	Company N	n/a	Company N
Company N	website	EON	Company N	n/a	Company N
Company N	LinkedIn	About	Company N	n/a	LinkedIn
Company N	internal document	Sustainability report	Deloitte Hungary	2021	Company N
Company N	internal document	Sustainability report	Deloitte Hungary	2020	Company N
Company N	internal document	Sustainability report	Deloitte Hungary	2019	Company N

Company N	internal document	Supplier ethical code of conduct	Company N	n/a	Company N
Company N	internal document	Sourcing Policy	Company N	2019	Company N
Company N	internal document	Canopy Commitment	Company N	2020	Company N
Company N	internal document	UN fashion industry charter	Company N	2021	Company N
Company N	online article	This brand is on a mission to make vegan leather more sustainable	Emily Chan	2022	Vogue
Company N	online article	Nanushka accelerates its global expansion, targets €50 million	Triana Alonso	2022	Fashion Network
Company N	online article	Your Products Can Be Copied, But Not Your Spirit”: Nanushka’s Holistic Approach To Fashion Is Paying Off	Alice Newbold	2022	Vogue
Company N	online article	For Vanguard and Nanushka, it’s a family affair	Alfred Tong	2022	GQ
Company N	online article	Nanushka stops selling to Russia, rallies to support Ukraine	Bella Web	2022	Vogue Business
Company N	online article	Tovább terjeszkedik a Nanushka	Anna Gáll	2022	Index
Company N	online article	Nanushka practices origami with vegan leather	Tora Northman	2022	Highsnobiety
Company N	online article	Kontinenseken átívelő siker a Nanushkánál	n/a	2022	Magyar Nemzet
Company N	online article	Megőrizte a divatmárkák közötti első helyét a Nanushka	n/a	2022	Magyar Nemzet
Company N	online article	Sustainability. Nanushka: The transformed tragedy.	Giulia Volpini	2022	I’m Firenze Digest
Company N	online article	Sandra Sandor and Peter Baldaszi	n/a	2022	BoF 500
Company N	online article	Nanushka is Europe’s fastest growing fashion company Financial Times	n/a	2021	Hype&Hyper

Company N	online article	A GB & Partners a legnagyobb hazai magántőkealap-kezelőként jelent meg Európa tőkepiaci térképén	n/a	2021	Ripost
Company N	online article	Megnyitja első londoni üzletét a Nanushka	Szabina Molnár	2021	Index
Company N	online article	The minimalist brand leading the way for sustainability in fashion	Sarah Joseph	2021	Emirates Women
Company N	online article	A divatipar leggyorsabban növekvő vállalata Európában a Nanushka a Financial Times rangsorolása szerint	n/a	2021	Ripost
Company N	online article	The homely mid-century stylings of Nanushka's new London boutique	Laura Hawkins	2020	Wallpaper
Company N	online article	Alighieri x Nanushka: The most wanted jewelry collab of the moment	Anna Venet	2020	Vogue
Company N	online article	Nanushka to manufacture & distribute free reusable protective masks	Pauline De Leon	2020	Hypebae
Company N	online article	Nanushka steps in with reusable protective masks	Valerie Stepanova	2020	V Magazine
Company N	online article	Nanushka fall 2020 ready-to-wear	Tina Isaac-Goizé	2020	Vogue Runway
Company N	online article	Nanushka: Sustainable Fashion with Vegan Leather & Upcycled Materials	n/a	2020	Vegconomist
Company N	online article	Nanushka is the brand at the forefront of sustainable, eco-conscious fashion	YeEun Kim	2020	Hypebae
Company N	online article	Hasított tavaly a magyar divatmárka	n/a	2020	Index
Company N	online article	Cool-Girl Label Nanushka Celebrated Its New Manhattan Store With a Cocktail Party	Jenna Adrian-Diaz	2019	Vogue
Company N	online article	How To Shop Leather Responsibly	Julia Hobbs	2019	Vogue
Company N	online article	Nanushka fall 2019 ready-to-wear	Laird Borrelli-Persson	2019	Vogue Runway
Company N	online article	TheBrand Nanushka	Amy de Klerk	2018	Harper's Bazaar

Company N	online article	Meet the Hungarian Label Beloved by French It Girls	Liana Satenstein	2017	Vogue
Company N	online article	Nagyot nőtt a Nanushka árbevétel	n/a	2017	Index
Company N	online interview	The rise of Nanushka between sustainability and effortless aesthetics	Edoardo Lasala	2022	NSS Magazine
Company N	online interview	Sandra Sandor Interview: The Nanushka Founder on Her Inspirations, Sustainable Fashion and Nanushka Menswear	Joseph Furness	2021	Farfetch
Company N	online interview	Nanushka is Instagram's Favorite Vegan Leather Brand	Agatha Krasuski	2019	L'Officiel USA
Company N	online interview	Nanushka's Sandra Sandor	n/a	n/a	Liberty
Company N	online interview	Modernity at the service of sustainability	Carla Tomillo	n/a	Metal
Company N	post of blog	Nanushka turns garments into lifelong assets	Company N	n/a	Natasha Franck
Company N	podcast	Nanushka's CEO Péter Baldaszti Talks About China And The Future Of Fashion	Alison Tudor Ackroyd, Yashan Zhao	2022	Alicast from Alizila
Company N	podcast	25. Defining the new luxury with Nanushka	Carla Buzasi	2021	The WGSN Podcast
Company N	podcast	In Conversation with Sandra Sandor of Nanushka	Susie Bubble	2017	Liberty Discovers
Case	Type of data	Title of the document/ article /podcast	Name of the author/interviewer	Year of publication	Published by
Théla	website	Why Plastic?	Théla	n/a	Théla
Théla	website	Our Process	Théla	n/a	Théla
Théla	website	Our circular practices	Théla	n/a	Théla
Théla	website	Our partners	Théla	n/a	Théla
Théla	LinkedIn	About	Théla	n/a	Théla
Théla	post of blog	The brands - Théla	n/a	n/a	Borderless Creations
Théla	post of blog	18 Sustainable Fashion Brands Leading the Circular Economy	n/a	n/a	Good on you

Appendix 3 – Coding table

Coding table	
Codes	Citations
close, long-term relationship	"More than being suppliers, they are partners that grow at our side - it's a long-term relationship of sharing knowledge." "With regards to manufactures we tend to have long-term relationship with them."
local partnerships	"We partner with various like-minded, local organizations in India to make our upcycled products." "Therefore, Náz created partnerships with Portuguese factories in order to develop new recycled products." "We spent 41% of the cost of goods sold (COGS) locally on Hungarian suppliers, showing our key commitment to supporting the local economy."
global partnership/collaboration	"We similarly work to maintain a strong relationship with our more remote factories. "
strictly selected suppliers	"We make sure to go to the factories and check potential partners at least two times before starting working with them."
certifications	"The majority of our production partners are small companies that are not certified due to its high costs. We would never change partners just because of a logo in our tags. So we choose transparency." "Our suppliers know exactly what the certification are we do accept."
non-compliances	"When I cannot go to the factory, it is a major red flag." "Depending on the responses of the survey we analyze what is risk for us. If there are any non-compliances, they need to be solved. We keep track and manage the relationship with that partner."
reusing	"In the end it is much better to repair or reuse than recycle."
recycling	"And even though post- consumer textile recycling is still very reduced, we do design with that in mind, hoping that the possibility is increasing in the near future. "

rental	"We have set up rental partnerships with platforms such as HURR to similarly support a more responsible way of consuming fashion by maximising the use of a product and lengthening its life cycle. "
repair	"The brand also provides a garment repair service, precisely with the aim of extending the product life cycle."
resale	"We are active on the resale side in the US. Customers can leave a product of Company N and they will get a voucher that they can use in store or online."
donation of leftover fabric	"For those materials that we are unable to use, we organize local fabric sales or donate all that is left to the design faculties of two local universities." "The plastic waste generated during our production is donated to a recycling design firm in New Delhi."
deadstock fabric library	"We made a deadstock fabric library to facilitate the upcycling of unused fabrics in our collections."
design out waste	"We focus on designing out waste and pollution by using upcycled, recycled and renewable resources."
packaging with circular principles	"92% of the packaging was either recyclable or compostable at the end-of-life stage." "In order to lower our impact on this area, all our plastic mailers are produced in Portugal, and we opted only for recycled and recyclable plastic mailers." "Our packaging is plastic-free – from the recycled cardboard box to the paper tape."
local production	"We made a pledge to produce everything we can in Portugal." "Right now, the production happens locally. The waste is collected and then handcrafted by our craft community in India."

monitoring, controlling the supply chain	"Suppliers need to sign the code of conduct and fill out a survey and then Náz is evaluating them." "We do work with our partners very closely; we want to make sure that everything is zero waste. We visit them every year." "We are sending out an environmental questionnaire to evaluate the environmental performance of our suppliers."
sourcing policy	"The design part is very much focused on making sure that the materials we source, and use are sustainable and certified. " "It really needs to be recycled and has the least impact possible."
leftover fabric	"These fabrics come from textile factories that either overestimated their needs or needed to produce more than ordered due to minimum orders of yarn or even due to machinery." "At the beginning of the brand I only used 100% leftover fabric."
recycled materials	"And for next collections we are going to use yarn made from recycled PET." "Alongside small textile factories near Covilhã with deep knowledge in the art of making fabrics, we started developing fabrics and knits of recycled yarn."
natural materials	"When we started, we used cotton but it was not organic or naturally dried. The second year we used naturally dried organic cotton. In the third year we used azo-free dried organic cotton." "It is really hard to explain why deadstock organic cotton is better than a new organic cotton."
vegan leather	"Before 2022 we launched our new alternative leather as Company N became popular for using vegan leather."
discarded plastic	"We offer premium, ethical fashion accessories handcrafted from plastic waste."
social sustainability	"Focused on empowering women, reducing poverty, and enhancing health and wellbeing, we support local communities mainly through art and craft projects." "I choose my partners for their social angle. Because they were helping these communities, giving them employment, giving them livelihood."

environmental impact	"Every clothing item has an environmental cost. The goal is to try to reduce it as much as possible." "Our focus is on improving our impact through more responsible solutions in material choices and production processes around circularity."
design principles	"As a brand we do not only use leftover fabrics and recycled ones, but we also design for circularity, good quality, and design clothes that can be recycled." "Design has to take into account: durability recyclability and traceability."
sampling	"Our design team now uses deadstock materials regularly for collections as well as sampling."
product portfolio	"All Nāz products fall into three different lines, that clarify the materials used (recycled line, surpluses line, ecological line)."
purchasing patterns	"Our best advise we can give, is to look first into the clothing items you own, before purchasing something new. Sometimes we may feel like we need to purchase a new piece. But when we look at our wardrobe, we may realise that we have a very similar piece already. Then we just need to learn to style it differently. But if you do realise you need something new, purchase something good. That means garments made of 100% natural fibres and from environmental positive brands. So you can assure the minimum environmental impact of your new garment."
without compromising the quality	"That was an area that we needed to further explore and innovate, it took almost 2 years to develop this new material. Because we did not want to compromise on the quality."
extending the life of garments	"To make sure that we provide the possibility to our customers to somehow re-upcycle a product. So that it can stay in the wardrobe for longer." "We design clothes to be worn multiple times and during an extended period of time."
commitment	"Our dedication to making fashion circular with the Ellen MacArthur Foundation has been ongoing since 2018."

concerns	"She loved fashion and wanted to work in the area but did not want to contribute to such a dirty industry. With that in mind, she decided to create a brand that would produce 100% in Portugal and aligned with sustainability values."
transparency	"Well, transparency, for us, means no games. We make available to our suppliers, partners, customers, and stakeholders all the information we have about our processes. This includes sourcing, handling the product, the materials, etc." "Our goal is to achieve full transparency and traceability of our supply chain by 2025, to ensure that our values are upheld at every step."
traceability	"Even though we work with ecological fibers there's a need to improve their traceability. Certifications have little meaning if there's no information about the fiber's origins."
responsibility	"Responsibility means to face and bear the consequences of our actions." "The future is circular, and we recognise our responsibility as a brand to proactively build a circular fashion system where products and materials are used responsibly, utilizing digital identities to enhance the customer experience by providing the highest level of transparency."
closed loop	"The future plan in terms of circularity is having a closed loop system so customers can return the products instead throwing them away."
achieving zero waste	"Our designs are zero-waste – the plastic woven fabrics are custom-made to avoid cutting during the tailoring." "By using what already exist we reduce textile waste that would usually end up in landfills."
working conditions	"All the factories with whom we work have good working conditions. They need to have things that seem weird, but they need to have heaters, they need to have windows, they need to have a place to eat, and sometimes this is not the reality of factories. We film the factories, and that is like a huge filter. When it is a good factory, they have nothing to hide. We also look into wages and how they treat employees."

human rights	"We are committed to respecting the rights of everyone who works with us, from our head office team members to the people who make our garments and cultivate the materials. In 2020, we established our Code of Conduct and Supplier Manual."
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Appendix 4 – Coding tree

Coding tree		
Codes	Categories	Themes
close, long-term relationship local partnerships global partnership/collaboration strictly selected suppliers certifications non-compliances	key partners	business model change
reusing recycling rental repair resale donation of leftover fabric deadstock fabric library design out waste packaging with circular principles local production monitoring, controlling the supply chain sourcing policy	key activities	
leftover fabric recycled materials natural materials vegan leather discarded plastic	key resources	
social sustainability environmental impact	value proposition	
design principles sampling	design process	
product portfolio purchasing patterns	sustainable consumption	fashion brands
without compromising the quality extending the life of garments	giving garments a second life	
commitment concerns	making a change	
transparency traceability responsibility	core values	

closed loop achieving zero waste	principles	circular economy
working conditions human rights	responsible manufacturing	