

# REMANUFACTURING BUSINESS MODEL EXPERIMENTATION IN FASHION AND TEXTILES

– LEARNINGS FROM A PILOT PROJECT

Thesis for One-Year Master, 15 ECTS  
Textile Management

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2019.18.06



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**Title:** Remanufacturing business model experimentation in fashion and textiles – Learnings from a pilot project.

**Publication year:** 2019

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### **Abstract**

Adapting a circular system through business model experimentation can generate profit and sustainable growth for fashion firms. Business model experimentation explores novel opportunities to be at the forefront of transforming existing markets. Remanufacturing is one circular strategy that entails the process of recovering both raw material and value from end-of-life products for the production of new items. Remanufacturing in the context of business model experimentation is a promising solution in the fashion and textile industry to drive the transition into a circular economy. Through case study research the phenomenon of remanufacturing business model experimentation within the fashion and textile industry is investigated. The case phenomenon is investigated by means of the Re:workwear project, in which the brand Cheap Monday uses discarded workwear for a remanufactured collection next to its common collection. The focus of the study is on remanufacturing business model experimentation alongside the brand's business-as-usual and decisive factors of this phenomenon. The processes and -steps within experimentation were analysed through semi-structured interviews with various involved parties of the supply chain. A framework combining the Business Model Canvas and the stepwise approach of business model experimentation by Bocken et al. (2017) is developed and applied throughout the research. It is found that (1) motivation and scope, (2) input material, (3) flexibility, (4) stakeholder collaboration and (5) system development are decisive factors for remanufacturing business model experimentation. Further research is necessary to investigate the phenomenon in other settings and within a variety of other firms in the industry in order to test the findings and validate the generalisability.

**Keywords:** Business Model Experimentation, Business Model Innovation, Circularity, Remanufacturing, Value Theory

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## List of abbreviations

BMC	Business Model Canvas
BME	Business Model Experimentation
e.g.	for example (lat. Exempli gratia)
i.e.	that is (lat. Id est)
PR	Public Relations

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# 1 Introduction

*The following chapter lays out the background for this research by formulating the motivation, the research gap and purpose. In addition, the chapter serves the purpose to introduce the reader to the investigated phenomenon of remanufacturing business model experimentation (BME) within the fashion and textile industry. In continuation, the structure of this work is laid out and delimitations are defined.*

## 1.1 Background

“It’s only by working together that we will be able to deliver a systematic shift in the way our industry tackles urgent sustainability challenges and proactively designs a future we can all believe in” – Nick Beighton, CEO, ASOS

(Global Fashion Agenda, 2019, p. 9)

The fashion and textile industry is one of the largest and most significant consumer industries worldwide, accounting for roughly 2% of the world’s Gross Domestic Product (Global Fashion Agenda and The Boston Consulting Group, 2017). In the past 15 years, clothing production approximately doubled reporting an annual global revenue of approximately USD 1.838.554 million in 2019 (Statista, 2019). Currently, the industry employs more than 300 million people worldwide (Ellen MacArthur Foundation, 2017) and maintains complex, interdependent global value chains, where production and consumption are to a great extent decoupled between the global South and West (European Parliamentary Research Service, 2019; Brooks, 2015). Growing middle-classes in emerging countries and increasing consumption in mature markets are key drivers for this growth (Ellen MacArthur Foundation, 2017).

To date, the industry is built on a linear system, made-up of ‘production-consumption-disposal’, which drives profits by shortening the life-cycles of products, lowering the quality and promoting a disposal attitude towards their target audience (Lewis, et al., 2016; Global Fashion Agenda and The Boston Consulting Group, 2018). It is projected that the global population will exceed 7.3 billion people by 2030 (United Nations, 2017), this entails a significant growth of apparel consumption by approximately 63%, resulting in 102 million tons per annum (Global Fashion Agenda and The Boston Consulting Group, 2017; Ellen MacArthur Foundation, 2017). While consumption is continuously rising driven by fast fashion, clothing utilisation decreased by 36% in comparison to 15 years ago, resulting in many items being thrown away within less than a year or remaining inactive in people’s closets (Ellen MacArthur Foundation, 2017). It is estimated that as little as 1% of discarded garments are recycled into new clothes, as required technologies are still in the early stages (European Parliamentary Research Service, 2019). As a result, large amounts of non-renewable resources are consumed, which are subsequently lost to landfills or incineration (Ellen MacArthur Foundation, 2017).

The issue at hand is that this linear system is dependent on non-renewable resources and virgin materials including fossil fuels, land and water, which are subject to growing scarcity and ultimately puts the profitability of the industry at risk (Global Fashion Agenda and The Boston Consulting Group, 2018; Global Fashion Agenda, 2019). In addition, this practice is extremely polluting, crossing the boundaries of environmental sustainability and degrading the natural environment and ecosystems around the world (Global Fashion Agenda and The Boston

Consulting Group, 2017). If the current conduct is followed, the Paris Agreement to keep global warming below 2,0 degrees Celsius, will be missed (European Parliamentary Research Service, 2019).

It is evident that the linear model is reaching its physical limit and there is severe pressure for an immediate system level change in order to ensure long-term value creation (Global Fashion Agenda, 2019). Recently, roughly 50% of fashion companies have taken first actionable steps towards more sustainable practices, however, the overall progress is too slow (Global Fashion Agenda, 2019).

“The transformation towards a circular and climate positive business model is key, as is ensuring that the jobs created along our value chains are fair and equal.” – Karl Johan Persson, CEO H&M Group

(Global Fashion Agenda, 2019, p. 6)

Adapting a circular system calls for transformation and fundamental change to enable restorative and regenerative practices that create economic, environmental and social benefits (Antikainen & Valkokari, 2016; Dyllick & Hockerts, 2002). Circularity reaches from initial design to extended producer responsibility in order to produce, sell and collect products and enable end-of-life solutions at scale (Global Fashion Agenda, 2019). At the same time, a fundamental shift in mindset of consumers is required in order to consume less and make things last (Global Fashion Agenda and The Boston Consulting Group, 2018). The lifespan of garments is projected to extend with new business model approaches involving reuse, refurbish, repair and rental practices (BOF, McKinsey & Company, 2018). In addition, legislation and the development of new policies further drive the adaptation of circular business models in the fashion industry (Antikainen & Valkokari, 2016; European Parliamentary Research Service, 2019).

As end-of-life management of products becomes a critical issue and companies are increasingly confronted with laws and regulations on waste disposal and obligations to recover end-of-life products (Michaud & Llerena, 2011). Remanufacturing depicts one way to minimize regulation burden at the same time as adapting a circular system. It entails the process of restoring or recovering products, where both the raw material content and the added value of the original product are conserved into new, remanufactured products (Giutini & Gaudette, 2003). Hence, components keep their original function, rather than converting them into raw materials as it is the case in recycling. As a result, the threat of disposed or not recovered products imposed on the environment and humanity is minimized through energy- and raw material consumption (Gallo, et al., 2012). At the same time, remanufacturing practices can open new opportunities for businesses (Ibid). For example, according to Porter and van der Linder (1995), remanufacturing provides competitive advantage through resource productivity, material and energy savings.

In order to develop remanufacturing capabilities as a lever towards the circular economy, fashion companies need to develop and adapt innovative new business practices (Boons, et al., 2013). Business model innovation entails to either develop a new business model or to re-configure an existing one in order to create, deliver and capture value. This can be achieved through business model experimentation (McGrath, 2010), “[...] an intentional and systematic approach to identify, test and learn about value creation strategies that could be adapted by a business in response to current trajectories” (Bocken, et al., 2017, p. 1). Previous research

recognizes that business model experimentation is an essential driver to develop and launch innovative business models especially in uncertain environments (Amit & Zott, 2001; Chesbrough, 2010; Weissbrod & Bocken, 2017).

## 1.2 Problem statement and research gap

Remanufacturing is a circular strategy, widely adapted in various industries, however, underexplored in the fashion and textile industry. Savaskan and Van Wassenhove (2006), for example, state a number of remanufacturing activities as a response to increasing environmental performance requirements. The examples range from car manufacturers (Daimler Chrysler and BMW), one-time-use cameras (Kodak), copy- and print-cartridges (Xerox, Canon, Accutone), copiers (Agfa Gevaert, Océ and Xerox) to mobile phones (ReCellular). Esenduran et al. (2017) further state that “[...] Xerox, HP, and Apple have well-established product take-back programs and offer both new and remanufactured versions of their products [...]” (p. 132). These examples are proof of the success of remanufacturing strategies in numerous industries. Hence, the applicability of remanufacturing in the fashion and textile industry can be a promising innovation to further explore.

As mentioned, one way to strive for business model innovation is to develop experimentation capabilities. Bocken et al. (2017) research the experimentation process with circular strategies in established clothing firms, with the goal to innovate the existing business model for sustainability. BME in clothing firms in the context of remanufacturing is, however, not covered. It is evident that existing retailers in the market begin to experiment with small-scale remanufacturing initiatives besides their daily business. Examples include the collaboration of The North Face with Christopher Ræburn to launch a remanufactured accessory line (The North Face, 2019) and the upcycled re-design collection of Lindex AB in Sweden (Lindex AB, 2019).

Besides these first initiatives in fashion remanufacturing, to date, there is an insufficient number of in-depth case studies on BME for sustainability in established fashion and textile companies researched (Bocken, et al., 2017; Andries, et al., 2013). Bocken et al. (2017) identify an additional lack of circular business model- and remanufacturing literature in relation to the clothing industry. Yet, the studies of Kant-Hvass (2014) and Weissbrod and Bocken (2017) depict exceptions, as they outline how experimentation can lead to increased sustainability or a circular business model in large established fashion firms.

Reasons why previous research from other industries cannot be transferred to the fashion industry include the structural and characteristic differences of these industries. These differences concern product characteristics and supply chain structure (Savaskan & Van Wassenhove, 2006). The supply chain structure the collection systems in the fashion industry are fragmented and highly complex due to the involvement of many different parties and low levels of strategic collaborations between the different actors (Ekström & Salomonsson, 2014; Brooks, 2013; Pal, 2017). In addition, in contrast to non-fashion products, the look of (remanufactured) fashion items is crucial throughout the customers’ purchasing decision-making process (Jayaraman & Luo, 2007).

As a result, more research is required in the field of remanufacturing BME in clothing retail businesses in order to facilitate an understanding of how these retailers can capitalize on this phenomenon. Existing literature fails to outline implications that are decisive for, and hence, facilitate the process of remanufacturing BME. The investigation of the journey of a remanufacturing BME case could support to uncover significant factors on the process.

## 1.3 Purpose

Resulting from the problem statement and the identified research gap, the purpose of this research is to investigate remanufacturing BME of fashion retailers. In particular, decisive factors for developing remanufacturing business model experiments and thereby move towards a circular business model. Throughout this study decisive factors are understood as a determinant that settles remanufacturing BME conclusively. That being said, Bocken et al. (2017) propose a stepwise process framework (see Chapter 3.1) for BME for sustainability in general. However, there is a lack of guiding decision-making factors, in particular, for remanufacturing BME process. Such decisive factors can provide guidance and support throughout the initiation and execution of remanufacturing BME processes. Hence, this study on decisive factors is crucial and should outline and support the decision-making on which remanufacturing BME is conducted. Resulting from this, the following research question is formulated:

*‘What are decisive factors for remanufacturing business model experimentation in the fashion and textile industry?’*

### 1.3.1 Structure of the thesis

This research is structured as displayed in Figure 1 below. First, the research topic and gap are outlined based on the themes of business model experimentation and remanufacturing at broad scope. Based on the identified gap the research purpose is defined to further narrow down the topic. In continuation, a main research question is formulated to fulfil the purpose. A literature review is conducted to establish an overview of existing knowledge on related fields. Later, this information is used to validate the empirical findings. Due to the exploratory nature of this work, it additionally serves as a foundation to induce a theoretical framework. Subsequently, this theoretical framework is developed and serves as a lens to analyse the results. Following, the methodology for data collection is defined and executed. The empirical findings are stated and further discussed. The findings are concluded with regard to the original research question and thereby deliver a theoretical contribution to the existing body of knowledge in this field.

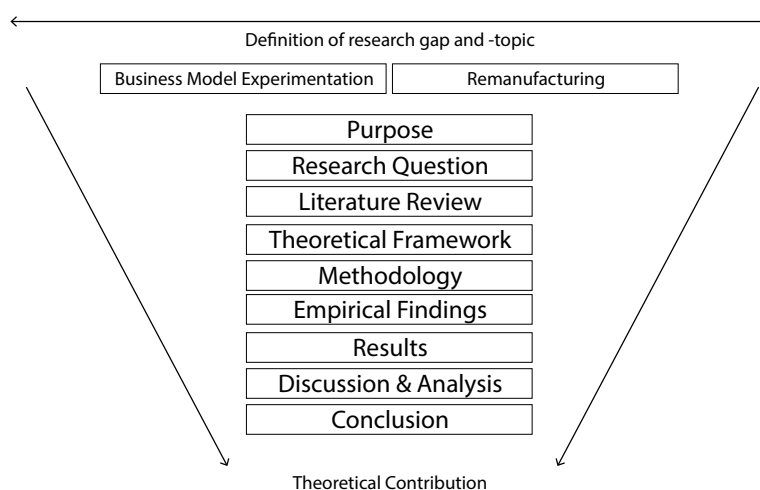


Figure 1 - Structure of the thesis

## 1.4 Delimitation

In order to fulfil the purpose of this thesis and answer the research question the focus of this study is on the phenomenon of remanufacturing BME. There is an industry focus on the fashion and textile industry, which delimits the scope of this study further. The phenomenon is critically investigated by means of a case study. The case study is limited to a single project of remanufacturing BME and therefore creates a narrow perspective. Hence, the case is used aiming at analytical generalisation. Further, the data analysis is specific to this single project and its practices and execution. Throughout the data collection, the sampling is delimited to individuals of the different companies involved. These individuals are interviewed to be able to investigate different viewpoints with regard to the phenomenon. Further, the phenomenon is investigated as an individual process that takes place alongside the common (linear) business model. Hence, this delimits the study, as no light is shed on replacing an existing business model with a remanufacturing business model.

In addition, a process-based view is adapted in order to allow the analysis of experimentation and organisational learning. The process-based view entails the advantage to place the innovation process at the centre. This aligns with the purpose and aim of this research. However, the resource-based view is disregarded. It focusses on resources and the type of value created, rather than considering knowledge itself, the innovation process and organisational learning. This makes the resource-based view unsuitable for this study. In contrary, this study aims to explore value creation and experimentation and in particular, how value is created.

While existing literature provides multiple tools and methods for BME, this study is delimited to the Business Model Canvas (BMC) and the stepwise approach for BME suggested by Bocken et al. (2017). This delimits the study, as this approach is more conceptual. Thus, the outcome outlines the value creation process, rather than different types of value created. Therefore, the triple bottom line including environmental, ecological and social aspects as well as other types of value will not be considered outside the context of the process analysis. Consequently, this study is delimited to explore the process, rather than the performance outcome of the experimentation, also in terms of sustainability.

During the data collection process (Chapter 4.3.1) solely open-ended questions are employed in a semi-structured interview. This facilitates a deep dive into respondents' statements and an understanding of the phenomenon with the goal of accessing (non-numerical) information that are inaccessible otherwise (Morse, 2010). Therefore, a quantitative analysis of the respondents' answers is not provided. The study is delimited to a qualitative analysis. Based on the data analysis (Chapter 4.3.2) with the framework, the research does not aim to provide a business plan for BME and remanufacturing. Instead, decisive factors for remanufacturing BME for fashion firms are outlined.

As mentioned, circularity is a popular solution towards the issues of the linear fashion system and can be seen as a lever to enhance sustainability. However, this study does not investigate these claims, neither does it explore sustainability implications of remanufacturing BME. Therefore, the study is delimited to the analysis of the decisive factors of the process of remanufacturing BME.

## 2 Literature review

*The following chapter outlines relevant academic literature in regard to business model experimentation and remanufacturing. It explores peer-reviewed scientific publications in a systematic manner in order to establish a holistic overview of the state of existing research in the field.*

‘Circular Economy’ is a term used to describe an economic closed-loop system, where ideally no resources are lost as waste (Bocken, et al., 2014). These closed loop systems entail a cradle-to-cradle flow of resources, to ensure the continuous usage of such (Stahel & Clift, 2016). The concept proclaims that business must part from common linear view of activities and adapt innovation beyond eco-efficiency and sufficiency (Blomsma & Brennan, 2017; Brennan, et al., 2015). Furthermore, life-extending strategies play a major role in these types of economies in order to create economic and environmental value (Blomsma & Brennan, 2017; Murray, et al., n.d.; Geissdoerfer, et al., 2017; Dyllick & Hockerts, 2002).

In the context of the fashion industry, where fast-fashion and continuous waste streams are common practice, the circular economic system has the potential to be a powerful tool for positive change (Kant-Hvass, 2014; Fischer & Pascucci, 2017). Previous research outlines that adapting new circular approaches form promising opportunities in terms of economically viable sustainability practices but also hold risks (Hockerts & Wustenhagen, 2010).

Businesses who want to be part of this Circular Economy need to develop Circular Business Models (CBM) to create new value from materials at the end of the use phase of products through activities such as recycling, remanufacturing or reuse. Hence, the production of new products is “based on utilizing economic value retained in products after use” (Lindner & Williander, 2017, p. 183). CBMs are oppositional to linear business models. To date, linear business models dominate in most manufacturing industries and make limited use of recycling or remanufacturing of parts (Lindner & Williander, 2017). “[S]lowing, closing, or narrowing flows of the resource loops” (Oghazi & Mostaghel, 2018, p. 3) create, deliver and capture value in CBMs. The process relates to reverse logistics, as it requires a return flow of products from user back to the producer (Lindner & Williander, 2017).

### 2.1 Business model experimentation

According to Bocken, et al. (2017) “Business model experimentation for sustainability is an intentional and systematic approach to identify, test and learn about value creation strategies that could be adopted by a business in response to current unstable trajectories” (p.1). The goal of business model experimentation is to leverage novel opportunities and to be on the forefront of transforming or disrupting existing markets (Christensen, 1997; Magretta, 2002).

Nowadays, large clothing brands are under pressure to transform their business models in order to take the entire triple bottom line into account in a sustainable manner. Chesbrough (2010), outlines the importance of business model experimentation in order for firms to remain relevant in fast-paced and uncertain industries (McGrath, 2010; Andries, et al., 2013). In addition, this approach yields the exploration of novel value opportunities (Andries, et al., 2013) by taking factors such as time, place and stakeholders into account (Weissbrod & Bocken, 2017). Experimenting with new strategies can provide an early proof-of-concept and can build the foundation for large scale pilots and long-term adaptations of existing business models (Chesbrough, 2010; Osterwalder, et al., 2014; Kraaijenhagen, et al., 2016). Therefore, business

model experimentation for sustainability in the context of large international fashion firms is of growing interest. However, little academic research is available in regard to business model experimentation for circularity, especially in the context of large international fashion firms, including remanufacturing (Bocken, et al., 2017; Weissbrod & Bocken, 2017).

Building on literature and examples from industrial practice, Bocken et al. (2014) develop eight archetypes creating an overview (i.e. categorisation and explanation) of business model innovation for sustainability. The archetypes may facilitate to build up the business model for sustainability. They can be grouped into (1) technological, (2) social and (3) organisational archetypes, and include (1) maximise material and energy efficiency; create value from waste; substitute with renewables and natural processes; (2) deliver functionality rather than ownership; adopt a stewardship role; encourage sufficiency and (3) re-purpose the business for society/ environment and develop scale-up solutions (Ibid).

Business model experimentation is often driven by the uncertainty of what the right set-up may be in regard to changing market and customer conditions (Chesbrough, 2010). It is evident that experimentation is often initiated by a sense of urgency and conducted in conditions of limited time and resources (Amit & Zott, 2001; Chesbrough, 2010; Weissbrod & Bocken, 2017). The ability to innovate is highly dependent on the experimentation capability of a firm and is required in order to succeed in today's markets (Chesbrough, 2010). Chang et al. (2012) outline that experimentation is especially useful in conditions where radical innovation is needed. Furthermore, the experimentation capability of a firm can be influenced and developed through a number of informal and covert approaches (Weissbrod & Bocken, 2017). Whereas it is evident that early involvement of customer through public experiments can enhance the progress of the experiment (Weissbrod & Bocken, 2017). Previous research shows that even an intentional and stepwise-planned process to experiment is mostly emergent and highly iterative in the end (Bocken, et al., 2017). In addition, it is evident that the success of an experimental approach cannot be guaranteed and somewhat depends on serendipity and favourable business circumstances (Ibid). Nevertheless, business model experimentation is a perpetual process that should include continuous review and action to terminate weak strategies and pursue the more favourable ones (McGrath, 2010).

Bocken et al. (2017) outline that there are different approaches and methods to business model experimentation, some are more structured and others less. However, most methods are only applicable for start-ups and are therefore not suitable for large international companies (Blank, 2013). At the same time, Weissbrod and Bocken (2017) argue that using lean start-up methods in order to experiment with sustainability strategies might be useful for larger firms. Furthermore, it is outlined that tools such as the Business Model Canvas are useful for experimentation as they can map out existing and future business models and provide guidance (Chesbrough, 2010; Osterwalder, et al., 2014; Osterwalder & Pigneur, 2010). Additionally, mapping out the value creation process can enhance the adaptation of innovative sustainability strategies by considering different types of value created within the firm and its stakeholders (Short, et al., 2012; Bocken, et al., 2013). Nevertheless, 'mapping tools' themselves, do not initiate experimentation or innovation and additional methods such for example interviews, think tanks and 'hands-on' action are required for experimentation to take place (Ries, 2011).

Recent research shows that introducing the Circular Economy concept as a guidance, helps to develop ideas for sustainable business model experimentation within an established business environment (Bocken, et al., 2017). As a result, this approach gives way to themes such as for example reuse, recycle or remanufacture, which serve as a rich pool for experimentation-

inspiration (Kant-Hvass, 2014; Bocken, et al., 2017). In addition, narrowing down and defining the aim of the experimentation, e.g. reducing landfill target, further supports the focus of the experimentation process (Bocken, et al., 2017).

Previous research uncovers a number of possible barriers for business model experimentation including (1) organisation, (2) processes, (3) roles and (4) tools (5) environments (Hallstedt, et al., 2013; Miller, 2016; Laukkanen & Patala, 2014).

(1) Organisational barriers may include for example a lack of senior management support or financial assets as well as a lack of flexibility (Hallstedt, et al., 2013; Laukkanen & Patala, 2014). Furthermore, established organisations have to ensure the development of a governance that leads towards action, when it comes to business model experimentation (Chesbrough, 2010; Kraaijenhagen, et al., 2016).

(2) In terms of processes it is evident that a main barrier is the ‘lock-in’ in existing practices and a general aversion towards change (Chesbrough, 2010). In addition, the existing business model can hinder experimentation, as new strategies may threaten existing value propositions (cannibalisation) (Velu & Stiles, 2013). Missing know-how and experience in regard to sustainability and circularity experimentation is another significant barrier together with a lack of customer awareness (Bocken, et al., 2017; Kant-Hvass, 2014).

(3) Another barrier for business model experimentation within firms is selecting and building the right team (Franke, et al., 2008) and developing a coherent and shared vision of the experiment (Ries, 2011). Unclear allocation of responsibility for the implementation of the project is often a cause of failure to realize the plans (Hallstedt, et al., 2013). While a sustainable strategy may already be common practice in the industry, its adaptation in a firm may be radical and can therefore still be difficult to realize for the team (Garcia & Calantone, 2002; Bocken, et al., 2012).

(4) Additionally, uncertainty caused by the lack of a clear project approach or template, can hinder business model experimentations (Bocken, et al., 2017). This is further enhanced by missing knowledge-sharing platforms and assessment tools (Hallstedt, et al., 2013).

(5) Miller (2016), highlights that business model experimentation is challenging as the clothing industry is a fluctuating and somewhat unpredictable environment. The uncertainty of the environment, furthermore, drives the uncertainty of what the right business model for a fashion company may be (Chesbrough, 2010). The fundamental issue here is also the ever-changing behaviour of consumers which is why business model experimentation and continuous revision is essential (Chesbrough, 2010). Finally, laws and regulations can impact business model experimentation as well as the lack of legal drivers (Laukkanen & Patala, 2014).

Besides these barriers, when executed successfully, business model experimentation entails numerous benefits for companies which are briefly outlined in the following. Business model experimentation can overcome bureaucratic hurdles and drive radical innovation activities (Andries, et al., 2013; Hilden, et al., 2013), through exploring new sustainable value propositions (Weissbrod & Bocken, 2017). This enables companies to further transition into a circular system and implement sustainable practices, to create social and environmental value (Bocken, et al., 2017). Kant-Hvass (2014), outlines that as a result large clothing companies can build customer loyalty as well as tapping into new customer segments. In addition, new value can be captured as multiple value streams can be generated from the same product e.g.

second-hand sale or remanufacturing. These aspects strengthen the brand image and drive brand equity (Kant-Hvass, 2014).

Business model experimentation therefore plays an essential role in order to compete in nowadays fast-paced global markets and create competitive advantages (Kant-Hvass, 2014; Bocken, et al., 2017). Previous research uncovers that business model experimentation for sustainability benefits from collaboration (Fischer & Pascucci, 2017; Kraaijenhagen, et al., 2016). This can be of particular benefit for mature fashion firms as collaborations with innovative start-ups can inspire novel solutions for circular business models (Schaltegger, et al., 2016). One example includes H&M's initiative CO:LAB a plug-and play program for start-ups with novel approaches to enable circularity in the fashion industry (Schaltegger, et al., 2016).

## **2.2 Remanufacturing as business model experimentation and its contextualization in fashion**

Remanufacturing is a circular strategy that entails the process of recovering both raw material and value from end-of-life products for the production of new items (Giutini & Gaudette, 2003). To date, remanufacturing is employed in various industries (Chapter 1.2). Yet, remanufacturing in the mentioned industries differs from fashion remanufacturing due to structural and characteristic discrepancies. These include product characteristics, supply chain structure and industry experience (Savaskan & Van Wassenhove, 2006). Remanufacturing within the context of fashion entails a much higher complexity resulting from highly fragmented, global clothing networks (Ekström & Salomonsson, 2014; Brooks, 2013; Pal, 2017). Further, the incoming items are difficult to forecast in terms of type, quality and timing (Anderson & Brodin, 2005; Halldorsson, et al., 2009; Guide Jr., 2000; Pal, 2017). In addition, fashion items carry the characteristics of being highly heterogeneous. Therefore, a standard system to be employed in the remanufacturing process of fashion garments is increasingly challenging. As a result, fashion remanufacturing should be treated separately in terms of remanufacturing business model experimentation (Bocken, et al., 2017).

Dissanayake and Sinha (2015) establish literature about remanufacturing in the context of fashion. They define remanufactured fashion as “fashion clothing that is constructed by using reclaimed fabrics, which can either be post-industrial or post-consumer waste, or a combination of both.” (p. 95). They argue that the quality of the remanufactured clothing is equal or better compared to new fashion items. Literature claims various fashion labels and designers make use of the concept of remanufacturing from textile waste (Gwilt & Rissanen, 2012); yet, it still remains at small-to-medium-sized fashion designers operating with small volumes in niche markets rather than mass markets (Dissanayake & Sinha, 2015; Sinha, et al., 2016). Remanufacturing implies the retrieval and processing of discarded garments, which result in challenges such as implementation of reverse logistics systems (i.e. collection) and development of sorting, disassembly and manufacturing facilities (Ibid). Expanding remanufactured fashion to the mass market increases the potential for greater sustainability; however, it has various implications (Dissanayake & Sinha, 2015; Sinha, et al., 2016), as further outlined in the following paragraphs.

Even though, some firms engaged in fashion remanufacturing are successful in entering and serving the mass market, they face difficulties as well. Sinha et al. (2016) mention the lack of sales volumes and price sensitivity to market as well as “lack of effective marketing strategies for interaction between mass market [...] and the remanufactured [market]” (p. 24).

Commercial success is dependent on meeting efficiencies, speed and quality issues (Dissanayake & Sinha, 2015; Sinha, et al., 2016). Implications in design and manufacturing are related to developing efficiencies in product development in terms of (1) access to raw materials, (2) garment disassembly and (3) cutting operations.

The design of remanufactured garments is highly dependent on the process input, i.e. the characteristics of the raw material/ textile waste. High production volumes of one single design is possible in terms of design and shape; yet, complex in terms of fabric and colour, as it is difficult to obtain large volumes of similar raw materials. The variability in colour and shape of obtained waste material influences both disassembly and cutting. Disassembly, if necessary, takes place prior to redesign and is both time-consuming, labour-intensive and expensive (Dissanayake & Sinha, 2015; Sinha, et al., 2016). According to Guide Jr. (2000), this may impact the remanufacturing process and hence, requires proper coordination. Products, not specifically designed for disassembly, may result in less recovered components and more (unusable) waste, while causing increased disassembling time (Ibid). Unforeseen difficulties in disassembly and unstable disassembling times, in turn, create uncertainty: Recovered parts from two similar cores, i.e. the input material, can very much differ depending on the disassembling process and the conditions of the core (Guide Jr., 2000). Cutting is done manually, which results in higher (cutting) costs compared to traditional garment production. Further, cutting operations and design creation require more skills than conventional manufacturing and design; hence, designers' creativity in remanufacturing is key (Sinha, et al., 2016).

Based on a number of case studies of different fashion companies engaged in remanufacturing, Sinha et al. (2016) state the following implications related to the adaption of remanufacturing to the mass market. (1) Process input (raw materials), (2) cutting operations, (3) garment assembly, (4) quality standards and (5) distribution and retailing.

Both process input/ raw material and cutting operations are elaborated earlier on and are not repeated, as the mentioned arguments for both implications similarly apply in this context. As for garment assembly the progressive bundle system (employed in mass production), in which the production is broken down into sub-operations, is not suitable for remanufacturing due to variations in colour and fabric type; rather one operator is responsible for the (re-) assembly of an entire garment (Dissanayake & Sinha, 2015). This requires a highly skilled workforce and more time due to inefficiencies and therefore, makes the process significantly more cost intensive. Contrary to mass production, quality standards to test the final product are missing in remanufacturing. Quality is maintained throughout the workstations, as one operator is considered to be the customer of the previous operator satisfying his/ her 'customer'. Yet, as "quality is a key factor for the mass market" (Sinha, et al., 2016, p. 26) the inspection must be standardized. Considering distribution and retailing of remanufactured garments, the high selling price (resulting from the fact that bulk production cannot take place) as well as the fact that design cannot be standardized, as explained earlier, remanufacturing faces challenges in reaching "high street". The non-standardized garments/ collections may pose high risks for retailers; however, the commitment of large and mainstream retailers is decisive for, and a way to approach the mass market (Dissanayake & Sinha, 2015; Sinha, et al., 2016).

Accordingly, Sinha et al. (2016) talk about the fashion system, consisting of a set of subsystems and implications for the fashion industry from a systems perspective. These implications are related to (1) networking approaches and (2) international trade in remanufactured fashion.

Developing collaborative networks can support to overcome the burden of availability of technology and access to raw material. Expensive technology can be co-owned or shared within the network, while production return networks and reverse supply chain networks facilitate raw materials acquisition (Ibid). According to Michaud and Llerena (2011) contractual incentives between manufacturer and retailer achieve higher collection rates. As for international trade, there are insufficient legal frameworks as “[t]here is no universally accepted definition of remanufacturing” (All-Party Parliamentary Sustainable Resource Group, 2014, p. 1). A current issue is the fact that brand labels and receipts serve as warranty for consumers in national trade (Sinha, et al., 2016). The authors raise the question whether international trade for remanufactured fashion is necessary (considering sustainable fashion consumption as mentioned by Fletcher (2012)) and – if so – which type of warranty should be developed for trading remanufactured fashion both nationally and internationally. Eco-labels, currently not yet identified for remanufactured fashion, are mentioned as one possible certification to support international trade (Sinha, et al., 2016). Another issue raised is business development and which direction would be appropriate for a remanufactured business model (ibid).

Sinha et al. (2016) further state distinct characteristics of the fashion industry, which simultaneously depict both barriers and opportunities for firms engaged in fashion remanufacturing, namely (1) costs, (2) time, (3) (global) production networks and (4) importance of design, branding and marketing.

In order to maximize profits, the industry aims at lowering costs and time (Sinha, et al., 2016). As for remanufacturing, it is, however, difficult to have costs equally to mass manufacturing because of the difficulties to achieve (high) volume production. Consequently, a competition with the mass market on neither costs nor volume is possible. Yet, remanufacturing enables to develop collections in a short time frame and thus, offers the opportunity to compete on the basis of time. Regarding production networks, Caro and Martínez-de-Albéniz (2015) state that fast fashion produces small batches within short lead times, relying on near-shore production in developed countries. For remanufacturing, this depicts another opportunity as home manufacturing – even if possibly more expensive – in turn, lowers transportation costs and eliminates both customs and possible communication issues. As for the importance of design, branding and marketing, suppliers can use their capabilities to gain competitive advantage (Sinha, et al., 2016). Caro and Martínez-de-Albéniz (2015) further describe design and marketing as strategic tools in fast fashion, as design is used to promote modernity. On the contrary, firms engaging in remanufactured fashion can make use of their design to “declare their design vision and individuality” (Sinha, et al., 2016, p. 57).

### 3 Theoretical framework

*The following chapter takes the prior review of the general theory existing in this field into account and builds the foundation for a theoretical framework. This emergent framework serves as a lens of analysis for the subsequent data exploration.*

#### 3.1 Experimenting with business models – a process-based view

Chang et al. (2012) define experimentation – an aspect of business model innovation – as a process “to probe, experiment, test and commercialise radical ideas and concepts” (p. 445). Van den Ven (1992) clarifies that a process falls into one of three categories, which are “(1) a logic that explains a causal relationship between independent and dependent variables, (2) a category of concepts or variables that refers to actions of individuals or organizations, (3) a sequence of events that describes how things change over time.” (p. 169). Throughout this study, a process-based view is adapted, as it strives to generate an understanding of the process of strategy development and implementation in organizations (Chakravarthy & Doz, 1992). This aligns with the purpose of this study to identify decisive factors of the remanufacturing BME process.

Business model innovation entails revising and adapting the existing way of creating value (Lindner & Williander, 2017), among others through experimentation (McGrath, 2010) and small-scale market launch (Lindner & Williander, 2017). Adapting and developing existing business models is a fundamental approach to leverage innovations, also in regard to sustainability (Evans, et al., 2017). The ability to innovate existing business set-ups is recognized as a necessary business capability regardless of whether it entails minor incremental steps or more radical disruptive innovations (Adams, et al., 2017).

Experimenting with new business models can enable organisations to identify opportunities and build innovative business cases. This further supports to gain the confidence to establish large scale pilots and implement the changes into their existing business model (Chesbrough & Holwell, 1998; Osterwalder, et al., 2014; Kraaijenhagen, et al., 2016). The ability to experiment is found as the most significant innovation capability, as it supports companies to break out of their modus operandi (Chesbrough, 2010). The term business model experimentation refers to testing key hypotheses or assumptions in regard to a potential future business practice through an iterative process (Chesbrough, 2010; Osterwalder, et al., 2014). As a result of experimentation, firms can explore new value opportunities and evaluate the match to their existing practices (Andries, et al., 2013; Weissbrod & Bocken, 2017). However, little research exists to explore how life-extending strategies may be integrated into new business models in order to create social and ecological value.

Bocken et al. (2017) suggest a stepwise approach to business model experimentation as displayed in Figure 2. This process entails six steps that focus on the customer, solution development and rapid learning. Step 1 accounts for generating business model ideas and outlining possible risks and opportunities. This aligns with Hoveskog et al. (2015), who supports that possible solutions and alternatives are generated in an ideation phase. Followed by Step 2, where these business model ideas are clustered into key directions. Throughout Step 3, experiments are conducted to test the ideas, gather data and foster learning. This is further elaborated by Bocken et al. (2018), who highlight that experiments and testing assumptions of the new business model foster learning. This supports decision-making and possibly dropping experiments, which do not deliver expected results (Ries, 2011). In continuation, Step 4 entails further analysis of the experiments and leads towards the refinement of business model ideas.

This notion is further highlighted by Blank (2013), who states that continuous feedback loops are used to revise prior assumptions. Step 5 and 6 entail the piloting and rolling out stages respectively, where key learnings are further gathered through practice and business cases are build (Bocken, et al., 2017). As supported by Osterwalder et al. (2014), a larger scale pilot can be initiated after an initial test phase in order to test the assumptions further.

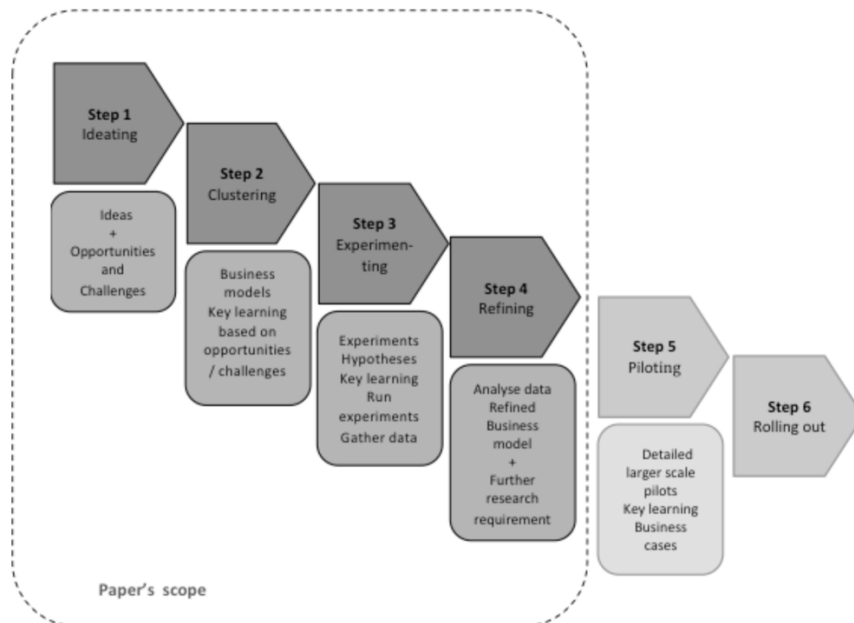


Figure 2 - Stepwise process of business model experimentation as suggested by Bocken et al. (2017)

### 3.2 Value theory and its suitability for business model experimentation

In the realm of BME, value theory is critical. Existing literature demonstrates that the survival of firms in the future is dependent on taking economic as well as environmental and social value into account (Sandberg, et al., 2018; Dyllick & Hockerts, 2002). This is relevant throughout BME, as it creates focus and objectives of the respective experiment.

Valuable resources and capabilities of firms build the basis of competitive advantage (Hart, 1995). Companies must know and understand their internal skills and resources necessary in order to sustain business success (Cox, 1999). This is supported throughout the value theory, as it focusses on identifying valuable assets (Bowman & Ambrosini, 2000). Throughout literature, no universally-valid definition of the term value is provided (Lepak, et al., 2007); this is also the case, because there is a multidimensionality of value (Sandberg, et al., 2018). Bowman and Ambrosini (2000) employ a distinction between use value, i.e. the (subjective) value perceived by the customers, and exchange value, i.e. the monetary price realized at point of sale.

Besides the value itself provided by a company (value proposition), Bowman and Ambrosini (2000) further differentiate between value creation (by organizational members) and value capture, sometimes referred to as value appropriation (Cox, 1999). Value creation takes place inside firms from intervention of organizational members and through activation of resources (Bowman & Ambrosini, 2000). Use value is created, which can realize exchange

value (Ibid). The exchange value may result in profit for the firm (through value capture), unless the resource owner is capable of capturing the exchange value; hence, value capture “is determined by the bargaining relationships between buyers and sellers.” (Bowman & Ambrosini, 2000, p. 9). This is confirmed by Brandenburger and Stuart (1996) as well as Cox (1999).

Business models describe how companies function, i.e. how the organization is built, and how it delivers and captures value (Richardson, 2008). It describes the business strategy and how it is implemented through structure, processes and systems. Various authors contribute to the business model literature to date (Afuah & Tucci, 2001; Amit & Zott, 2001; Chesbrough & Rosenbloom, 2000; Hamel, 2000; Osterwalder & Pigneur, 2010) stating a number of common themes. Yet, their models show great variation (Richardson, 2008). Richardson (2008) proposes a framework “captur[ing] the common themes and many of the elements” (p. 137) from the literature. The author builds upon the theme of value, as this is predominant and recurring in the mentioned literature. The framework consists of three components: (1) Value proposition, (2) value creation and delivery system and (3) value capture, corresponding to the value theory literature stated above. Osterwalder and Pigneur (2010) develop a visual tool to describe business models: Business Model Canvas (BMC) - “[a] shared language for describing, visualizing [and] assessing [...] business models” (p. 12). The BMC is known for its practical relevance and consists of nine building blocks (Ibid).

Figure 3 below combines the essential components of the value theory and Richardson (2008) with the nine building blocks of Osterwalder and Pigneur (2010); hence, based on relevant literature the BMC is converted into an applied version of the theory.

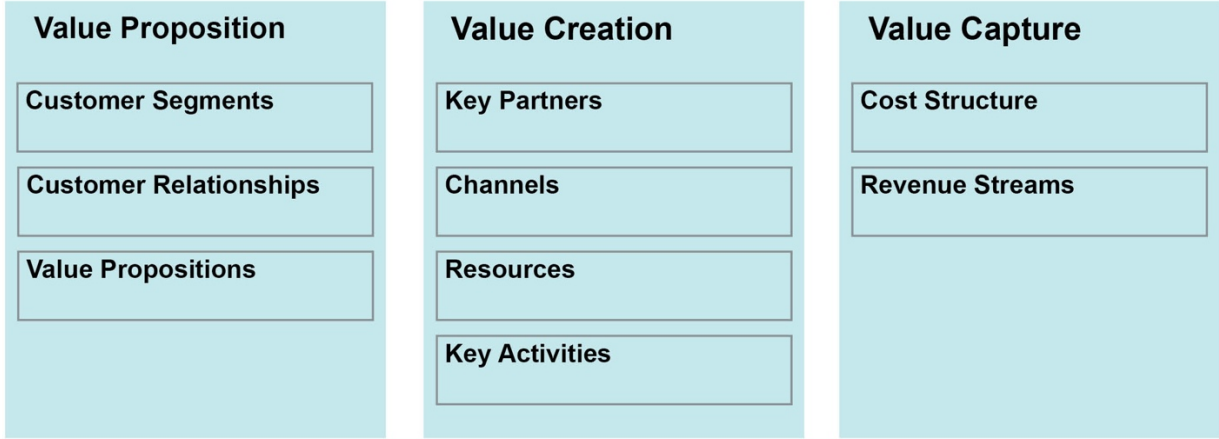


Figure 3 - Business Model Framework combining Osterwalder and Pigneur (2010) and Richardson (2008) borrowed from Nussholz (2017)

Value Proposition is the product or service a company delivers to its customers and thus, contains customer segments, customer relationships and product/ service offer (“value proposition” in Osterwalder and Pigneur (2010)). Value Creation deals with how the value is created and delivered to the customer and therefore, contains key partners, channels, key resources and key activities. Value Capture describes how revenues and profit are generated, containing cost structure and revenue streams (Richardson, 2008).

### 3.3 Combined framework for analysis

For the scope of this research the stepwise approach to business model experimentation (Figure 2) is combined with the business model canvas (Figure 3), as displayed in (Figure 4) below. It builds the theoretical framework for this research, i.e. the lens through which data and empirical findings are reviewed and analysed. The case study is a pilot project; consequently, Step 6 ‘rolling out’, is removed from this framework and disregarded throughout this research.

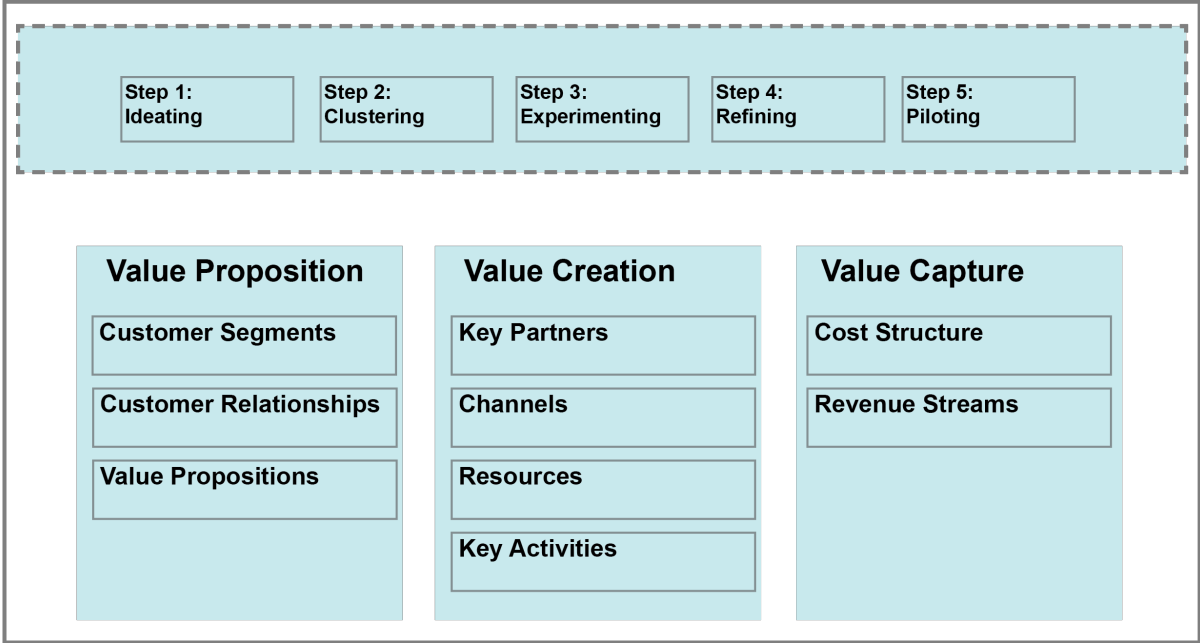


Figure 4 - Combined framework for analysis

The advantage of including the BMC is that it can map out the value creation process of existing and future business models and thereby provide a holistic overview of the operations as well as guidance (Chesbrough, 2010; Osterwalder, et al., 2014; Osterwalder & Pigneur, 2010). Nevertheless, it simply depicts a ‘mapping tool’, which does neither initiate nor capture the experimentation process itself (Ries, 2011). Therefore, the BMC is combined with the stepwise approach as proposed by Bocken et al. (2017). This enables the systematic investigation of the experimentation process behind the development of new business models. Throughout this research, this framework is used to execute the data collection and analysis as stated in the methodology (Chapter 4).

## 4 Methodology

*In the following chapter the methodological approach employed to answer the initial research question of this work is presented including research approach and -strategy. In addition, the case study is presented followed by a more elaborate explanation of the employed data collection methods.*

### 4.1 Research process

This research practices the inductive approach by starting with defining the research topic, i.e. remanufacturing BME in the fashion and textile industry. Hence, defining the topic is the first step that motivates the next steps to approach the subject. The term ‘experimentation’ already implies the intention of discovering something that until this point in time is unknown (Spiegel, 2019). In addition, the inductive approach defines the relationship between theory and research, whereas the former results out of the latter and the phenomenon is examined without prior judgement or expectations (Bryman & Bell, 2015; Edwards & Bagozzi, 2000). This inductive investigation about the research topic leads to emerging propositions and theoretical conclusions (Kovacs & Spens, 2005) in form of decisive factors for remanufacturing BME. This proves the inductive nature of this research, as it is exploratory and does not aim to test a prior hypothesis.

Therefore, to realise this approach, this research establishes a research purpose and question as a second step (Christensen, et al., 2016). As inductive reasoning entails that the problem at hand is examined to understand its cause and how it might be solved, a thorough literature review is conducted in order to understand and describe the phenomena, i.e. business model experimentation and remanufacturing. The literature review is conducted in a systematic manner to increase the quality and reliability of the presented information. The focus is paced on peer-reviewed scientific publications on the subject matter and is critically reviewed and related in order to establish a holistic overview of the state of existing research in the field. From the literature review, a theoretical framework is then derived.

“Furthermore, social scientific exploration is described most accurately as primarily inductive [...]. [...] during exploratory inquire, researchers do think deductively at times, although they do so largely within their emerging theoretical framework [...]

(Given, 2008, p. 327)

The theoretical framework is not a theory itself, but an explanation of how the analysis is conducted and on how the case is analysed to generate a general outcome. This, again, is a typical characteristic of an inductive research approach (Given, 2008). Voss, et al., (2002) suggest that

“[i]n theory building research, no matter how inductive the approach, we need to have a prior view of the general constructs or categories we intend to study, and their relationships. Miles and Huberman (1994) suggest doing this through construction of a conceptual framework that underlies the research.”

(p. 199)

Hence, this suggestion is followed throughout this research through the development of a theoretical framework (Chapter 3). This framework derives as an applied tool from existing theory and is used as a lens for the latter data collection and analysis. Furthermore, the framework is aligned to answer the initial research question in order to close the gap in theory through an exploratory research.

In continuation, data is explored in order to develop theory and understanding on remanufacturing business model experimentation in the fashion and textile industry. The existing information is then deduced in order to generate new findings that are subsequently fed back into the body of existing theory on the topic (Bryman & Bell, 2015). As a result, the inductive approach aligns with the practice of this work and is beneficial, as it allows the development of theory in the emergent field of remanufacturing BME in the context of fashion and textiles.

Field research is conducted in order to collect primary data for analysis. In line with the inductive approach of this work, the qualitative research strategy is applied for the collection of data. A common use of a qualitative research strategy is to observe the phenomenon in its natural setting in order to “make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 2005, p. 3). With that, this research aims to develop a deeper understanding of the phenomenon in its context (Hirschman, 1986; Ellram, 1996) by means of a case study. Hence, the case study serves as a basis upon which new theory is developed inductively (Eisenhardt & Graebner, 2007). The phenomenon of the business model experimentation process adopted to experiment with the business model by means of remanufacturing depicts the focus of this study and thereby the unit of analysis (DeCarlo, 2018; Khan, 2014).

Qualitative research examines the dynamics of social life by focusing on the process of interactions through multiple feedback loops (Golicic & Davis, 2012). This research follows this notion by investigating the perspectives of the different individual members involved in the studied phenomenon. Hence, these individuals depict the unit of observation for this study (Lavrakas, 2008). Literature outlines that supply chain related phenomena are particularly complex and developing new theory through multiple research approaches is required in order to gain a better understanding of the phenomena (Frankel, et al., 2005; Mangan, et al., 2004). Therefore, this study conducts a two-stage sequential interview process. An open-ended templated interview serves to identify key aspects related to the case, followed by semi-structured interviews to seek deeper explanation. While the data is collected sequentially, the findings are interpreted concurrently (Golicic & Davis, 2012). Choosing this two-staged sequential process aligns with the inductive nature of this work and gives way to exploratory results with the aim of theory development. The advantage of this process is to gain a more comprehensive understanding of the phenomenon as well as accessing information that may have been inaccessible within a one-step method (Morse, 2010). The result of this study is theory on remanufacturing business model experimentation in the fashion and textile industry, that feeds into the body of existing knowledge in this field.

## **4.2 Case study**

The research is based on an in-depth (single) case study of the phenomenon of remanufacturing business model experimentation within the brand of Cheap Monday. The project is found as part of the Re:workwear initiative, in order to understand the experimentation process (in particular remanufacturing) to innovate the business model for circularity. The research focuses

on the different stages in the remanufacturing BME process (Bocken, et al., 2017) in line with the BMC (see Theoretical Framework in Chapter 3) and explores the processes and learnings in each stage. The brand Cheap Monday is already familiar to the Re:workwear project team through previous collaborations and current research programs. This provides easy access to information and facilitates knowledge about remanufacturing BME. Thus, the Cheap Monday project depicts a retrospective case study. Resulting from this, the research takes place post-project; thus, there is no active participation of the researchers.

Inductive case study depicts a powerful research method in developing new theories and ideas (Voss, et al., 2002) in a premise where theory is missing (Eisenhardt, 1989; Ketokivi & Choi, 2014), i.e. remanufacturing BME. It exposes the observer to phenomena in real life contexts, resulting in findings, ideas and theory developed in close contact with the case, rather than from a distant perspective (Voss, et al., 2002). It thereby provides practical relevance, whilst retaining academic accuracy (McManners, 2016).

A case study can include various data collection methods, such as interviews, questionnaires, observations and content analysis of documents (Voss, et al., 2002). Within this research, primary data is collected through structured interviews (questionnaires) and follow-up, semi-structured interviews with various members of the Cheap Monday pilot project. According to Voss et al. (2002) “case study research has been used [...] in order to test complicated issues such as strategy implementation” (p. 198), as confirmed by various researchers (Pagell & Krause, 1999; Boyer & McDermott, 1999; McLachlin, 1997). Hence, it is suitable for this research, as it focusses on business model experimentation and remanufacturing.

#### **4.2.1 Re:workwear**

Re:textile (n.d.) is a research project within the Science Park Borås at the University of Borås. It is run in cooperation with various organizations, companies and entrepreneurs in Sweden. Re:textile works with research and innovation; its purpose is to provide insight and knowledge about circularity within the fashion and textile industry. One important part is to evaluate conditions for new, circular business models in terms of economic and practical conditions. Re:textile (n.d.) consists of three major divisions: (1) Conditional Design, (2) Service Innovation and (3) Re-design manufacturing. Among others, the project produces and tests circular products on the market. The sub-project Re:workwear investigates the remanufacturing of discarded workwear for the company Cheap Monday (Zethraeus, 2018). It researches how discarded garments from one industry can be used as raw materials for the production of new, high quality products in another industry. As for the Cheap Monday pilot (Re:workwear), the supply chain involved different companies (Figure 5). The remanufactured collection is introduced alongside Cheap Monday’s common collections and thus, does not replace the brand’s current business model at hand, but extends it in form of remanufacturing BME (Ibid).

The project is initiated by Re:textile and the brand Cheap Monday. While Re:textile provides process support throughout the entire project, Cheap Monday is responsible for the design direction. The original pieces to manufacture the Re:workwear collection are provided by Berendsen Workwear. This company works with rental and maintenance of workwear for different industries. The original pieces are treated differently, ranging from re-furbishing, re-dyeing, re-branding, re-cutting and re-sewing and eventually re-constructing, depending on their degree of damage.

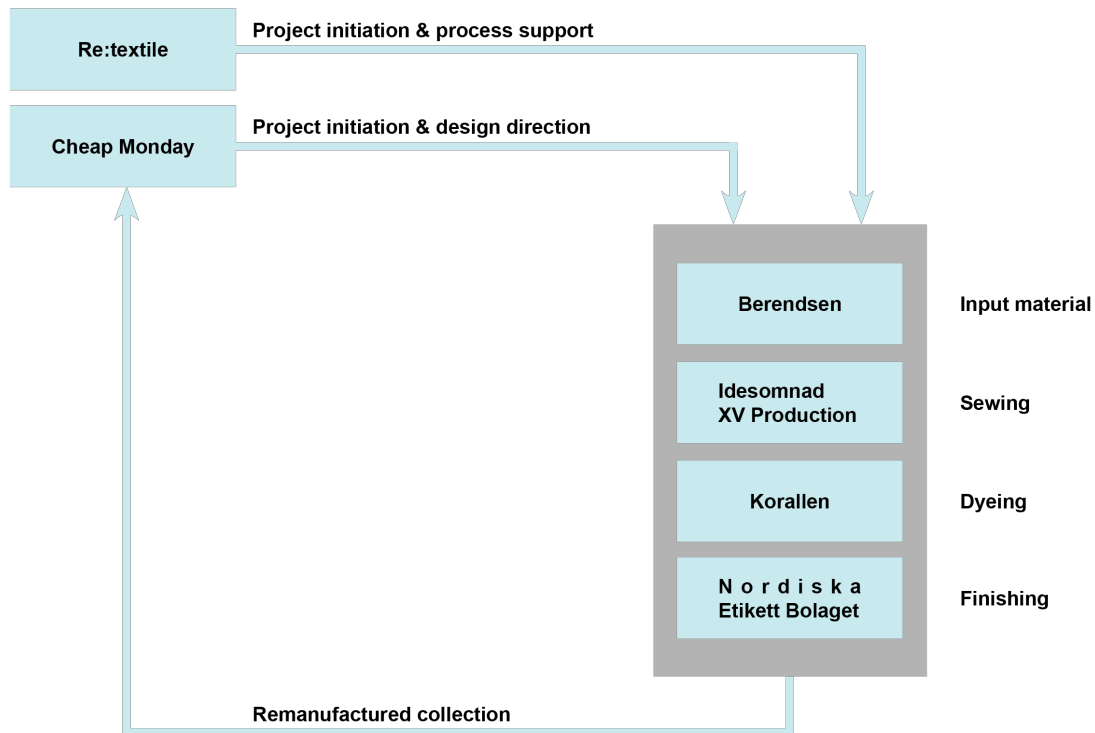


Figure 5 - Supply chain of the remanufacturing business model experimentation for Cheap Monday

Selected pieces are re-cut, -sewn and -constructed at Idésömnad as well as XV production, sewing studios in Borås. They are dyed at Korallen AB, a garment dyeing company in Borås and Kinnarumma, and are re-branded and finished at Nordiska Etikettbolaget a company for branding and labelling, specialised in transfer printing, embroidery and woven labels in Borås. The collection is then sold at a selected number of retail stores under the brand name of Cheap Monday.

### 4.3 Remanufacturing BME

In this case study research, a two-stage sequential interview process is employed for data collection. The first stage consists of an online, template-based, open-ended questionnaire, i.e. a structured interview (Ellram, 1996). The second stage consists of a semi-structured interview executed in person or via video conference. The questionnaire provides data on general experiences and insights and defines the content of the follow-up, semi-structured interviews, while these provide a deep dive into most relevant answers and statements of the questionnaire of each respondent and enrich the findings.

Alvesson (2003) claims that interviews are an effective way in qualitative research to gain knowledge of individuals and organizations. Bryman and Bell (2015) recommend semi-structured interviews with (open) questions that enable the respondents to answer freely as well as enable the interviewer to ask follow-up questions in order to probe and receive useful information and insights. Considering that each respondent is employed at a different company with a different way of working, yet being part of the Re:workwear project, semi-structured interviews seem to be especially appropriate for this research.

### 4.3.1 Data Collection

The questionnaire starts with an introduction letter serving as preparation for the questions (Ellram, 1996). The questions are based on the BMC and the stepwise approach proposed by Bocken et al. (2017) as it is stated in the theoretical framework in Chapter 3. The structure of follows the value theory of value proposition, value creation and value capture, while the individual questions are based on the nine building blocks of the BMC with the aim of mapping out the process as it is (Ries, 2011; Short, et al., 2012). Participants are asked with regard to the particular phenomenon (Ellram, 1996) and hence, describe the remanufacturing BME from different kinds of viewpoints. The questionnaire is designed with the aid of the software Sunet Survey (programme name: Survey&Report) provided by University of Borås and can be found in Appendix 1.

Based on Bryman and Bell (2015), an interview guide including subjects to be covered and questions to be asked, is created (Appendix 2) prior to the semi-structured interview execution. This guide is based on the preceding questionnaire; however, the questions asked follow the stepwise approach of Bocken et al. (2017) with the aim of exploring the BME. It comprises open questions to gain a deeper understanding into relevant answers from the template-based interviews. Based on the organization and the respondent, the guide is slightly modified (Ellram, 1996) during the interviews. All interviews are performed between April 17, 2019 and May 17, 2019, either via video conference or in person, and typically last around 30 minutes ( $\pm 15$  minutes). In order to ensure accurate reproduction of each respondent's answers, the interviews are recorded, in consent with the respondents. The recording provides "accurate rendition of what has been said" (Voss, et al., 2002, p. 209) and enables the interviewer to pay close attention to each answer (rather than taking notes). This increases the possibility (for both the interviewer and respondent) to adapt and/ or get side-tracked, if necessary. Despite the recording, previous responses need to be kept in mind when asking further questions (Voss, et al., 2002) in order to increase effectiveness of this method.

### 4.3.2 Data Analysis

Subsequent to the semi-structured interview execution, the recordings are transcribed and coded according to the coding scheme by Strauss and Corbin (1990), including open, axial and selective coding. This coding scheme is in line with grounded theory, further proving the inductive nature of this study. Open coding is an iterative process, breaking down, contrasting and categorizing the data in order to compare similarities and differences (Ellram, 1996). For this, significant and noteworthy statements throughout the transcripts of each respondent are highlighted and assigned a certain code, i.e. a word or a short sentence of the content/ meaning of the statement. Axial coding begins to develop greater insight into the data (Strauss & Corbin, 1990) by making preliminary connections among the codes resulting from open coding (Ellram, 1996) through grouping and summarizing the codes into themes (Miles & Huberman, 1994). Hence, all codes from the open coding of the transcripts are sorted and grouped in different categories, i.e. umbrella terms gathering all corresponding codes. The categories in this research are adapted to the theoretical framework and reflect the process steps of BME suggested by Bocken et al. (2017). Appendix 3 presents example extracts of the open coding as well as representative summaries of axial and selective coding (Table 7 and Table 8 respectively). Open and axial coding is executed iterative and alternating, rather than sequential (Ellram, 1996). Selective coding "integrate[s] the theory in a cohesive whole" (Ellram, 1996, p. 107) by selecting one central category and relating it to the remaining categories in order to validate and further develop the categories (Strauss & Corbin, 1990) and theories. In this research, the

selective coding further relates and groups the different codes within each category and summarizes them in decisive key statements. Throughout the empirical findings, quotations from the semi-structured interviews are used to elaborate the findings. As these interviews are conducted verbally, the quotations are slightly altered in order to correct minor grammar mistakes. This is done in order to enable a less disruptive flow for the reader. At no point in time the meaning is altered in any way. Subsequently, the results of the interview procedures are examined in light of the literature (Ellram, 1996).

### 4.3.3 Selection of respondents

Based on the Re:workwear project, involved companies throughout the supply chain (Figure 5) are selected. Potential respondents within these companies are selected based on the fact that they are considered to be experts due to their assumed knowledge and competence (Dreijack & Niederberger, 2018) in order to get the best possible results and valuable insights. They are chosen deliberately in order to investigate the subject of study from different perspectives and to ensure to represent various relevant positions, opinions and institutions. Furthermore, they are selected, as they are the recommended candidates by the project lead of Re:textile (Respondent 1/ Respondent 8), due to their active and physical engagement in the experiment. In addition, each respondent represents the key project manager in the respective company with regard to the Re:workwear project. Each participating company of the project is interviewed, despite Berendsen who is not willing to participate.

The respondents are contacted via E-Mail or phone (Table 1). Subsequently, each participant is provided an URL to the online, template-based interview via E-Mail including the GDPR agreement (Appendix 1). The confirmation of the GDPR agreement is the precondition to enter the questionnaire and participate in the follow-up, semi-structured interviews. Therefore, no additional, physical signatures of the respondents are collected.

After the interviews of Respondent 1 to 7, Respondent 1 is approached again for an additional interview (Respondent 8). The aim of this interview is to review the of the overall case study and empirical findings by an important key informant (Ellram, 1996). Respondent 8 can be considered a key informant due to the position of project initiator and project lead.

*Table 1 - Interview respondents*

<b>Respondent</b>	<b>Company</b>	<b>Position</b>	<b>Intext code</b>
1	Re:textile	Project lead	Respondent 1
2	Cheap Monday	Design/ Creative Direction	Respondent 2
3	Consultant	-	Respondent 3
4	Idésömnad	Seamstress	Respondent 4
5	Nordiska Etikettbolaget	Higher Management	Respondent 5
6	XV Production	Seamstress	Respondent 6
7	Korallen	Higher Management	Respondent 7
8	Re:textile	Project lead	Respondent 8

## 4.4 Quality of the research

This research is based on a single case study, which limits the generalisability of results and conclusions (Voss, et al., 2002). Nevertheless, the outcome is valuable in the process of knowledge accumulation in the respective field (Flyvbjerg, 2006). Further, the fact that the case

is studied retrospectively may result in difficulties, as “participants may not recall important events” (Voss, et al., 2002, p. 202) and the recollection and interpretation may be biased, both consciously and unconsciously (Frankelius, 2015). Through the application of the theoretical framework (Chapter 3) during data collection and -analysis, as well as seeking multiple viewpoints by interviewing various involved parties (individuals), the subjectivity and bias of informants is countered (Voss, et al., 2002).

A well-designed research protocol enhances the reliability and validity of case research data (Voss, et al., 2002; Ellram, 1996). Interviews are therefore based on schedules and guides, including a predetermined set of questions to be asked (Appendix 1 and 2). Hence, validity is increased, as it is ensured that all parts necessary to gather the relevant data, are covered. Further, the respondents are carefully chosen based on their involvement in the phenomenon and their participation in the related project. During the interviews, questions are explained, if needed, and technical terms defined in order to facilitate similar understanding and interpretation of the questions by all respondents (Ruane, 2006). Validity is further supported by (1) having a key informant review the study and (2) investigator triangulation (Ellram, 1996; Denzin, 1970). This triangulation fosters an increase of the research quality (Voss, et al., 2002; Archibald, 2016; Denzin, 1970). Reliability is enhanced, as similar questions are asked to a number of people involved in the phenomenon (Voss, et al., 2002). Semi-structured interviews that go beyond formal, structured interviews facilitate to collect valuable data; in-depth discussions with respondents ensure consistent results, as similar topics were treated multiple times.

Concluding, the case study itself as well as the investigator triangulation provides a way to understand the phenomenon (Bryman & Bell, 2015; Voss, et al., 2002) based on multiple researchers engaged in the data collection and analysis process (investigator triangulation). Thus, the reliability of the data gathered is enhanced (Voss, et al., 2002). Results and findings are conclusively reviewed against existing literature in order to “increase[] both the quality and the validity of the findings” (Voss, et al., 2002, p. 217).

# 5 Empirical findings

The following chapter summarizes the findings derived from the data collection in a structured manner. All findings are stated objectively with no further evaluation or interpretation.

The structured self-completion questionnaire is completed prior to the following semi-structured interviews. The purpose of these initial questionnaires is first and foremost to develop an understanding of each participating party’s value proposition, value creation and value capture operations. This serves to map out the background and roles of each partner in order to facilitate a holistic understanding of the project. Figure 6 below visualizes the BMC of the Re:workwear project, summarizing these findings into one consistent project overview. It displays the three value dimensions including the nine building blocks of the BMC. Further, the questionnaire is used to screen key topics in order to identify key subjects and question to be covered and deep-dived in the subsequent semi-structured interviews (Appendix 2). Please refer to Table 2 to Table 6 for anonymized answers.

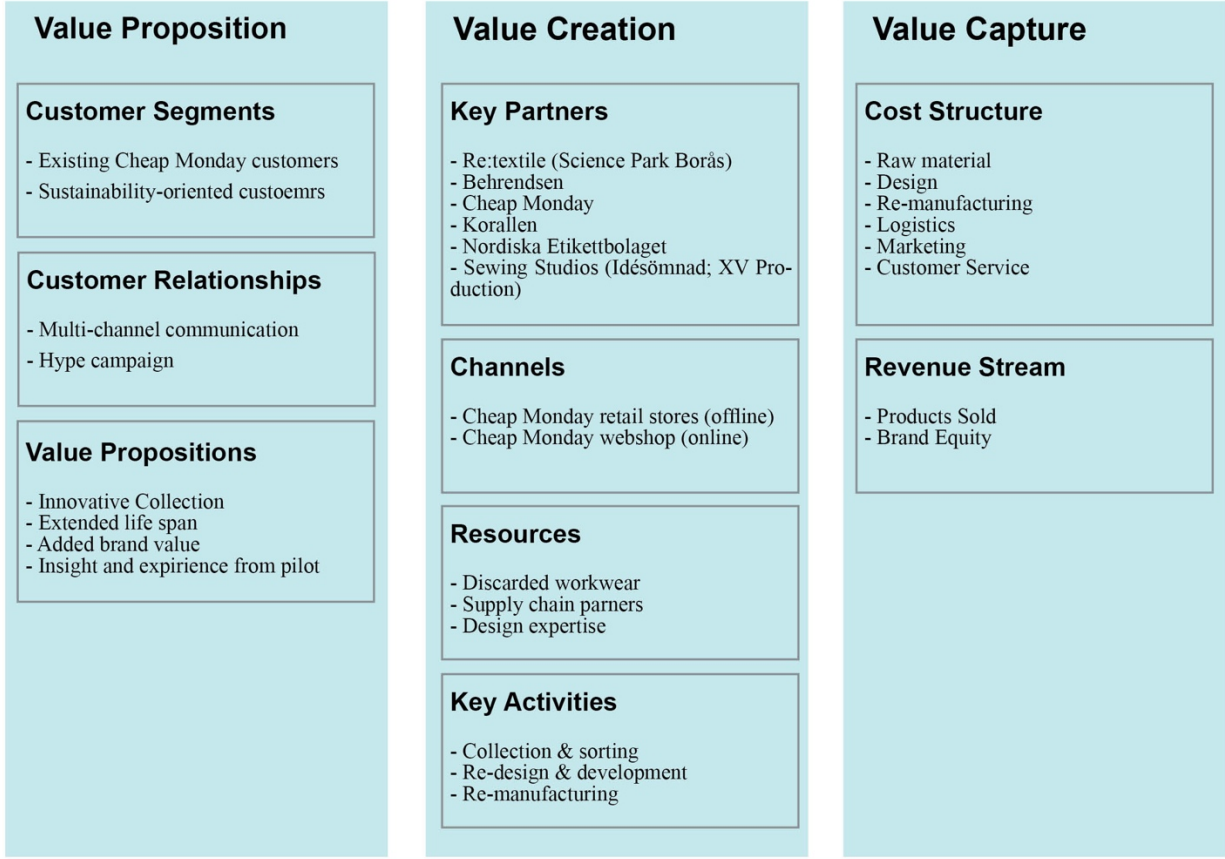


Figure 6 - Business Model Canvas of Re:workwear

The presentation of the findings resulting from the semi-structured interviews is structured along the steps of the stepwise approach of BME suggested by Bocken et al. (2017). As stated in Chapter 3.3, step 6 is disregarded, as this phase is not part of the Re:workwear project. Scaling up of the pilot did not take place yet. To date, this project remained a one-time pilot. Figure 7 demonstrates the connection between the ideation phase of business model experimentation and the related building blocks of the BMC through colour coding. Value

proposition as well as value creation depict decisive factors throughout the ideation phase. In the following sections, these findings are described in more detail.

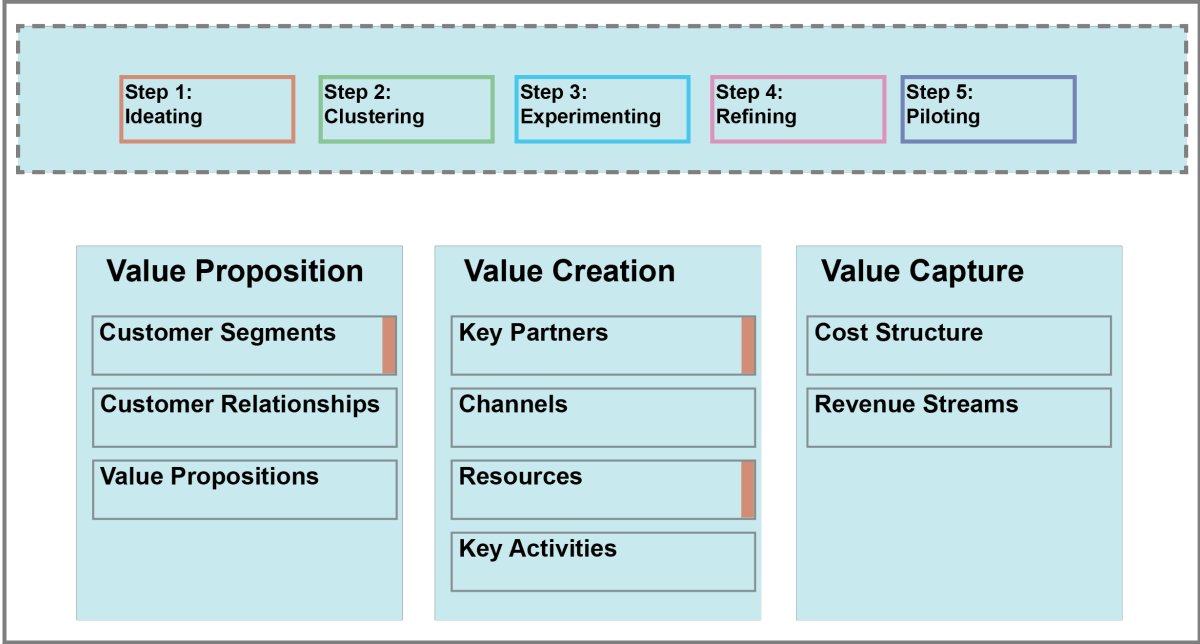


Figure 7 - Visualised results using the earlier proposed theoretical framework (Example for step 1: Ideation phase).

Connecting the results from each BME step to the building blocks of the BMC results in Figure 8 below. It visualises which part of the BMC is addressed at each stage of the remanufacturing BME of Cheap Monday by using colour coding.

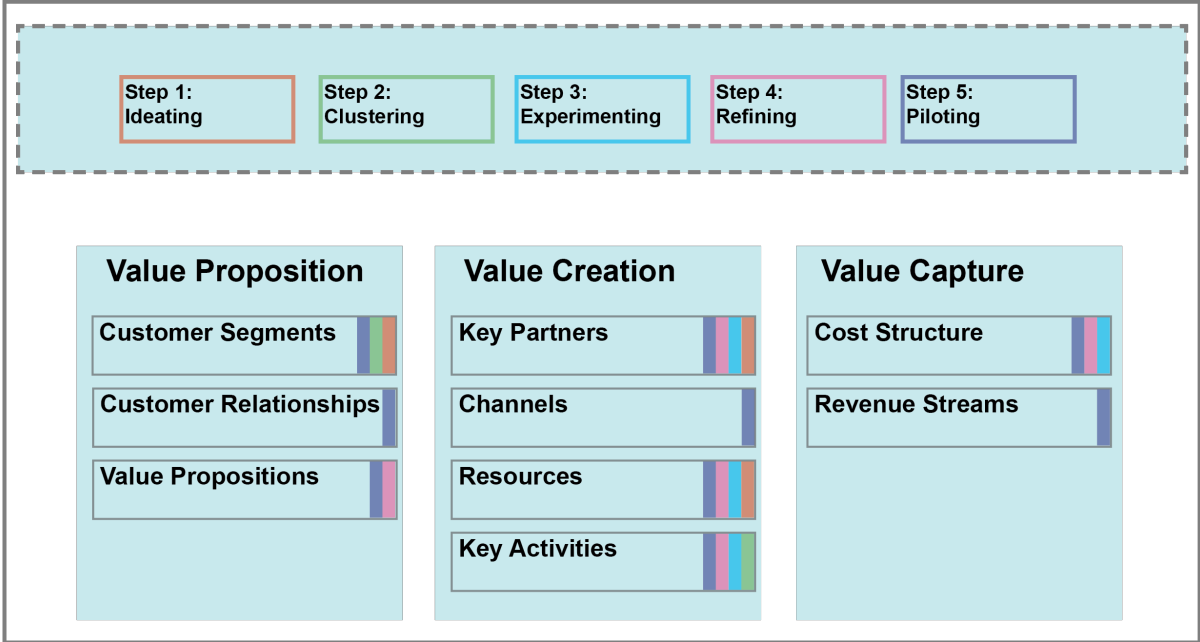


Figure 8 - Visualized results throughout entire remanufacturing BME process, using the earlier proposed theoretical framework.

## 5.1 Ideation

The Re:workwear project is initiated with the idea to experiment with sustainability in fashion by establishing a new business model besides the existing one. The aim is to find new ways of doing sustainable business in order to develop a competitive advantage. This is further highlighted throughout the interviews as one respondent states:

“Within the brand of Cheap Monday we launched this sustainability initiative, piloting project. That was mainly because we felt that we wanted to experiment more with the sustainability side of fashion. We wanted to be more agile [...]”

(Respondent 2, 2019)

Thus, it is evident that enhancing sustainability in value creation and proposition is the motivation for remanufacturing BME. (Statement 1)

Respondent 2 (2019) states that access to the right input material is often limited due to the required material characteristics for fashion and apparel remanufacturing. It is evident that the input material should be large volumes of high quality homogenic materials. The Re:workwear project is initiated through the availability of large volumes of the same workwear products that are identified as well suited for remanufacturing. For example, it is stated:

“We found a source of garments that we could find in a large scale that has been used and had a very nice patina. So, I think that [material] in itself was interesting enough.”

(Respondent 2, 2019)

Initially, a key advantage of this workwear is the potential of input material information and tractability as the pieces are ID-chipped. As one respondent explains:

“[...] all of these garments have ID chips in them, so that you can trace them. [...] [E]verything is tagged, and that goes into a system, which means that from that information from each garment you can find out when it gets out of the loop. You can get a lot of information about the garment: who has worn it, what were they working with, how many times has it been washed, where has it been around Sweden, like a lot of very interesting storytelling.”

(Respondent 2, 2019)

Resulting from this, it is apparent that input material as the key resource is the starting point to develop remanufacturing BME ideas. (Statement 2)

The key set up of the project is based on the local availability of a remanufacturing infrastructure, as stated by respondent 8 (2019). Throughout the ideation phase knowledge partners and service providers share their previous experiences and work together to develop an initial idea of the project. For example, it is remarked:

“So the designer was very easy to work with [...], we discussed actually together [...]. So, he came with the ideas and then we could discuss things and we actually did it together.”

(Respondent 3, 2019)

The ideas are developed throughout continuous discussions and collaborations between the different partners. This process is further driven by the flexibility of the partners in terms of timeline and production planning. Hence, it is obvious that one enabling factor for value creation is the collaboration between different key partners. (Statement 3)

The development of initial ideas focuses to serve the existing consumer of Cheap Monday, as stated by respondent 2 (2019) who emphasizes the focus on the customers' interest throughout the ideation phase. The remanufactured product line is not developed to attract a new consumer. Instead, the existing consumer should be further attracted to the brand through sharpening the brand's profile and identity (Respondent 2, 2019). As a result, the existing customer segment is the main focus point throughout the ideating phase. (Statement 4)

## 5.2 Clustering

The final idea of the Re:workwear project is developed based on continuous discussion between the different participating partners, as especially emphasized by respondent 3 (2019). This communication further results in knowledge sharing (education) on re-manufacturing practices as well as a more detailed project plan. In addition, respondent 2 (2019) particularly highlights that decisions are made in order to deliver a clear message to the consumer as well as educating the consumer in regards of responsibility practices of Cheap Monday. Therefore, decision-making regarding key activities is rooted in communication with key partners and customer segments. (Statement 5)

Re:textile as the initiator of the project maintains a close relationship with all partners of the supply chain throughout the project. Most parties involved are already familiar with each other prior, whereas their geographic proximity is found as an advantage. For the Re:workwear project participating parties are selected based on their local proximity, expertise and capabilities. An additional selection factor is the local availability of materials and trim as well as the ability of participating parties to work with small quantities, as especially supported by respondent 6 (2019). Henceforth, project key activities are based on the close collaboration with local production key partners. (Statement 6)

Throughout the clustering stage of the business model experiment, the creative vision of Cheap Monday for the remanufactured collection is a key aspect for decision making. The collection has the purpose to send a clear message, which is why product design is key. Workwear in general is a fashion trend at the point of time of the project which makes it suitable from a concept (aesthetic) point of view.

“We have found a source of very nice garments, which normally are very influential to what we do, because workwear is a part of the design brief all the time. [...] And then we discussed the potential of the project and we felt the whole workwear thing was really happening, also fashion-wise. So that's super on point. For us it was a really, natural strong idea.”

(Respondent 2, 2019)

Having designs and tech packs ready from an early stage allows to calculate the costs for the re-manufactured pieces backwards after initial design, as explained by respondent 3 (2019). Thus, it is evident, product specifications play a leading role in the value creation process. (Statement 7)

Decisions regarding the remanufacturing supply chain are based on a number of performance aspects. The responsibilities related to the product flow are delegated between the different participating parties. As respondent 3 (2019) elaborates:

“ (...) we know who should do what and then we somehow make the flow. One company should always take away things, another one should add things, and then we have the dyeing process and then packing and keeping [them] in the warehouse until everything was ready”

(Respondent 3, 2019)

Furthermore, the certainty of delivery is ensured as far as possible and speed-/ time-efficiencies are planned. One particular example includes that the decoration process is similar to the one of new garments and therefore can be executed in a reliable manner. This is enforced by respondent 5, who is responsible for labelling (2019):

“[...] because for us it's like a normal order. It does not matter if it's a new production or a remanufacturing. It is the same. Our work is the same.”

(Respondent 5, 2019)

In addition, the scalability of the project and thereby the economic side is kept in mind during this development phase. Resulting from the points above, it becomes obvious that operational capabilities are crucial in the value creation process for setting up remanufacturing BME. (Statement 8)

Prior to the pilot launch the scope and intentions of the project are defined in terms of 'sustainability'. The aim is to keep the existing business model of Cheap Monday as usual whilst experimenting with remanufacturing by developing a small-scale pilot project. For example, respondent 2 (2019) outlines:

“I think that we wanted to focus on one thing in particular. [...] I think it comes back again to the scalability side of it. [...] I mean it's an experiment, the whole thing was an experiment, so we had to try and just solve all the problems as they show up. We had an idea in the beginning, and we sort of followed the idea.”

(Respondent 2, 2019)

This project is the first step to initiate positive change towards sustainability by realising the opportunity to create value from waste. Remanufacturing is found to be a better alternative to common production processes in terms of costs and the environment. Already small changes

of the used pieces can give the garments a new life. This notion is for example supported by respondent 6 (2019) who states:

“But to make just small changes in putting on different branding [...] you can change the value of the clothes. Before it was trash and then it’s like super expensive. [...] [A]nd that’s the interesting part in it: How you can just put another brand or make a few changes and give the pieces a new life.”

(Respondent 6, 2019)

Hence, it is evident that scope and value propositions in regard to ‘sustainability’ are defined in advance. (Statement 9)

### 5.3 Experimentation

Throughout the initial test phase, revisions are made as part of the learning process. This is supported through close collaboration and the sharing of knowledge along partners. These adjustments are conducted in relation to setting-up the teams and timelines as well as increasing the efficiency of the workflow. The geographical distance of the designer/ the brand Cheap Monday is outlined as a main challenge as one respondent states that:

“[...] there was a designer in Stockholm who developed and redesigned the products and then we just got instructions. [...] We [...] were not working closely with him so that was kind of hard. So, we learned that we really need to have a close discussion and a close communication with the designer, it’s really important.”

(Respondent 6, 2019)

Thus, it is found that continuous collaboration between key partners is a necessity throughout the first test phase. (Statement 10)

First try-outs uncover that the set-up of the experiment is challenged by the uncertain availability of input material. Further, challenges pose the time-consuming and labour-intensive sorting process. This issue is repetitively highlighted by respondent 2 (2019) and respondent 6 (2019). Another respondent further elaborates:

“[...] you don’t know what is out, because it’s garbage. So, they just throw it away. So we were digging and finding by hand.”

(Respondent 3, 2019)

In addition, the uniqueness of remanufacturing prevents the development and integration of a universal system (Respondent 3, 2019; Respondent 6, 2019). This is further highlighted:

“There is potential of scaling up. If we could have systems, they can help us to ensure volumes in the right quality. But these systems are missing, or they are not there, or they are not functioning. They are not built to do this. The taking-up system for when [the garments] are discarded. [The garments] are no longer treated as something they can create value from. If the systems were

there, we could overcome these delays [...]. We could have more routines around it. It is evident that, if the systems were in place, there is scaling up potential both from processes and the input material perspective. [...]"

(Respondent 8, 2019)

Consequently, the nature of key resources and activities in particular input material and re-manufacturing form major challenges. (Statement 11)

By running pre-pilot tests unexpected time- and cost inefficiencies are uncovered including, for example, the removal of trims and labels, as explained by respondent 4 (2019). Hence, first process try-outs and sampling uncover value capture (cost structure) inefficiencies. (Statement 12)

Prior to the pilot launch, product samples are developed for pre-production approval by Cheap Monday and to test the sewing process. As one respondent explains:

"Yes, it was like the try-out samples. [...] Before we set a final design, we made a few samples and [...] also worked together with stitching studios [...] to make sure that [...] it worked. Like that the given instructions are understood and worked. [...] We had a few samples in the office but not many. It was maybe one round or two [sampling] rounds, back and forth"

(Respondent 2, 2019)

This is confirmed by other interviewees, stating that some ideas were shown in form of physical samples (Respondent 5, 2019). During this sample production, emerging problems appeared which required a trial-and-error and a learn and adjust approach (Respondent 2, 2019). The pricing of the collection is further based on the insights gained throughout the testing phase. Thus, product sampling requires a trial-and-error mindset and the ability to re-think and adjust the value creation process. (Statement 13)

## 5.4 Refining

Initially, it is planned that the workwear used as material-input should keep its existing branding in order to highlight its previous life. This plan is revised after the initial test-run as legal issues emerged, which prohibited the use of previous branding. In addition, integrity issues arise related to the information stored on the ID-chip attached to the input-material. Hence, both original branding and the ID-chips are removed from the input material as a refinement resulting from the initial try-outs. These issues are particularly outlined by one respondent who states:

"[...] we had a lot of legal discussions when it comes to corporation names on sweatshirts that we couldn't use, that we thought we could use. And at one point we thought that we could print over logos and that was something we wanted to do, to kind of keep the trace of the old [garment] and then add something on top. But we couldn't, so that was a long legal discussion. [...] All of these garments have ID chips in them, so that you can trace them. [...] So, everything is tagged, and that goes into a system, which means that from that information from each garment you can find out when it gets out of the

loop. You can get a lot of information about the garment: who has worn it, what were they working with, how many times has it been washed, where has it been around Sweden, like a lot of very interesting storytelling.”

(Respondent 2, 2019)

Therefore, it is evident that, emergent legal and ethical issues are refined in regard to key resources. (Statement 14)

The initial test run uncovers that pre-sorting of the input material is required in order to save time throughout the remanufacturing process (Respondent 6, 2019). In continuation, the sorting process proceeds to emerge as a significant challenge. In addition, it is uncovered that the blended input material makes common dyeing processes unsuitable and new dyeing capabilities are developed to counter this issue. This is explained as following: “[...] so we were forced to take cotton-polyester and then we were forced to do new dyeing processes, because of the mix of material” (Respondent 3, 2019) as well as:

“We were using garment dyeing for cotton with reactive dyestuffs and for polyester [...] disperse dye. Normally we don’t dye with reactive dyes so that was something new.”

(Respondent 7, 2019)

Hence, adjustments in value proposition, creation and capture emerge as a result of testing. (Statement 15)

Throughout the refinement stage, emergent problems are addressed with the personal dedication of individuals leading the project. For example, individuals use their own cars to transport the input material between the different partners. This notion is particularly highlighted by two statements of the respondents:

“It was really a hands-on project and we also wanted this case of Cheap Monday thing to be experimental in that way: To challenge ourselves and see how can we solve these problems.”

(Respondent 2, 2019)

“Yes, everyone was driving these dyed [garments] for example. I was passing it, as I live not far from the dyeing house. So I was there and then the owner of that company, he also brought [the garments] here.”

(Respondent 3, 2019)

It becomes evident that not all partners of the supply chain are motivated to put in voluntary work without economic incentives. Respondent 2 (2019), for instance, emphasises the difficulty of getting people to work “pro bono”. Another emergent learning is that all partners should be involved in the early stages of the project set up and planning. For example, emergent problems originate from sewing studios not being involved in the design process (Respondent 4, 2019) and the Cheap Monday merchandising teams including the collection in sales allocation planning too late in their process (Respondent 2, 2019). Further one respondent outlines:

“We then made a few development elements to the project, but mostly, we re-worked the product. Yes, we knew which products they wanted to make at that stage. [...] I think the hard thing with the project was that we got into the project quite late.”

(Respondent 6, 2019)

“[...] we had a little bit back and forth when it comes to the distribution: What stores would handle the project in the end? That was something that we learned. And that we should have involved our sales team much earlier in the process and set up a more proper strategy when it come to the distribution”.

(Respondent 2, 2019)

From this it becomes obvious that close collaboration of key partners is required from an early stage. (Statement 16)

Due to the characteristics of remanufacturing as previously mentioned, it is not possible to implement a generic system throughout the supply chain (Respondent 3, 2019). This results in the need for flexibility in order to respond to emergent issues and uncertainty. It becomes evident that it is beneficial to set up a thought-through strategy early and make decisions based on learnings from the try-out phase. In particular, the remanufacturing process is challenged due to the uncertainty in regard to regular collections and distributions of the input material, as stated by respondent 2 (2019) and respondent 4 (2019). Thus, it is evident that flexibility is required in order to face uncertainty related to the value creation process. (Statement 17)

## 5.5 Piloting

As part of the main remanufacturing process new issues arise in regard to input material and design. This requires a close discussion and line of communication between the sewing studios and the designer at Cheap Monday in order to ensure an uninterrupted production flow. Furthermore, process adaptations are required in this stage, which further need the reassurance of the other supply chain partners:

“Because you have really strict instructions and when you are not the designer it is really hard to change things and you have to stay in a close discussion. [...] So, we learned that we really need to have a close discussion and a close communication with the designer, it’s really important”.

(Respondent 6, 2019)

Henceforth, the pilot requires a close communication between key partners. (Statement 18)

The unsorted input material holds up production, as the sorting process turns out to be increasingly time consuming (Respondent 6, 2019). Respondent 2 (2019) further describes the sorting process as a bottle neck, as there was no set up for it. The variable condition of the provided input material further complicates the remanufacturing process, as various changes are required. Factors that cause issues with the input material and lead to process adjustments include appearance, dimensions and likeness of each piece. These factors further cause difficulties to produce a collection with 100% uniform products, as remarked by respondent 4

(2019) and respondent 6 (2019). Making decisions in regard to input material issues is difficult due to the number of parties involved and extensive communication required. In addition, the delay of input material deliveries is causing difficulties with distribution, further increasing the distribution costs and workload.

“Yes, we were facing a lot of problems all the time, because there were so many people involved, so often it was the communication. When you are working with other people and you are telling them what to do and they are not doing what they are supposed to do. There are many surprises. I think the biggest struggle for some companies was printing our products, as printing was wrong sometimes.”

(Respondent 6, 2019)

As a result, emergent issues regarding the value creation process hold up the production flow. (Statement 19)

The remanufacturing pilot experiment is used to create value adding PR activities. Focus is put on telling a captivating story about sustainability to the customer and promote CSR activities of Cheap Monday. According to respondent 2 (2019) Cheap Monday aims at showing its customers something new, especially a new angle on sustainability in fashion. Another respondent further states:

“[...] we can be better in the environmental thinking or maybe show more what we actually do. Because, as we produce in Sweden, we are quite involved in environmental work and CSR and everything.”

(Respondent 5, 2019)

In addition, PR is aimed to involve the customer in brand activities and foster circular thinking along the Cheap Monday audience (Respondent 3, 2019). Part of these educational efforts focus on developing an understanding the value of re-designed pieces is their uniqueness as “in re-design all products are unique” (Respondent 6, 2019). Ultimately the PR efforts serve the brand image by aiming at increasing the brand profitability. Consequently, PR activities focus on communicating the value proposition and strengthening customer relationships. (Statement 20)

The sewing of the pieces is based on predetermined instructions that need to be adjusted according to the input material. In order produce a remanufactured collection, a local production network is required that maintains flexible capacities. Therefore, a local value chain is established besides common business activities, as stated by respondent 2:

“All the seasons are running very fast and all the time everything is set. So, as soon as you step out of that production set-up, then all the timelines are kind of mixed up. So, we felt that we had a need to have a separate project, to launch these experimental ideas on sustainability.”

(Respondent 2, 2019)

The production volume is based on an estimated demand and production is concluded prior to sales orders. This was “because of timing and everything, we needed to just produce everything

and estimate how much we thought people would buy” (Respondent 2, 2019). In addition, no professional third-party logistics provider is involved in comparison to the usual production practices of Cheap Monday. Respondent 6 (2019) emphasises that delivery in Borås was easy to take care of themselves. Thus, the BME differs from the current business model and runs alongside the business-as-usual. (Statement 21)

The success of the remanufacturing pilot of Cheap Monday requires the consumer to understand that the beauty of re-design pieces is that each piece is unique with its flaws.

“Yes, it’s some variations. That’s a problem when you have a customer who expects the products to look exactly alike, because they are used to this from when they order new products. But in re-designing it doesn’t work like this. In re-design all products are unique. [...] So, you like have to teach them.”

(Respondent 6, 2019)

As part of this aspect, pricing is crucial and is recommended to be above the normal price range. Respondent 6 consequently emphasizes the importance of selling the product for the right price in order to make the best of it. In addition, new ways of producing the goods are required as well as the development of a more stable production plan. It is outlined that:

“[...] maybe just try to think a little bit more. If I am starting a brand, don’t work with the regular production set up. Try to find whatever way to work with the garments that are already out there in the world.”

(Respondent 2, 2019)

To counter emerging issues in a flexible manner, start-up-thinking of all participating parties is required. Respondent 2, for example, recognizes that start-up-thinking considers how things can be done in a completely different way. It is evident that the success of the BME is dependent on new approaches and mindsets. (Statement 22)

## 6 Discussion and analysis

*In the following chapter the research question is addressed through analysing and discussing the previously outlined results. The results are discussed, set in relation with one another as well as the existing literature in the field.*

### 6.1 Decisive factors for ideation

The results uncover that input material, collaboration, customer segments and sustainability goals form decisive factors throughout the ideation phase. To begin with, it is evident that enhancing sustainability in value creation and proposition is the motivation for remanufacturing BME (Statement 1). This comes as no surprise, as it is already highlighted in the literature that remanufacturing in fashion increases the potential for greater sustainability and builds the foundation for novel competitive advantages (Dissanayake & Sinha, 2015; Sinha, et al., 2016; Kant-Hvass, 2014; Bocken, et al., 2017). This notion aligns with Cheap Monday's motivation to explore remanufacturing BME in order to leverage new sustainable value propositions and push beyond existing ways of doing business (Weissbrod & Bocken, 2017).

Additionally, it is found that input material is a key resource and forms the starting point to develop remanufacturing BME ideas (Statement 2). On this subject, previous research outlines that in fashion remanufacturing it is difficult to obtain high volumes of similar input materials due to the high variability of conditions and characteristics e.g. colour and shape (Sinha, et al., 2016). One of the main starting points for the Re:workwear project however, is the assumed access to large volumes of relatively good quality homogenic input material i.e. Berendsen's discarded workwear. This shows that the starting point 'input material' is a major decisive factor throughout ideating the project. Having access to these large volumes of high-quality workwear enables Cheap Monday to overcome a major barrier of fashion remanufacturing.

Furthermore, throughout the ideation phase the value of collaboration with key partners in order to plan the remanufacturing BME is evident (Statement 3). Bocken et al. (2017), outline the importance to narrow down and define the aim of the experimentation process. This is executed in close discussion with key participating partners in order to leverage benefits through collaboration and drive sustainability. One expected challenge encountered throughout the ideation phase is the need for flexibility of key partners as previously identified by Hallstedt et al. (2013) and Laukkanen and Patala (2014). Consequently, it is evident that a close and flexible collaboration with key partners is necessary in order to experiment with remanufacturing business models.

Finally, it is evident that the existing customer segment is the main focus point throughout the ideation phase (Statement 4). Kant-Hvass (2014) already outlines that by adapting circular practices for sustainability, large clothing companies can enhance customer loyalty, strengthen brand image and tap into new customer segments. On one hand, the motivation behind the Cheap Monday remanufacturing project partly aligns with this literature as it aims to build closer relationships with existing customers and to sharpen the brand profile. This notion is additionally supported by Weissbrod and Bocken (2017), as they outline that the involvement of customers can facilitate the success of BME. On the other hand, the remanufacturing experiment of Cheap Monday does not aim to tap into new customer segments as previously suggested throughout the literature. Thus, a clearly defined focus on specific customer segments is decisive throughout the ideation phase.

## 6.2 Decisive factors for clustering

Throughout the clustering phase of the project, close communication and collaboration is required in order to decide on the key setup idea (Statement 5). The decision-making in terms of the project's setup is further enforced by a clear idea on the scope of the project and the creative direction. It is found that the decision-making regarding key activities is rooted in communication with key partners and customer segments. These findings agree with existing literature which states that BME benefits from successful collaboration (Fischer & Pascucci, 2017) as well as raising customer awareness regarding circularity experimentation (Bocken, et al., 2017). The latter is addressed by Cheap Monday as decisions are made to communicate, educate and send a clear message to their consumers.

Moreover, it is found that key activities throughout this phase are based on close collaboration with local production partners (Statement 6). The literature outlines that to date, remanufacturing entails a much higher complexity compared to linear manufacturing due to complex global (reverse) clothing networks (Ekström & Salomonsson, 2014; Brooks, 2013; Pal, 2017). In addition, previous literature raises the question of the necessity of international trade for remanufactured fashion (Sinha, et al., 2016). However, the results negate this notion, as the Cheap Monday remanufacturing project establishes a local network of key partners. Resulting from this, the proximity is a decisive factor for selecting key partners as well as the ability to work with small quantities. The latter is confirmed by literature, stating that small volumes are common in remanufacturing to date (Dissanayake & Sinha, 2015; Sinha, et al., 2016).

Throughout the project planning the creative vision of Cheap Monday as well as the resulting product specifications are key focus points (Statement 7). The literature aligns with the fact that the designer's creativity in remanufacturing is key (Sinha, et al., 2016). Yet, it is highlighted that the fluctuating and somewhat unpredictable consumer behaviour requires a business model experimentation to be continuously adapted in order to the consumer demands (Miller, 2016; Chesbrough, 2010; McGrath, 2010). Therefore, it can be argued that the topicality of workwear at this point in time is of advantage for the relevance of the project. Nevertheless, this might quickly change due to ever changing fashion trends and consumer demands. Consequently, it can be argued that the source of material input might not be applicable in the future and hence questions the projects survival in the long run. This finding aligns also with Bocken et al. (2017), stating that business circumstances as well as a certain degree of serendipity account for the success of BME.

Furthermore, it is evident that the operational capabilities are crucial in the value creation process for setting up remanufacturing BME (Statement 8). Sinha et al. (2016) claim that the remanufacturing success depends on establishing operational efficiencies. However, additional literature remarks the difficulty to plan remanufacturing timelines and processes in a reliable manner (Anderson & Brodin, 2005; Halldorsson, et al., 2009; Guide Jr., 2000; Pal, 2017). The latter is evident in the results of Cheap Monday's remanufacturing project as decisions are based on performance aspects. However, great uncertainty and inefficiencies are faced throughout the value creation process. This again highlights importance of operational efficiency as well as collaboration and flexibility throughout remanufacturing BME in order to overcome these barriers.

In continuation it is evident that Cheap Monday's business model experimentation's scope is planned in advance (Statement 9); as the literature notes, BME for sustainability is an

intentional and systemic approach (Bocken, et al., 2017). The Cheap Monday project is set up alongside the existing BM as advised by Bocken et al. (2017). Experimenting with life-extending strategies in the sense of circularity is said to create positive change in terms of economic and environmental value (Kant-Hvass, 2014; Fischer & Pascucci, 2017; Lindner & Williander, 2017; Blomsma & Brennan, 2017; Murray, et al., n.d.; Geissdoerfer, et al., 2017). Consequently, fashion remanufacturing entails to create new value from waste (Lindner & Williander, 2017). This is embraced by Cheap Monday as they aim to create new collections by remanufacturing discarded workwear and give them a new life. Based on these premises, it can be argued that the definition of the intention and scope of the remanufacturing BME is a decisive factor throughout the clustering phase.

### **6.3 Decisive factors for experimentation**

The experimentation phase is shaped by factors such as the input material and its impact on remanufacturing, try-outs and discovered inefficiencies as well as the ability to of key partners to rethink and adapt existing processes (Statement 10). It is evident that a continuous collaboration between key partners is a necessity. In relation, the literature outlines that BME for sustainability entails to test and learn about value creation strategies in uncertain circumstances (Bocken, et al., 2017). This testing and learning phase requires continuous process revision and benefits from close collaboration with key partners (Chesbrough, 2010; Fischer & Pascucci, 2017; Kraaijenhagen, et al., 2016). This is also evident throughout the first sampling round of Cheap Monday as they experiment together with key partners. Collaboration enables novel solutions to emergent issues (Schaltegger, et al., 2016) and further gives access to missing know-how and experience in regard to the subject matter (Bocken, et al., 2017; Kant-Hvass, 2014). Additionally, the Cheap Monday project uncovers that the geographical distance of the designer as a main challenge throughout the remanufacturing and that the availability of local partners enhanced the collaboration further. Therefore, it can be argued that geographical proximity plays a major role throughout first test runs.

The nature of the input material is known to cause challenges (Statement 11) regarding uncertainty that influences delivery times and consistency of output garments (Sinha, et al., 2016). The empirical findings show that throughout the Cheap Monday project, the in-put material causes multiple interruptions of the production flow. In particular the delays occur throughout the sorting and assembling stage (Dissanayake & Sinha, 2015; Sinha, et al., 2016). Moreover, it is uncovered that due to the diversity of the input material it is difficult to implement a standardized, universal process, as already mentioned by Sinha et al. (2016). Therefore, it can be argued that although access to homogenous input material is ensured, major challenges arise despite, which require attendance and optimisation.

First try-outs and sampling in the Cheap Monday remanufacturing BME brought up above mentioned issues and uncovered value capture (cost structure) inefficiencies (Statement 12). Hence, it is a major cause for an increased risk of extra costs due to the need for additional time and labour to address these emerging issues (Sinha, et al., 2016; Guide Jr., 2000). This finding aligns with Ries (2011) who outlines that experimenting and testing fosters learning. This can eventually lead to dropping experiments, which do not deliver desired outcomes (Weissbrod & Bocken, 2017). Value capture inefficiencies in business model experimentation can be reduced through testing assumptions (Ries, 2011; Osterwalder, et al., 2014). Through this, it is evident that try-outs and sampling are essential factors in the realms of remanufacturing BME.

Further, the results show that sampling requires a trial-and-error mindset and that the ability to rethink and adjust the value creation process is essential (Statement 13). Chesbrough (2010) outlines that BME is often subject to uncertainty of what the right operations may be. The Cheap Monday project countered this uncertainty with a continuous trial-and-error approach. As a result, process adjustments are made throughout the first sampling round. The literature recognizes that this kind of experimentation is often practiced under limited time and resources (Amit & Zott, 2001; Chesbrough, 2010; Weissbrod & Bocken, 2017), this however is not evident along the Cheap Monday project. The interviews uncover that key partners are willing to take the time to test and learn and to even develop new capabilities at times. Consequently, the mindsets of the different parties of the project are decisive in order to facilitate learning and develop new capabilities.

## **6.4 Decisive factors for refining**

Throughout the refinement stage emergent issues are addressed through a collaborative effort. This includes emergent legal and ethical issues in regard to key resources (Statement 14) that are addressed in this phase. As already emphasized throughout the literature, laws and regulations may depict a burden for BME (Laukkanen & Patala, 2014). This issue also surfaced throughout the Cheap Monday project as former branding and ID chips of the input material had to be removed due to legal and ethical concerns. This is an emergent issue that is first evident in the experimental stage and is refined prior to the pilot launch.

In continuation further adjustments in regard to value proposition, creation and capture surface as a result of testing (Statement 15). As previously mentioned, the variety and uncertainty related to the input material forms a major challenge. This issue pervades throughout the entire process of BME and intensifies further down the chain of operations. It becomes evident that additionally the material blends further complicate the process as dyeing issues appear. In response key partners of the Cheap Monday value chain develop new capabilities in order to adjust the process in accord i.e. sorting and dyeing. Chesbrough (2010) confirms that the ability to innovate is highly dependent on the experimentation capability of key partners. Ries (2011) further outlines that hands-on action is required for BME, as it is also evident along the Cheap Monday project. In the project for example, individuals' personal initiative is required to overcome issues, inefficiencies and delays in among others logistics. Thus it can be argued that refinement as a result of testing forms a major decisive factor of remanufacturing BME.

It is evident that close collaboration of key partners is required and most beneficial if initiated in an early stage (Statement 16). In particular, throughout the Cheap Monday project two major collaboration issues surface namely (1) collaboration between sewing studio and designer to solve production related design issues based on the input material variety and (2) collaboration within the brand of Cheap Monday, as the merchandising team faces difficulties to include the remanufactured collection into the range plan. Both issues originate from involving these partners at a later stage of the project. On one hand, the sewing studios remark that it would have been more beneficial to already be involved in the design process to be able to conduct the remanufacturing in a more flexible manner. On the other hand, the merchandising team needed to include the collection into their range plan on an earlier deadline in their timeline (Velu & Stiles, 2013; Chesbrough, 2010). Issues with bringing the remanufactured products to the market is nothing new, as it is recognized that the lack of effective marketing strategies form a common barrier for remanufactured products (Sinha, et al., 2016). Therefore, it is evident that the remanufacturing experiments require proper coordination (Guide Jr., 2000) and early involvement of all parties. Further, the fact that the input material is not specifically

designed for disassembly, results in a need for closer collaboration between the manufacturing and design party from day one (Ibid).

Besides close collaboration, flexibility is required in order to face uncertainty related to the value creation process (Statement 17). This becomes obvious throughout the literature, as McGrath outlines that BME is a perpetual process that requires continuous revision of the processes and activities. As a result, it is decisive to uncover weak strategies and revise or abandon these.

## **6.5 Decisive factors for piloting**

Throughout the piloting stage close collaboration, communication and adaptation towards emergent issues are a recurrent theme (Statement 18). The pilot runs besides the existing business model and its success is also dependent on new approaches and mindsets as well as the communication with the consumer. One finding is that the pilot requires a particularly close communication between the different key partners. This finding aligns with the existing literature as it is stated that the remanufacturing BME requires a close collaboration and coordination (Guide Jr., 2000; Fischer & Pascucci, 2017; Kraaijenhagen, et al., 2016). Further in line with the literature, respondents state that a closer collaboration is required between the designer and the sewing studies in order to quickly solve design issues deriving from the used products. Sinha et al. (2016) agree with the importance of the designer's creativity in remanufacturing as the remanufacturing process requires more skills in terms of cutting and design.

The results show that emergent issues regarding the value creation process hold up the production flow (Statement 19). These include challenges throughout the process such as heterogenous input material influenced both sorting and remanufacturing. This resonates with prior research that collection and sorting depict a significant challenge for remanufacturing and that efficiency, speed and quality are decisive for the success (Sinha, et al., 2016; Dissanayake & Sinha, 2015).

Furthermore, it is found that PR activities should focus on communicating the value proposition and strengthen the customer relationships (Statement 20). For example, creating educational and promotional PR content of the pilot delivers additional value for Cheap Monday. The opportunity is to educate customers on circular thinking and build closer relationships with them. The literature confirms that involving customers early enhances the potential success of an experiment and strengthens the brand image (Weissbrod & Bocken, 2017; Kant-Hvass, 2014). Besides economic opportunities of promoting sustainability through remanufacturing BME, the focus on sustainability further fosters customer loyalty as evident in the Cheap Monday project (Kant-Hvass, 2014).

The pilot is executed alongside business-as-usual, within a new supply chain set up that is operated in collaboration with local production partners (Statement 21). Sinha (2016) outlines that a collaborative network approach can overcome several related challenges such as the lack of technology and access to input material in remanufacturing supply chains. In the case of Cheap Monday, no logistics provider was part of this remanufacturing network which causes severe challenges regard managing the production flow. However, the local network for the Cheap Monday project allowed increasing flexibility and better production volume and price estimation based on forecasts from the existing Cheap Monday business experience.

Last, it is found that the success of the BME is dependent on new approaches and mindsets (Statement 22). For example, the Cheap Monday remanufacturing BME requires all stakeholders of the project to rethink existing processes and the perception of ‘new products’. As Chesbrough (2010) outlines, in order for firms to be innovative there is a need to be able to experiment to succeed in today’s markets. The evident need for flexibility throughout the Cheap Monday project shows that larger fashion firms benefit from a start-up mindset and hands-on action in order to successfully experiment with new BM (Weissbrod & Bocken, 2017; Ries, 2011). Whilst the circle economy concepts such as remanufacturing, act as guidance to develop these new approaches and mindsets, the success of BME project depends on favourable market conditions and serendipity (Bocken, et al., 2017). Firms that engage in remanufacturing fashion can make use of their design to ‘declare their design vision and individuality (Sinha, et al., 2016).

## 7 Conclusions

*The following chapter aims to answer the previously proposed research question by drawing conclusions from the preceding discussion and analysis. Further, a logical connection between directions for future research are outlined.*

### 7.1 Theoretical contribution

In the following the original research question of this study ‘What are decisive factors for remanufacturing business model experimentation in the fashion and textiles industry?’ is addressed. It is found that decisive factors include (1) motivation and scope, (2) input material, (3) flexibility, (4) stakeholder collaboration as well as (5) system development, which are further elaborated below.

Already throughout the ideation phase a clear vision on the (1) motivation and scope of the remanufacturing BME is required from the brand’s side. Eventually, it is the brand that has to invest in the project, integrate the collection into existing timelines and merchandising structures as well as align the creative direction with the brand’s identity. Prior and throughout the entire process, decisions should be well-grounded and made on the basis of exploring new economic opportunities with the outlook for scalability in the future. It is evident that remanufacturing BME is best initiated throughout the frameworks of a small-scale project that runs alongside the brand’s ‘business-as-usual’. The intention is to start small, see what works and what does not work on a trial-and-error basis. For the experimentation process it is beneficial to have a clearly defined direction and objective especially in terms of creative direction, value proposition and customer segments.

It is found that the (2) input material forms a significant starting point for the initiation of the experimentation. This is due to the fact that the availability of large volumes of high quality homogenic goods is difficult to access. These characteristics maintain decisive implications and challenges throughout the design and production phase. Consequently, efficient sorting is an essential capability in order to ensure a consistent flow throughout the remanufacturing supply chain.

In order to overcome challenges originating from the unique properties of the input material, (3) flexibility is decisive. Each supply chain partner should have the mindset to do things differently and to break out of existing patterns. Experimental test-runs and trials are essential to investigate the feasibility of various options. Test runs reveal emerging issues and support the decision-making and to capitalise on promising solutions. Either way, the ability to adjust and possibly develop and invest in new capabilities where necessary is crucial.

Further, (4) stakeholder collaboration is fundamental to facilitate the preceding decisive factors. A clear and focussed communication between the different parties including among others the brand, key partners and customer segments is a major contributing factor to the successful execution of the experiment. In regard to key partners, geographic proximity supports efficiency throughout the project. As for time efficiency, a local remanufacturing supply chain offers the opportunity to compete on the basis of time. Further, this local network of key partners fosters knowledge-sharing and learning which additionally contributes to the success for experiments. Additionally, (prior) expertise as well as a sustainable mindset form a driving factor. Besides key partnerships, it is essential to establish close collaboration with the end

consumer. PR activities should be employed to communicate a story that educates on the value of remanufactured fashion i.e. sustainability and uniqueness.

Ultimately, (5) system development is an important influential factor. The results show that system is a major issue, on one hand, as it is difficult to universally implement it due to the heterogenous input material and the flexibility required to overcome the uniqueness of the processes. On the other hand, it is also evident that there is a promising potential to collaborate with stakeholders in order to mutually develop a system that overcomes mentioned issues. While facilitating the actual process, this kind of system would additionally form a lever in scaling up successful remanufacturing business model experiments with the outlook of transitioning towards a circular and more sustainable business model.

## **7.2 Practical implications**

The study and its findings imply various aspects for practitioners. Firstly, light is shed on the opportunities that come along with remanufacturing business model experimentation. While BME can facilitate innovation, especially in uncertain environments (Amit & Zott, 2001; Chesbrough, 2010; Weissbrod & Bocken, 2017), remanufacturing depicts one way that allows to adapt a circular system. Secondly, the findings show a positive instance of remanufacturing business model experimentation as a business capability alongside the business-as-usual of a fashion retail firm. Within the Re:workwear project, Cheap Monday is able to experiment with a remanufacturing business model that co-existed with the brand's current business model. This builds confidence in remanufacturing business model experimentation and underlines the opportunity of the phenomenon for the fashion and textile industry. Thirdly, as a result of the preceding aspects, this study may have further implications on how strategists within fashion and textile retail organizations experiment with sustainability in terms of remanufacturing and business model orientation alongside their day-to-day business. Despite the fact that the single case study approach influences the generalisability of findings and results, the study can offer support and thought-provoking impulses for firms within the industry aspiring to develop their own remanufacturing business model experiments.

## **7.3 Limitation and future research**

This research is subject to limitations in terms of industry focus, case study methodology and retrospective investigation. As this study has a clear industry focus, the phenomenon of remanufacturing business model experimentation is investigated solely within the fashion and textile industry. Hence, the findings, i.e. decisive factors for remanufacturing BME, are limited to this particular industry. In addition, the starting point for data collection is a single case study on the phenomenon within the Re:workwear project and the brand of Cheap Monday. Because of this, the findings should further be understood in the context of this particular case (Voss, et al., 2002).

Moreover, the study is performed both retrospectively and within a limited timeframe, which may also influence the findings. Consequently, longitudinal studies, i.e. numerous projects that run over a longer period of time and multiple procurement cycles, could straighten out the key findings. This could further facilitate to gain a more comprehensive understanding of the decisive factors in remanufacturing BME. It can be said that outcome and findings from inductive research are based on empirical data and testable (Eisenhardt & Graebner, 2007). Consequently, future research could be conducted with a deductive approach in order to test the resulting theory of this study.

Furthermore, the fact that the researchers investigate the phenomenon post-project and do not actively participate throughout the project, the findings may thus further be limited. The researchers might not be able to investigate the entire internal dynamics of the experimentation process. It is therefore advisable that future researchers should engage in an ongoing experiment project in order to follow the internal experimentation project process more intimately.

The findings as well as the above-stated limitations of this study reveal implications and aspects that are worth future actions and research. The study illustrates the need for promotion of sustainability in particular in terms of remanufacturing business model experimentation. In that regard, future research could further drive the development of a mutual understanding and support throughout the industry in order to leverage the opportunity that remanufacturing business model experimentation holds. Furthermore, future research within remanufacturing business model experimentation, in other settings and within a variety of other firms in the industry, is highly recommended. This enables to test the findings and positively influence the generalisability in the long run. With regard to the retrospective and post-project execution of this study, future research should continuously evaluate and further develop the remanufacturing BME approach by giving attention to innovative technologies and methods. Finally, future research is necessary to analyse how sustainability targets can be set and measured. This should be done in order to test the feasibility of the experimentation process, taking the entire triple bottom line into account.

## Literature list

- Adams, R., Jeanrenaud, S., Bessant, J. & Denyer, D., 2017. Innovating for sustainability. A systematic review of the body of knowledge. *Business Strategy and the Environment*, 26(5), pp. 597-608.
- Afuah, A. & Tucci, C., 2001. *Internet Business Models and Strategies*. Boston: McGraw-Hill.
- All-Party Parliamentary Sustainable Resource Group, 2014. London: Remanufacturing - Towards a resource efficient economy.
- Alvesson, M., 2003. Beyond neopositivists, romantics, and localists: A reflexive approach to interviews in organizational research.. *The Academy of Management Review*, 28(1), pp. 13-33.
- Amit, R. & Zott, C., 2001. Value creation in e-business. *Strategic Management Journal*, 22(6-7), pp. 493-520.
- Anderson, H. & Brodin, M., 2005. The consumer's changing role: The case of recycling. *Management of Environmental Quality: An International Journal*, 16(1), pp. 77-86.
- Andries, P., Debackere, K. & Van Looy, B., 2013. Simultaneous experimentation as a learning strategy: Business model development under uncertainty. *Strategic entrepreneurship*, 7(4), pp. 288-310.
- Antikainen, M. & Valkokari, K., 2016. A Framework for sustainable circular business model innovation. *Technology Innovation Management Review*, 6(7), pp. 5-12.
- Archibald, M. M., 2016. Investigator triangulation: A collaborative strategy with potential for mixed methods research. *Journal of Mixed Methods Research*, 10(3), pp. 228-250.
- Blank, S., 2013. *The four steps to the epiphany: Successful strategies for products that win*. San Francisco: K&S Ranch Publishing.
- Blomsma, F. & Brennan, G., 2017. The emergence of circular economy: A new framing around prolonging resource productivity. *Journal of Industrial Ecology*, 21(3), pp. 603-614.
- Bocken, N., Allwood, J., Willey, A. & King, J., 2012. Development of a tool to rapidly assess implementation difficulty and emissions reduction benefits of innovation. *Technovation*, 32(1), pp. 19-31.
- Bocken, N. et al., 2017. Business model experimentation for circularity: Driving sustainability in a large international clothing retailer. *Economics and Policy of Energy and the Environment*, 2017(1), pp. 85-122.
- Bocken, N., Schuit, C. & Kraaijenhagen, C., 2018. Experimenting with a circular business model: Lessons from eight cases. *Environmental Innovation and Societal Transitions*, pp. 79-95.

- Bocken, N., Short, S., Rana, P. & Evans, S., 2013. A value mapping tool for sustainable business modelling. *Corporate Governance*, 13(4), pp. 482-497.
- Bocken, N., Short, S., Rana, P. & Evans, S., 2014. A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, Volume 65, pp. 42-56.
- BOF, McKinsey & Company, 2018. *The State of Fashion 2019*, London: BOF, McKinsey & Company.
- Boons, F., Montalvo, C., Quist, J. & Wagner, M., 2013. Sustainable innovation, business models and economic performance: an overview. *Journal of Cleaner Production*, Volume 45, pp. 1-8.
- Bowman, C. & Ambrosini, V., 2000. Value Creation Versus Value Capture: Towards a Coherent Definition of Value in Strategy. *British Journal of Management*, 11(1), pp. 1-15.
- Boyer, K. K. & McDermott, C., 1999. Strategic consensus in operations strategy. *Journal of Operations Management*, 17(3), pp. 289-307.
- Brandenburger, A. M. & Stuart, H. W., 1996. Value-based business strategy. *Journal of Economics*, 5(1), pp. 5-24.
- Brennan, C., Tennant, M. & Blomsma, F., 2015. Business and production solutions: Closing loops and the circular economy. In: *Sustainability: Key issues*. Abingdon: Routledge.
- Brooks, A., 2013. Stretching global production networks: The international second hand clothing trade. *Geoforum*, 44(1), pp. 10-22.
- Brooks, A., 2015. *Clothing Poverty*. London: Zed Books.
- Bryman, A. & Bell, E., 2015. *Business Research Methods*. Oxford: Oxford University Press.
- Caro, F. & Martínez-de-Albéniz, V., 2015. Fast Fashion: Business Model Overview and Research Opportunities. In: *Retail Supply Chain Management: Quantitative models and empirical studies*. New York: Springer Science and Business.
- Chakravarthy, B. S. & Doz, Y., 1992. Strategy process research: Focusing on corporate self-renewal. *Strategic Management Journal*, 13(S1), pp. 5-14.
- Chang, Y. et al., 2012. How do established firms improve radical innovation performance? The organizational capabilities view. *Technovation*, 32(7-8), pp. 441-451.
- Chesbrough, H., 2010. Business model innovation: Opportunities and barriers. *Long Range Planning*, 43(2), pp. 354-363.
- Chesbrough, H. & Holwell, S., 1998. Action research: its nature and validity. Systemic practice and action research. 11(1), pp. 9-21.

- Chesbrough, H. & Rosenbloom, R. S., 2000. The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spinoffs. *Industrial and Corporate Change*, 11(3), pp. 529-555.
- Christensen, C., 1997. *The Innovator's Dilemma*. Cambridge, Ma: Harvard Business School Press.
- Christensen, L., Engdahl, N., Gräas, C. & Haglund, L., 2016. *Marknadsundersökning: En handbok*. Lund: Studentlitteratur.
- Cox, A., 1999. Power, value and supply chain management. *Supply Chain Management: An International Journal*, 4(4), pp. 167-175.
- DeCarlo, M., 2018. *Scientific Inquiry in Social Work*. Radford: Open Social Work Education.
- Denzin, N., 1970. *The research act: A theoretical introduction to sociological methods*. Chicago: Aldine.
- Denzin, N. & Lincoln, Y., 2005. *The sage handbook of qualitative research*. Thousand Oaks: Sage.
- Dissanayake, G. & Sinha, P., 2015. An examination of the product development process for fashion remanufacturing. *Resources, Conservation and Recycling*, Volume 104, pp. 94-102.
- Dreiack, S. & Niederberger, M., 2018. Qualitative Experteninterviews in Internationalen Organisationen. *Politische Vierteljahresschrift*, 59(2), pp. 293-318.
- Dyllick, T. & Hockerts, K., 2002. Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, pp. 130-141.
- Edwards, J. R. & Bagozzi, R. P., 2000. On the nature and direction of relationships between constructs and measures. *Psychological Methods*, 5(2), pp. 155-174.
- Eisenhardt, K. M., 1989. Building theories from case study research. *Academy of Management Review*, 14(4), pp. 532-550.
- Eisenhardt, K. M. & Graebner, M. E., 2007. Theory Building from Cases: Opportunities and Challenges. *Academy of Management Journal*, 50(1), pp. 25-32.
- Ekström, K. & Salomonsson, N., 2014. Reuse and recycling of clothing and textiles - a network approach. *Journal of Macromarketing*, 34(3), pp. 383-399.
- Ellen MacArthur Foundation, 2017. *A new textiles economy: redesigning fashion's future*, London: Ellen MacArthur Foundation.
- Ellram, L. M., 1996. The use of the case study method in logistics research. *Journal of Business Logistics*, 17(2), pp. 93-138.

Esenduran, G., Kemahlioglu-Ziya, E. & Swaminathan, J. M., 2017. Product Take-Back Legislation and Its Impact on Recycling and Remanufacturing Industries. In: *Sustainable Supply Chains*. New York: Springer.

European Parliamentary Research Service, 2019. *Environmental impact of the textiles and clothing industry*, Brussels: European Parliament.

Evans, S. et al., 2017. Business model innovation for sustainability: Towards a unified perspective for creation of sustainable business models. *Business Strategy and the Environment*, 26(5), pp. 597-608.

Fischer, A. & Pascucci, S., 2017. Institutional incentives in circular economy transition: The case of material use in the Dutch textile industry. *Journal of Cleaner Production*, 155(P2), pp. 17-32.

Fletcher, K., 2012. Durability, Fashion, Sustainability: The Processes and Practices of Use. *The Journal of Design, Creative Process & the Fashion Industry*, 4(2), pp. 221-238.

Flyvbjerg, B., 2006. Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, 12(2), pp. 219-245.

Frankelius, P., 2015. *Innovationsbegreppet och innovationsindikatorer: En analys med tonvikt på statistikens validitet.*, Stockholm: Statistiska Centralbyrån SCB.

Frankel, R., Naslund, D. & Bolumole, Y., 2005. The 'white space' of logistics research: a look at the role of methods usage. *Journal of Business Logistics*, 26(2), pp. 185-209.

Franke, N., Gruber, M., Harhoff, D. & Henkel, J., 2008. Venture capitalists' evaluations of start-up teams: Trade-offs, knock-out criteria, and the impact of VC experience.. *Entrepreneur Theory and Practice*, 32(3), pp. 459-483.

Gallo, M., Romano, E. & Santillo, L. C., 2012. A Perspective on Remanufacturing Business: Issues and Opportunities. In: *International Trade from Economic and Policy Perspective*. Rijeka: InTech, pp. 209-234.

Garcia, R. & Calantone, R., 2002. A critical look at technological innovation typology and innovativeness terminology: A literature review. *Journal of Production Innovation and Management*, 19(2), pp. 110-132.

Geissdoerfer, M., Savaget, P., Bocken, N. & Hultink, E., 2017. The circular economy - a new sustainability paradigm?. *Journal of Cleaner Production*, Volume 143, pp. 757-768.

Giutini, R. & Gaudette, K., 2003. Remanufacturing: The next great opportunity for boosting US productivity. *Business Horizons*, 46(6), pp. 41-48.

Given, L., 2008. *The SAGE Encyclopedia of Qualitative Research Methods*. Thousand Oaks: SAGE .

Global Fashion Agenda and The Boston Consulting Group, 2017. *The pulse of the fashion industry*, Copenhagen: Global Fashion Agenda & The Boston Consulting Group.

Global Fashion Agenda and The Boston Consulting Group, 2018. *The pulse of the fashion industry*, Copenhagen: Global Fashion Agenda & The Boston Consulting Group.

Global Fashion Agenda, 2019. *CEO Agenda 2019*, Copenhagen: Global Fashion Agenda.

Golicic, S. & Davis, D., 2012. implementing mixed methods research in supply chain management. *International Journal of Physical Distribution & Logistics Management*, 42(8/9), pp. 726-741.

Guide Jr., V. D. R., 2000. Production planning and control for remanufacturing: industry practice and research needs. *Journal of Operations Management*, 18(4), pp. 467-483.

Gwilt, A. & Rissanen, T., 2012. *Shaping Sustainable Fashion: Changing the Way we make and use Clothes*. London: Routledge.

Halldorsson, A., Kotzab, H. & Skjøtt-Larsen, T., 2009. Supply chain management in the crossroad to sustainability: A blessing or a curse?. *Logistics Research*, 1(2), pp. 83-94.

Hallstedt, S., Thompson, A. & Lindahl, P., 2013. Key elements for implementing a strategic sustainability perspective in the product innovation process. *Journal of Cleaner Production*, 51(2013), pp. 277-288.

Hamel, G., 2000. *Leading the Revolution*. Boston: Harvard Business School Press.

Hart, S. L., 1995. A Natural-Resource-Based View of the Firm. *Academy of Management Review*, 20(5), pp. 986-1014.

Hilden, M., Saikku, L., Jordan, A. & Huitema, D., 2013. Call for papers of special volume on the opportunities and roles of experimentation in addressing climate change. *Journal of Cleaner Production*, Volume 115, pp. 1-4.

Hirschman, E., 1986. Humanistic inquiry in marketing research: philosophy, method and criteria. *Journal of Marketing Research*, 23(3), pp. 237-49.

Hockerts, K. & Wustenhagen, R., 2010. Greening Goliaths versus emerging Davids - Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing*, 25(5), pp. 481-492.

Hoveskog, M., Halila, F. & Danilovic, M., 2015. Early Phases of Business Model Innovation: An Ideation Experience Workshop in the Classroom. *Decision Sciences Journal of Innovative Education*, 13(2), pp. 177-195.

Jayaraman, V. & Luo, Y., 2007. Creating Competitive Advantages Through New Value Creation: A Reverse Logistics Perspective. *Academy of Management Perspectives*, 21(2), pp. 56-73.

- Kant-Hvass, K., 2014. Post-retail responsibility of garments - A fashion industry perspective. *Journal of Fashion Marketing and Management*, 18(4), pp. 413-430.
- Ketokivi, M. & Choi, T., 2014. Renaissance of case research as a scientific method. *Journal of Operations Management*, 32(5), pp. 232-240.
- Khan, S. N., 2014. Qualitative Research Method: Grounded Theory. *International Journal of Business and Management*, 9(11), pp. 224-233.
- Kovacs, G. & Spens, K. M., 2005. Abductive reasoning in logistics research. *International Journal of Physical Distribution and Logistics Management*, 35(2), pp. 132-144.
- Kraaijenhagen, C., Van Oppen, C. & Bocken, N., 2016. *Circular business. Collaborate & Circulate*. Amersfoort: Circular Collaboration.
- Laukkanen, M. & Patala, S., 2014. Analysing barriers to sustainable business model innovations: Innovation systems approach. *International Journal of Innovation Management*, 18(6).
- Lepak, D., Smith, K. & Taylor, S., 2007. Value creation and value capture: a multilevel perspective. *Academy of Management Review*, 32(1), pp. 180-194.
- Lewis, T., Park, H., Netravali, A. & Trejo, H., 2016. Closing the loop: a scalable zero-waste model for apparel reuse and recycling. *International Journal of Fashion Design, Technology and Education*, pp. 353-362.
- Lindex AB, 2019. *About: Lindex*. [Online]  
Available at: <https://about.lindex.com/se/redesign/>  
[Accessed 12 May 2019].
- Lindner, M. & Williander, M., 2017. Circular Business Model Innovation: Inherent Uncertainties. *Business Strategy and the Environment*, 26(2), pp. 182-196.
- Magretta, J., 2002. Why business models matter. *Harvard Business Review*, 80(5), pp. 86-89.
- Mangan, J., Lalwani, C. & Gardner, B., 2004. Combining quantitative and qualitative methodologies in logistics research. *International Journal of Physical Distribution & Logistics Management*, 34(7), pp. 565-78.
- McGrath, R. G., 2010. Business Models: A Discovery Driven Approach. *Long Range Planning*, 43(2-3), pp. 247-261.
- McLachlin, R., 1997. Management initiatives and just-in-time manufacturing. *Journal of Operations Management*, 15(4), pp. 271-292.
- McManners, P., 2016. The action research case study approach: A methodology for complex challenges such as sustainability in aviation. *Action Research*, 14(2), p. 201-216.

- Michaud, C. & Llerena, D., 2011. Green Consumer Behaviour: an Experimental Analysis of Willingness to Pay for Remanufactured Products. *Business Strategy and the Environment*, 20(6), pp. 408-420.
- Miles, M. B. & Huberman, A. M., 1994. *Qualitative Data Analysis*. Thousand Oaks: Sage Publications.
- Miller, K., 2016. Visionary leadership: Learning from exemplary organizations. In: *Handbook of research on global fashion & management and merchandising*. Hershey: IGI Global.
- Morse, J., 2010. Simultaneous and Sequential Qualitative Mixed Method Designs. *Qualitative Inquiry*, 16(6), pp. 483-491.
- Murray, A., Skene, K. & Haynes, K., n.d. The circular economy: An interdisciplinary exploration of the concept and application in a global context. *Journal of Business Ethics*, 140(3), pp. 369-380.
- Nussholz, J. L. K., 2017. Circular Business Models: Defining a Concept and Framing an Emerging Research Field. *Sustainability*, 9(10).
- Oghazi, P. & Mostaghel, R., 2018. Circular Business Model Challenges and Lessons Learned - An Industrial Perspective. *Sustainability*, 10(30), pp. 1-19.
- Osterwalder, A. & Pigneur, Y., 2010. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Hoboken: Wiley.
- Osterwalder, A., Pigneur, Y., Bernada, G. & Smith, A., 2014. *Value Proposition Design: How to create products and services customers want*. New Jersey: John Wiley & Sons, Inc., Hoboken.
- Pagell, M. & Krause, D. R., 1999. A multiple-method study of environmental uncertainty and manufacturing flexibility. *Journal of operations Management*, 17(3), pp. 307-325.
- Pal, R., 2017. Value Creation through Reverse Logistics in used Clothing Networks. *The International Journal of Logistics Management*, 28(3), pp. 864-906.
- Porter, M. E. & van der Linde, C., 1995. Green and Competitive: Ending the Stalemate. *Harvard Business Review*, 73(5), pp. 120-134.
- Re:textile, n.d.. *Re:textile*. [Online]  
Available at: <http://retextile.se/om-projektet/>  
[Accessed 1 April 2019].
- Respondent 2, 2019. *Remanufacturing business model experimentation of Cheap Monday's Re:workwear project*. [Interview] (29 April 2019).
- Respondent 3, 2019. *Remanufacturing business model experimentation of Cheap Monday's Re:workwear project*. [Interview] (29 April 2019).

- Respondent 4, 2019. *Remanufacturing business model experimentation of Cheap Monday's Re:workwear project*. [Interview] (30 April 2019).
- Respondent 5, 2019. *Remanufacturing business model experimentation of Cheap Monday's Re:workwear project*. [Interview] (2 May 2019).
- Respondent 6, 2019. *Remanufacturing business model experimentation of Cheap Monday's Re:workwear project*. [Interview] (2 May 2019).
- Respondent 7, 2019. *Remanufacturing business model experimentation of Cheap Monday's Re:workwear project*. [Interview] (3 May 2019).
- Respondent 8, 2019. *Remanufacturing business model experimentation of Cheap Monday's Re:workwear project*. [Interview] (17 May 2019).
- Richardson, J., 2008. The business model: an integrative framework for strategy execution. *Strategic Change*, 17(5-6), pp. 133-144.
- Ries, E., 2011. *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. London: Penguin Books.
- Ruane, J. M., 2006. *A och O i samhällsvetenskaplig forskning*. Lund: Studentlitteratur.
- Sage, 2008. *Encyclopedia of Survey Research Methods*. Thousand Oaks: SAGE.
- Sandberg, E., Rudrajeet, P. & Hemilä, J., 2018. Exploring value creation and appropriation in the reverse clothing supply chain. *The International Journal of Logistics Management*, 29(1), pp. 90-109.
- Savaskan, R. C. & Van Wassenhove, L. N., 2006. Reverse Channel Design: The Case of Competing Retailers. *Management Science*, 52(1), pp. 1-14.
- Schaltegger, S., Ludeke-Freund, F. & Hansen, E., 2016. Business models for sustainability: A co-evolutionary analysis of sustainable entrepreneurship, innovation and transformation. *Organisation & Environment*, 29(3), pp. 264-289.
- Short, S., Bocken, N., Rana, P. & Evans, S., 2012. *Business model innovation for embedding sustainability: A practice-based approach introducing business model archetypes*. Istanbul, 10th Global Conference on Sustainable Manufacturing: Towards implementing sustainable manufacturing.
- Sinha, P., Senthilkannan Muthu, S. & Dissanayake, G., 2016. *Remanufactured Fashion*. Singapore: Springer Science and Business Media.
- Spiegel, M., 2019. Unknown outcomes, no guarantees: Lawrence Grossberg and experimentation. *Cultural Studies*, 33(1), pp. 57-67.
- Stahel, W. & Clift, R., 2016. Stocks and flows in the performance economy. In: *Taking stock of industrial ecology*. New York: Springer international publishing.

Statista, 2019. *Apparel worldwide*. [Online]  
Available at: <https://www.statista.com/outlook/90000000/100/apparel/worldwide>  
[Accessed 3 March 2019].

Strauss, A. & Corbin, J., 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park: Sage Publications.

The North Face, 2019. *The North Face*. [Online]  
Available at: <https://www.thenorthface.co.uk/christopher-raeburn.html>  
[Accessed 12 May 2019].

United Nations, 2017. *World Population Prospects 2017*. [Online]  
Available at: <https://population.un.org/wpp/DataQuery/>  
[Accessed 3 April 2019].

van de Ven, A. H., 1992. Suggestions for studying strategy process: A research note. *Strategic Management Journal*, 13(S1), pp. 169-188.

Weissbrod, I. & Bocken, N., 2017. Developing sustainable business experimentation capability - a case study. *Journal of Cleaner Production*, 142(4), pp. 2663-2676.

Velu, C. & Stiles, P., 2013. Managing decision-making and cannibalization for parallel business models. *Logn Range Planning*, 46(6), pp. 443-458.


Voss, C., Tsikriktsis, N. & Frohlich, M., 2002. Case research in operations management. *International Journal of Operations & Production Management*, 22(2), pp. 195-219.

Zethraeus, A., 2018. *Re:workwear - En fältstudie av serietillverkad re-design*, Borås: Re:textile.

## Appendix 1 – Structured interview (Questionnaire)

[URL to enter the questionnaire: <https://sUNET.artologik.net/hb/Survey/796>]

☰ sunet.artologik.net ↻



HÖGSKOLAN  
I BORÅS

Dear participant,

We are Laetitia Muriel Herzog and Caroline Eleni Hoehn and want to extend our gratitude for participating in our survey for our Master Thesis. The aim of this survey is to gain your personal insights and learn about the most important aspects that you came across throughout the Re:workwear project.

Please feel free to reply in keywords in order to max. spent 15 minutes on this survey. Do not hesitate to reach out to us, in case of any questions, feedback or clarification.

Laetitia: +4917682005991, S181845@student.hb.se  
Caroline: +4915750781460, S182434@student.hb.se

Thank you very much in advance for your kind participation.

Sincerely,  
L&C

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Consent for the collection and processing of personal data  
As part of the course Textile Management at the University of Borås, we are conducting a study with the purpose of investigating circular business model experimentation, in particular remanufacturing.

We who are conducting the study would like you to provide certain information about yourself, more specifically your role and experience within the Re:workwear project.

The personal data will be used carefully and with the purpose of getting a picture of your role and insights of the project.

The University of Borås is the controller of the processing, and the legal basis for the processing is article 6.1 (a) in the General Data Protection Regulation, GDPR, (consent).

The personal data will be used by us and may be made available to the teachers of the current course and central administrators at the university. The data may also be public documents, which means that anyone as a general rule may access it in accordance with the principle of free access to public records.

The personal data will be stored in the EU/EEA, or countries outside the EU/EEA that the EU Commission has determined to have an adequate level of protection, i.e. sufficiently high according to the GDPR. The data will be erased when it is no longer necessary.

Your participation in this study is completely voluntary. If you consent to the processing of your personal data as described above, you may withdraw your consent at any time whereby we will stop using your personal data. Because of legal requirements we may however be prevented from immediately erasing your personal data.

By participating in this survey, you consent that University of Borås may collect and process your personal data as described above.

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### **Introduction Question**

*Please kindly fill out the questions below to give an overall insight into your role and activities in the Re:workwear project.*

**1. Please kindly fill in your name below:**

**2. Briefly state your role in the Re:workwear project below:**

**3. Briefly state the most important activities of your role below:**

### **Value Proposition**

*Throughout the following questions, please briefly state the insights that were the most relevant and important in your own experience.*

**4. Who is your customer for this project?**

*Please briefly explain what the most important aspects of working for/ with your customers were in your experience.*

**5. How is the relationship with your customers?**

*Please briefly explain the most important aspects of the relationship that you had with your customers for this project.*

**6. What was the product/ service that you offered for your customers?**

*Please briefly explain the most important implications (e.g. challenges/ benefits) in this project.*

### **Value Creation**

*Throughout the following questions, please briefly state insights that were the most relevant and important in your own experience.*

**7. Who were your most important partners?**

*Please briefly explain the most important aspects/ learnings that you experienced with your partners in this project.*

**8. How did you deliver your product/ service to your customer?**

*Please briefly explain the most important implications in regard to the chosen distribution channels of this project.*

**9. What were your most important resources to deliver your product/ service?**

*Please briefly explain the most important implications in regard to the resources necessary to deliver your product/ service in this project.*

**10. What were the main activities that you performed to provide your product/ service?**

*Please briefly explain the most important implications in regards to the activities performed to provide your product/ service.*

### **Value Capture**

*Throughout the following questions, please briefly state insights that were the most important in your experience.*

**11. What were the main costs that derived from this project for you?**

*Please briefly state the most relevant sources and implications of the main costs for you that derived from the project.*

**12. How did this project generate revenue for you?**

*Please briefly explain the implications for generating revenue in this project. What were the most important aspect/ challenges for you?*

**Closing Questions**

*Please briefly reflect on the Re:workwear project from your point of view and state the most noteworthy aspects (e.g. learnings, challenges, barriers).*

**13. What were the biggest challenges for you in this project?**

**14. What do you see as the biggest opportunities for you in this project?**

**15. Please kindly mention any additional comments, reflections or your own insight in regard to this project that you find noteworthy.**

*Table 2 - Respondent answers; Introduction questions*

Introduction questions		
Question 1	Question 2	Question 3
Resp. 1	Project manager and fascilitator	Project administration (budget, agreement etc) Sourcing and sorting of material Co-ordination between design and production
Resp. 2	I was one of the initiators of the project after being approached by Re:textile with the idea of doing something with Berendsen.	Creative Direction and overseeing all parts of the project. Putting together a project team and having regular meetings with them. Spokesperson, interviews and press.
Resp. 3	Consultant for the project it self and for one of the producers. Idesömnad .	Organize the production flow , calculation , how to make changes from ready made garment in an efficient way. Where to find including material and looking for garments in laundry in an efficient way.
Resp. 4	Ide Sömnad made the sewing on the pieces for Cheap Monday. Myself did many different operations, unpicing lables, cut of legs, put on new lables, folding , inspection and packing.	To make sure everything was made right and with no remarks.
Resp. 5	I was involved in the garment decoration process	Discussing how the garment decoration process should be made
Resp. 6	I am project manager at XV Production, who handled a part of the re:make production.	Sewing
Resp. 7	Garmentdyeing and washing.	Garmentdyeing

*Table 3 - Respondent answers; Value proposition*

Value Proposition			
Question 1	Question 4	Question 5	Question 6
Resp. 1	In my role at Re:textiles, my customers are compnaies in the textiles and fashion industry  The most important aspect was to create a successful example of scaled up redesign fashion Collection, in order to inspire more companies to engage in this filed, both brands and suppliers.	The relationship is driven by the agenda from the research, and is regulated through a formal agreement.	Fascilitation, know-how and access to network to realise a scaled up redesign production.  Benefits and challanges relate to that we are not a commercial partner. Tee benefit is that we are seen as a neutral partner. The challenge is that we need companies that can dedicate in the projects, both brands and suppliers.

Resp. 2	<p>Always having a consumer first mindset means that we didn't want to make it too complicated.</p> <p>We wanted to show that you can make this type of project, and still make it commercial and wearable.</p>	<p>We try to have a tight communication with our consumers, it was important to be able to explain the project in a way that would be easy to understand.</p>	<p>We offered a collection made to inspire and raise questions on the ways of working with fashion.</p> <p>This was also the main challenge- to set up a production line from scratch with external partners involved.</p>
Resp. 3	<p>We had an open discussion together with Cheap Monday's designer and purchaser where we find solutions together according to the reality which is very different when it comes to how to do and how to produce. I have experience of patternwork, product developing, machinery, sewing, cutting, purchase, selling, calculation and logistic.</p>	<p>Cooperation about product, production and time</p>	<p>It is difficult to find material and right capacity (machines) in Sweden. Limited options to do things also according to pricing</p>
Resp. 4	<p>In one end we had the dye facility and on the other side was the company that put the heat transfer on.</p>	<p>From my opinion we had only relation with Tage Andersson at Corallen and Adrian at Re Textile.</p>	<p>We made from sewing to packaging. The most difficult issue was to leave all threads and not to cut off the trach in legs.</p>
Resp. 5	<p>Finding the right product and pricelevel</p>	<p>It was good</p>	<p>Finding the right product and pricelevel</p>
Resp. 6	<p>Re: textile is my customer. In our collaboration it is important to keep a good dialog during what is possible or not regarding the production. The base garments can be different from each other and it is important to have good instructions of what to do when garments are unlike.</p>	<p>Re: textile is one of our strongest partners. We have been working with them in different kinds of projects for two years. We have a good relationship and we both ensure to keep a good dialog.</p>	<p>We offered some project development but mostly production in this project. A challenge was to source the right material and the sourcing was something we did as well.</p>
Resp. 7	<p>1:st projekt: Cheap Monday 2:nd projekt: XV</p>	<p>1:st projekt: Cheap Monday doesn't exist any longer. 2:nd projekt: With XV we work very closely.</p>	<p>Garment dyeing.</p>

Table 4 - Respondent answers; Value creation

Value Creation				
Question 1	Question 7	Question 8	Question 9	Question 10
Resp. 1	<p>1. Brands (Cheap Monday) - Lacking competences, Resources and processes/routines to work with circular design integrated in the business model. For example, dependence on external retailer is a challenge.</p> <p>2. Raw material source (Berendsen) - Lacking systems and routines for efficient delivery of raw material (even though the infrastructure exists)</p> <p>3. Suppliers (sew, wash, dye, print) - even though it is a distributed set up, the coordination between partners has worked well.</p>	<p>By coordinating the activities in the research project, and communicate the results through different platforms to a larger audience.</p>	<p>Network. Know-how (design, production and marketing)</p>	<p>Workshops, meetings, sorting-activities, Project management.</p>
Resp. 2	<p>Most important partners were Berendsen, Re:Textile and Vice.</p> <p>Berendsen for delivering the material, Re:Textile for project</p>	<p>We wanted to work with a few accounts that we knew could carry the story. If we would offer the project in a too wide distribution we would not be able to make sure that the consumer</p>	<p>The key component, that was also missing, was the sorting stage at Berendsen laundry. If this component was working we</p>	<p>Production and communication?</p>

	management and sorting, and Vice for documentation.	understands what the project is about.	would have a much bigger chance of scaling up the project.	
Resp. 3	New need in laundry to find used garments, to find good small changes that effect design a lot and price as less as possible. People with hole picture understanding , think diffrent then usual.	We used own car and transport companies . We even moved people between productionunits instead of garments . We changed final wearhouse to avoid extra transport. Logistic were a big part of workflow planing.	Idesömnad they did a lot of sewing, cutting and reducing ( took a way buttons and labels) the items were coming and leaving according to a schedule , sometimes things were diffrent in model then decided and new work were forced to do , so pricing were changed during time. Sometimes weee items so bad quality that client did not accept and need to be changed. Many people were involved but worked out quit ok anyway. I was not so involved in the end of the project	Calculation , planing , making flow and support Idesömnad with pricing
Resp. 4	Adrian was the most important partnar.	In boxes.	To follow the instructions we got and make every piece according to that.	Picking up, sew new things and packing
Resp. 5	n/a	n/a	n/a	Produced prints, and we did the garment decoration
Resp. 6	Re:textile was the only partners that we works closely with in this project. We learn allot from each other since they are doing the research behind it and we are handling the production.	Hmm I think we sent it by DHL...	Our studio+ all the machines.	Sewing
Resp. 7	Re:textile and Adrian	By truck	?	?

Table 5 - Respondent answers; Value capture

Value Capture		
Question 1	Question 11	Question 12
Resp. 1	Salary for Project management. Some Product development COSTs (test dying etc)	Results and engagement from companies that fit our Project goals and the indicators in the project application to our financers.
Resp. 2	The raw material is cheap, so the cost is the time for sorting, the cutting and making with a big cost in the dying process.	The cost of total production of these garments where slightly lower than our normal costs, which makes up revenue.  But mainly, this was a way of profiling the brand in the sustainability questions and trying to pilot new ways of working with fashion.
Resp. 3	No cost.	I am involved with more projects
Resp. 4	?	?
Resp. 5	Productioncosts	Sales incomes
Resp. 6	Only our time	It was a good experience for re:make projects in the future. Interesting too make fashion out of workwear...

Resp. 7	Time	To Corporate with other Companys in the branch.
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Table 6 - Respondent answers; Closing questions

Closing questions			
Question 1	Question 13	Question 14	Question 15
Resp. 1	To "invent the Wheel" and get everybody onboard	The available volume of material The existing infrastructue of suppliers that can engage in re-production processes The growing intrest from consumers to buy sustainable Products The growing interest from companies to engage in circular business development	The need for "circular system"- support to ensure volumes of raw material in right quality/yield
Resp. 2	The sorting and consistency of styles we where looking for.	That through working with workwear we can find scalability. This is rare when it comes to repurposing and remaking.	Interesting case, worth further development for sure.
Resp. 3	To find enough garments that were similar to do an efficient production	To learn and be part of branch developing and learn so much as possible .	Pity that cheap Monday closed down and that I did not were part in the end.
Resp. 4	Lets talk about it!	Lets talk about it!	?
Resp. 5	To find the right products / price levels	To get new connections and find new possible customers	n/a
Resp. 6	Sourshing, too choose the right raw material	Too work with other companies	-
Resp. 7	Garmentdyeing polyester.	To be known as a garmentdyer.	.

## **Appendix 2 – Interview guide for semi-structured interviews**

### **Value proposition considerations**

### **Value creation considerations**

### **Value capture considerations**

#### **Ideation**

- To what extent were you involved in generating initial ideas for the Re:workwear project?
- How did the ideation process unfold?
- What were alternative ideas that were considered in this phase?
- Did you have brainstorming sessions? What was the content of these sessions?

#### **Clustering**

- How was decision making process?
- Why did you eventually choose this set up? What were decisive factors and opportunities?
- What were pre-identified challenges?
- How did you identify key resources?
- How did you identify/ develop key activities?

#### **Experimenting**

- Did you work with remanufacturing in any way before? If so, explain.
- How was the collaboration process with the project partners?
- Before launching the pilot, did you have any other try-outs besides the final set up?
- Did you have initial physical samples before launching the pilot?
- Did you have any pre-pilot test project?

#### **Refining**

- What expected problems were encountered during the process?
- Were there any unexpected problems?
- How did you deal with emerging challenges?
- Were there any (major) changes that were made prior to the pilot launch?

#### **Piloting**

- Who was your customer?
- How was the contact with your customer?
- What were challenges and opportunities that became clear during the actual execution of the pilot?
- What were the costs involved for the project?
- How did this project generate revenue?

## Appendix 3 – Coding of semi-structured interviews according to Strauss and Corbin (1990)

### Open Coding

[Example extracts, randomly chosen]

**And, uh, so there was this idea on the table, and you just considered how this one idea could be developed into, like, a real-life pilot so to say.**

*- Uhm, ja. And it was more like, uhm, we know already some things from previous projects that to find the material is actually quite difficult, because, uh, no companies, established companies have the model, or the structure in the warehouse and like that to search things or use things or whatever. So, we focused on that very much to find right qualities we can dye it and, uh, many similar things, what is outgoing from companies and so on. So that was actually mostly talking about that. And, uh, I know the Cheap Monday have already made some prototypes from things what they got. But then, very soon, we agreed that we must start from the material we have somehow.*

Limited access to material

Quality of raw material

Material as starting point

**Yeah. What was maybe the most surprising thing that you encountered or the most challenging thing, uhm, during this process?**

*- I think for me the most surprising thing was to learn that there is just, uh, that they're basically throwing away 200.000 garments each year in Sweden alone, which are perfectly usable garments. – Mhm. Ja. That was completely new to me. And very interesting. Like okay we have something, there is big potential in this. They have like something around 30.000 T-Shirts or something. And then, that's actually T-Shirts that you can work with. So that's super interesting. A big source of material. - Ja. But then, uh, I think the challenge was to, when you don't have the economic incentives in place, it's very hard to get people to work, I mean, for a timeline and a deadline and everything, when they don't, when they do it pro bono, sort of. And, they just do it to be nice, and you can go a bit with that, but in the end, you need everyone involved to get paid. – Ja. Uh, to be able to like maximize and to, to make demands on everyone to deliver on the project. Uh, so I think the sorting, as I wrote earlier in the survey, but the sorting was really the bottle neck, because they were, they didn't have anyone, they don't have a set up for sorting. And they weren't really ready to out a person on sorting just for us. Because they didn't even get paid. Sort of. So, I mean we bought the material, but it was very, very cheap. And we just paid per kilo and it was nothing. So, uh, I think that's, if you wanted to scale this up, then you would need Berendsen to commit to sorting and selling these garments in a proper way. But then it will be totally possible.*

Economic incentives for motivation

Sorting challenge

Involve raw material provider in sorting

# Axial Coding

[Representative summary]

Table 7 - Axial coding

<b>Ideation</b>	<ul style="list-style-type: none"> <li>- Limited access to material</li> <li>- Quality of raw material</li> <li>- Volume uncertainty</li> <li>- Homogenic material input</li> <li>- Material Source as starting point</li> <li>- Great availability of (useful) garments; unsorted</li> <li>- Experience from (past) projects</li> <li>- Experiment with sustainability in fashion</li> <li>- Agility (timelines and production)</li> <li>- Experimenting alongside of regular work (step out of business-as-usual)</li> <li>- Potential of ID-chipped workwear</li> <li>- Competitive advantage</li> <li>- Consumer focus</li> <li>- New sustainable ways of doing business</li> <li>- Sharpen brand profile</li> </ul>
<b>Clustering</b>	<ul style="list-style-type: none"> <li>- Constant discussions, communication and planning</li> <li>- Local availability of material and trims</li> <li>- Supplier selection based on small quantities</li> <li>- Partner selection based on location proximity</li> <li>- Partner selection based on expertise and capabilities</li> <li>- Challenge to find similar garments</li> <li>- Certainty of delivery</li> <li>- Aesthetics</li> <li>- Speed / Time efficiency</li> <li>- Backward calculation for cost and selling price</li> <li>- Network-based partner selection</li> <li>- Close relationship to project lead (Re:textile)</li> <li>- Creative vision of CM for selection of input material</li> <li>- Product flow with delegated responsibilities</li> <li>- Scalability as goal (economic side)</li> <li>- Topicality of workwear (Workwear = Fashion trend)</li> <li>- Clear message</li> <li>- Straight forward design</li> <li>- Decoration process is similar to new garments' decoration process</li> <li>- Environmental aspect of remanufacturing</li> <li>- Product design is key</li> <li>- Re-design may depict a cheaper option to new manufacturing</li> <li>- Opportunity to create value from waste</li> <li>- Small changes can give old pieces a new live</li> <li>- Educate brands on remanufacturing practices</li> <li>- Change consumer mindset towards responsibility of brand</li> <li>- Remanufacturing to contribute to sustainability and make a change</li> <li>- Start up with small steps and pilots to make a change</li> <li>- Besides pilots keep business as usual (to start with)</li> </ul>
<b>Experimenting</b>	<ul style="list-style-type: none"> <li>- Sharing expertise</li> <li>- Set up team and timelines</li> <li>- (Efficient) Collaboration</li> <li>- Time- and cost-effort to remove trims and labels</li> <li>- Sorting as a challenge</li> <li>- Availability and uncertainty of raw material as a challenge</li> <li>- Development of solutions to emerging problems (e.g. dyeing, trims)</li> <li>- Base pricing on experiences and testing</li> <li>- Trial, error and adjust</li> <li>- Sampling prior to launch</li> <li>- Cost implications during tryout</li> <li>- Challenge of spread out location of partners (design in Stockholm)</li> <li>- Remove former labels and replace with new</li> <li>- Uniqueness of remanufacturing project prevents universal system integration</li> </ul>

<b>Refining</b>	<ul style="list-style-type: none"> <li>- Legal issues with branding of workwear</li> <li>- Integrity issues with ID-chipped workwear</li> <li>- Individuals' dedication</li> <li>- Economic incentives for motivation of different partners</li> <li>- Blended materials depict challenge (dyeing)</li> <li>- System issues</li> <li>- Sorting challenge</li> <li>- Uncertainty in distribution</li> <li>- Involve all parties at early stage</li> <li>- Involve sewing studios in design process</li> <li>- Set up strategy early</li> <li>- Remanufacturing is uncertain and different to regular collection</li> <li>- Involve merchandising teams and markets early (sales allocation)</li> <li>- Open to flexibility, but set demands</li> <li>- Decisions based on results from tryouts</li> <li>- New dye practice adapted</li> <li>- Challenge to re sew garments while retaining used look</li> <li>- Pre-sorting saves time</li> </ul>
<b>Piloting</b>	<ul style="list-style-type: none"> <li>- Discussion with other parties and adaption throughout the process</li> <li>- Close discussion w/ designer necessary</li> <li>- Costly and difficult distribution</li> <li>- Problems of reduced orders</li> <li>- Delay of deliveries</li> <li>- Foster circular thinking</li> <li>- Communicate sustainability (story telling)</li> <li>- Involve customer</li> <li>- Estimation-based production</li> <li>- Sewing based on predetermined instructions</li> <li>- Develop more stable (production) plan</li> <li>- Startup thinking</li> <li>- New ways of production</li> <li>- Promote sustainability and CSR activities</li> <li>- Changes throughout sewing process (due to conditions of workwear)</li> <li>- Appearance of workwear influences re-sewing process</li> <li>- Dimensions of raw material influences re-sewing process</li> <li>- Challenge of being inflexible (sewing studio) in decision-making w/o designer</li> <li>- Direct contact and communication with different parties facilitates process</li> <li>- Pricing is crucial</li> <li>- Increase profitability through PR</li> <li>- Need for local production capabilities (flexible capacity)</li> <li>- Issues due to number of parties involved and communication</li> <li>- Difficulties in producing 100% alike garments due to diversity between input material (model)</li> <li>- Redesign pieces are unique</li> <li>- No professional third-party distribution in pilot</li> </ul>

## Selective coding

[Representative summary]

Table 8 - Selective coding

Stages	Codes	Key Statement	Supported by respondent
<b>Ideation</b>	Limited access to material	<i>Input material as the key resources is the starting point to develop remanufacturing BME ideas.</i>	1; 2; 3
	Quality of raw material		1; 3
	Volume uncertainty		2
	Homogenic material input		1; 2; 3
	Material source as starting point		1; 2; 3
	Great availability of (useful) garments; unsorted		1; 2; 3
	Potential of ID-chipped workwear		1; 2
	Experiment with sustainability in fashion	<i>Enhancing sustainability in value creation and proposition is the motivation for remanufacturing BME.</i>	2
	Experimenting alongside of regular work (step out of business as usual)		2
	Competitive advantage		2
	New sustainable ways of doing business		1; 2

	Experience from (past) projects	<i>Enabling factors for value creation is the collaboration between different key partners.</i>	1; 3; 6	
	Agility (timeline and production)		2	
	Discussion and collaboration		1; 3	
	Sharing experiences and work together		3	
	Consumer focus	<i>The existing customer segment is the main focus point throughout the ideating phase.</i>	2	
	Sharpen brand profile		2	
<b>Clustering</b>	Constant discussions, communication and planning	<i>Decision making regarding key activities is rooted in communication with key partners and customer segments.</i>	1; 2; 3; 6	
	Clear message		2	
	Educate brands on remanufacturing practices		6	
	Change consumer mindset towards responsibility of brand		6	
	Close relationship to project lead (Re:textile)	<i>Project key activities are based on the close collaboration with local production key partners.</i>	1; 6	
	Local availability of material and trims		1; 3; 5; 6	
	Supplier selection based on small quantities		3	
	Partner selection based on local proximity		1; 3	
	Partner selection based on expertise and capabilities		1	
	Network-based partner selection		1; 2	
	Challenge to find similar garments	<i>Product specifications play a leading role in the value creation process.</i>	1; 2	
	Aesthetics		1; 3	
	Backwards calculation for costs and selling price		3; 4; 5; 7	
	Creative vision of CM for selection of input material		2; 6	
	Topicality of workwear		2	
	Clear message		2	
	Straight forward design		1; 2	
	Product design is key		1; 7	
	Certainty of delivery		<i>Operational capabilities are crucial in the value creation process for setting up remanufacturing BME.</i>	3; 4
	Speed-/ time-efficiency			1; 3
	Product flow with delegated responsibilities	1; 3		
	Scalability is goal (economic side)	1; 2; 7		
	Decoration process is similar to new garments' decoration process	5		
	Start off with small steps and pilots to make a change	<i>Scope and value propositions in regard to 'sustainability' are defined in advance.</i>	1; 6	
	Besides pilot, keep business as usual		1; 6	
	Remanufacturing to contribute to sustainability (Make a change)		1; 5; 6	
Small changes can give pieces a new life	6			
Opportunity to create value from waste	1; 6			
Re-design may depict a cheaper option to new manufacturing	6			
Environmental aspect of remanufacturing	5; 7			
<b>Experiment</b>	Sharing expertise	<i>Continuous collaboration between key partners is a necessity throughout the first test phase.</i>	1; 5	
	Set up team and timelines		1; 2	
	(Efficient) Collaboration		1; 3	
	Challenge of spread out location of partner		6; 7	
	Uniqueness of remanufacturing prevents universal system integration	<i>The nature of key resources and activities in particular input material and re-manufacturing, form major challenges.</i>	3; 6	
	Availability and uncertainty of input material as a challenge		1; 3	
	Sorting as a challenge		1; 2; 3; 6	
	Time- and cost-effort to remove trims and labels	<i>First process try-outs and sampling uncover value capture (cost structure) inefficiencies.</i>	3; 4	
	Cost implication during tryout		1; 5	

	Remove former labels and replace with new		1; 4		
	Base pricing on experiences and testing	<i>Product sampling requires trial-and-error mindset and the ability to re-think and adjust the value creation process.</i>	3		
	Sampling prior to launch		1; 5		
	Development of solutions to emerging problems		1; 3; 7		
	Test sewing and approval before production		4		
	Trial, error and adjust		1; 2; 7		
<b>Refining</b>	Legal issues with branding of workwear		<i>Emergent legal and ethical issues are refined in regard to key resources.</i>	2; 3; 6	
	Integrity issues with ID-chipped workwear	2			
	Blended material depicts challenge (dyeing)	<i>Adjustments in value proposition, creation and capture emerge as a result of testing.</i>	1; 2; 3		
	Sorting challenge		1; 2; 3; 6		
	Challenge to re sew garments while retaining used look		4		
	Pre-sorting saves time		1; 6		
	New dye practice adapted		7		
	Individuals' dedication		1; 3		
	Economic incentives for motivation of different partners	<i>Close collaboration of key partners required from early stage.</i>	1; 2		
	Involve all parties at early stage		2; 4; 6; 7		
	Involve sewing studios in design process		4; 6		
	Involve merchandising teams and markets early (sales allocations)		2		
	System issues	<i>Flexibility is required in order to face uncertainty related to the value creation process.</i>	3		
	Uncertainty in distribution		1; 2; 6		
	Set up strategy early		2		
	Be flexible but set demands		5		
	Remanufacturing is uncertain and different to regular collection		1; 2		
	Decisions based on results from tryout		1; 7		
	<b>Piloting</b>		Discussion with other parties and adaption throughout the process	<i>Pilot requires close communication between key partners.</i>	1; 2; 5; 6
			Close discussion with designer necessary		1; 6
Direct contact and communication with different parties facilitate process		1; 2; 3; 5; 6; 7			
Costly and difficult distribution		<i>Emergent issues regarding the value creation process hold up the production flow.</i>	1; 3; 6		
Problems of reduced orders			3; 4		
Delay of deliveries			4; 6		
Unsorted input material held up production			1; 4; 6		
Changes throughout the sewing process (due to conditions of input material)			1; 6		
Appearance of input material influences re-sewing process			1; 4; 6		
Dimensions of input material influence re-sewing process			4; 6		
Challenge of being inflexible (sewing studio) in decision making without designer			6		
Issues due to number of parties involved and communication			6		
Difficulties in production 100% alike garments (due to diversity between input material)			4; 6		
Communicate sustainability (story telling)		<i>PR activities focus on communicating the value proposition and strengthening customer relationships.</i>	1; 2		
Involve customer			2		
Promote sustainability and CSR activities			1; 5		
Foster circular thinking			1; 3		
Re-design pieces are unique			1; 6		
Increase profitability through PR			6		
Estimation-based production			2		

	Sewing based on predetermined instructions		1; 4; 6
	Need for local production capabilities (flexible capacities)	<i>The BME differs from the current business model runs alongside the business-as-usual.</i>	1; 3; 5; 6
	No professional third-party distribution in pilot		1; 6
	Production prior to sales order		2
	Pricing is crucial	<i>The success of the BME is dependent on new approaches and mindsets.</i>	6
	Develop more stable production plan		1; 2
	Startup thinking		2
	New ways of production		1; 2
	Re-design pieces are unique		1; 6



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