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CIRCULAR FASHION IN PRACTICE

A qualitative study on circular business model
implementation in the fashion ecosystem

The circular economy entails great challenges and opportunities for the fashion industry. One main aspect of the transition towards circularity is knowing how to capture the value that these new opportunities will create. Currently, the fashion industry is struggling to take concise action when it comes to activating circularity in practice. Thus, looking into circular business models and how the fashion industry is approaching them from a practical perspective becomes essential. In this study, an initial set of principles of circular ecosystem innovation - collaboration, experimentation, and platformization - (Konietzko et al. 2019) are used as a point of departure to understand how circular business models are being implemented across the fashion industry. The findings indicate that the three principles affect and are dependent upon each other, and highlight the relevance of platformization to enable the information sharing required in the transition towards circularity. Furthermore, the empirical evidence indicates that there are dimensions that influence the principles in practice. Based on the qualitative study, our findings suggest that the main dimensions interacting with the three principles are barriers, drivers, and metrics. Finally, the study presents a diverse view on how different practitioners deal with the development and application of these circular business models.

Keywords: circularity, circular economy, ecosystem, circular business models

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1.Introduction

This section sets the background of the study and the state of previous research together with the research gap. Thereafter, it touches upon the purpose of the study and the research question followed by the expected contribution and delimitations.

1.1 Background

“The shift towards circularity is like the industrial revolution, unstoppable and happening in every area of life” Lorenzo Albringhi, Founder & Co-CEO, lablaco

In the fashion industry, a circular economy approach aims to develop a more sustainable and closed-loop system where the goal is to extend the use time of garments and maintain the value of the products and materials as long as possible (Niinimäki, 2018). The circular economy, also understood as circularity, further aims to minimize waste and maximize the use of resources (Geissdoerfer et. al, 2017). As described by the Ellen MacArthur Foundation (EMF), the development of new business models is a fundamental building block for the transition towards a circular economy.

To understand the emergence of new circular business models, it is important to look into the environmental and social impact of the fashion industry. Fashion is the world’s second most polluting industry after oil. Its vast impact is caused by the amount of finite resources that are required to produce clothing. The total greenhouse gas emissions from textiles production, 1.2 billion tons annually, are more than those of all international flights and maritime shipping combined (EMF, 2017.) Given fashion’s complex supply chain, it is important to understand where most of the impact originated. 70% of a garment’s climate impact occurs before the garment even reaches the store and 80% of the said impact comes from the production phase (Mistra Future Fashion (MFF), 2018). This data emphasizes the crucial responsibility suppliers and companies have in driving sustainable change. However, consumers also have a significant role to play as consumer behavior affects demand in the supply chain. The consumption of clothes has doubled, with the average consumer buying 60% more, with each garment being kept for half as long as compared to

2002. In the US market alone, the volume of clothing Americans throw away each year has doubled in the last 20 years, from 7 million to 14 million tons. Out of those, 84% of clothing ends up in landfills or incinerators (Environmental Protection Agency, 2018). This trend is also present in Sweden where a textile volume of 144 000 tons enters the market every year (Bränström, 2021) and the average consumer throws away 8kg of textile yearly (RiSE, 2018).

The creation of new business models can be mainly focused on two areas in the value chain, both upstream –towards raw materials and suppliers activities as well as downstream– consumer-facing activities. In order to reduce the impact upstream in the supply chain, researching and developing new materials and new production processes has been a priority for the fashion industry (Fashion for Good, 2019). To reduce the impact downstream, new innovative recycling processes and new consumption models aimed at the recirculation of clothes are needed, as “the easiest way to reduce impact from clothing consumption is to extend the lifetime of a garment and thereby offsetting new production” (MFF, 2019). Examples of new consumption models include resale, rental, swapping, borrowing, donating, repairing, recycling, and upcycling (lablaco, 2020). Switching towards circularity entails not only environmental benefits but also economical ones (EMF, 2017). Redesigning the current take-make-waste system to a circular one is likely to incentivize innovation and new market opportunities for the different actors across the fashion industry. It is estimated that more than USD 500 billion of value is lost every year due to clothing underutilization and the lack of recycling (EMF, 2017). Further, while the current linear fashion industry is valued at 3 trillion USD, the potential value of a future circular fashion industry is estimated at 5.3 trillion USD (lablaco, 2020).

Although the circular fashion economy entails growing market opportunities, a concern shared by industry stakeholders is how to effectively capture value and practically move forward with implementing change (Nußholz, 2017; Fashion for Good, 2019). Given the complexity of the area, it is believed an industry-wide change towards circularity is only possible through joint efforts at a multi-stakeholder level (Mistra Future Fashion, 2018). In order to facilitate joint efforts, an ecosystem perspective is therefore often adopted as a

framework when approaching circularity to highlight the interdependencies and relationships that affect how change can be achieved.

In recent years, change has also been accelerated by cross-industry collaboration and initiatives such as the UN Fashion Charter, Sustainable Apparel Coalition, Mistra Future Fashion, The Fashion Pact, among others. A collective ambition in these collaborations is to set standards in terms of definition, implementation, and evaluation, for an industry where a shared understanding of sustainability and circularity is currently lacking (Circle Economy, 2020). For the context of this study, the difference between sustainability and circularity is that sustainability refers to the overarching goal of “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 2020), whilst the latter is a way of achieving sustainability and sustainable development.

1.2 Previous Research

The concept of circular economy has grown across various industries including energy, mobility, and food. Fashion is not an exception, in recent years several reports were published addressing this topic. The reports outline the issues surrounding fashion consumption (Global Change Awards, 2020), design strategies (EMF, 2017; Mistra, 2019) new business models (Fashion for Good, 2019; Thread Up, 2020), and frameworks to assess the environmental and social impact of fashion (BOF, 2021; Fashion Revolution, 2020). Retailers, in turn, are launching new initiatives connected to circular business models (abbreviated as CBMs) such as rental, takeback, resale, repair, and recycle. Examples of which are Rent the Runway, Patagonia WornWear, Zalando Circle, H&M Take Care and Collect. In the scope of the Swedish fashion industry, CBMs have mainly emerged in the pre-owned apparel market, which has been growing with the rise of online marketplaces providing integrated services (Mistra, 2019). Hence, with many models surfacing at the same time, it is increasingly complex to assess the practical implications of CBMs, thus, more understanding is required as to which dimensions influence the implementation of said models (Fashion for Good, 2019).

The study aims to fill two research gaps. Firstly, the empirical research gap connected to the implementation of CBMs in the fashion ecosystem. Even though previous research has addressed cases of CBM implementation, having an ecosystem perspective can help to understand the complexities and dynamics that CBM implementation entails. Secondly, the study aims to fill a research gap present in circular ecosystem innovation theory. The authors Konietzko et.al (2019) suggest an initial set of principles to drive circular ecosystem innovation. In the context of the present study, the principles will be juxtaposed with the fashion industry to help understand the development of circularity within the ecosystem.

1.3 Purpose of the Study and Research Question

This study aims to provide insight into a select number of actors in the fashion ecosystem when approaching CBMs. The concept of ecosystem will refer to “communities where firms cannot thrive alone as they are dependent on each other for value creation through cooperation” (Zott & Amit, 2013). Based on Konietzko et al (2019), a business ecosystem is further defined as a “set of actors contributing to a collective outcome”. For the context of this study, the ecosystem actors will encompass government, retailers, brands, service providers, and consumers dealing with circularity in fashion. Additionally, Nußholz (2017) definition of CBM will be used as the reference for this study. For the author, "a circular business model is how a company creates, captures, and delivers value with the value creation logic designed to improve resource efficiency through contributing to extending the useful life of products and parts (e.g., through long-life design, repair, and remanufacturing) and closing material loops." (Nußholz, 2017)

Further, the study builds upon a set of three particular principles for circular ecosystem innovation: collaboration, experimentation, and platformization, firstly developed by authors Konietzko et al (2019). In this study, the set of principles will be used as a lens through which to explore practical approaches to CBMs in the fashion industry, given that CBMs can be a way to achieve change in the circular ecosystem. For clarity, the set of principles by Konietzko et al (2019) will henceforth be referred to as the “Three Principles” (for detail see section 2.4).

The purpose of this study is to portray CBM implementation across different actors in the Swedish fashion industry and to present various dynamics connected to the Three Principles. By drawing upon empirical evidence and business model theory, the study will share different aspects of CBM implementation concerning the Three Principles, and explore how new value can be created through the perspective of different actors. The overarching research question of the study is:

What dimensions influence the implementation of circular business models within fashion ecosystems, and how do the dimensions interact with the Three Principles for circular ecosystem innovation: collaboration, experimentation, and platformization?

1.4 Expected Contribution

The expected contribution of the present study is to create a better understanding of the dimensions present when implementing CBMs through the perspective of different actors in an ecosystem. By sharing a nuanced view of the state of circularity within the fashion industry, more actors can potentially engage in developing and testing new business models. Additionally, the study wishes to explore the interdependence of actors when implementing circularity, aiming to provide insight into possible ways of collaborating. The study also expects to identify future areas of research in relation to the Three Principles, offering practitioners examples of how CBMs can be approached through this perspective.

1.5 Delimitations

The scope of the study is limited to a set of actors mainly present in the Swedish fashion industry. It is important to consider that Sweden is a mature market when it comes to sustainability and sustainable development, thus, the findings might not be applicable to other markets. This study includes actors across different phases of achieving circularity, however, the purpose of the study is not to focus on the differences between actors but rather to discuss to what extent their efforts can be related to the Three Principles on CBM innovation used as the basis of this study.

2. Literary Studies

This section will introduce the existing theories and sources on CBMs, Sustainable Retailing, as well as Sustainability and Circularity in Fashion. The latter part of this section explores the theoretical framework for this study.

An extensive literature review was executed in connection to this study, with the main topics being CBMs and Business Model Innovation. The major concepts presented in each topic are illustrated in Figure 1 describing the state of existing research. A distinction was made between previous academic research which provided a defined view into CBM theory and industry reports which address the current state of sustainability and circularity in the fashion industry. Furthermore, the literature on sustainable retailing should be viewed as an underlying field pertinent to the purpose of this study.

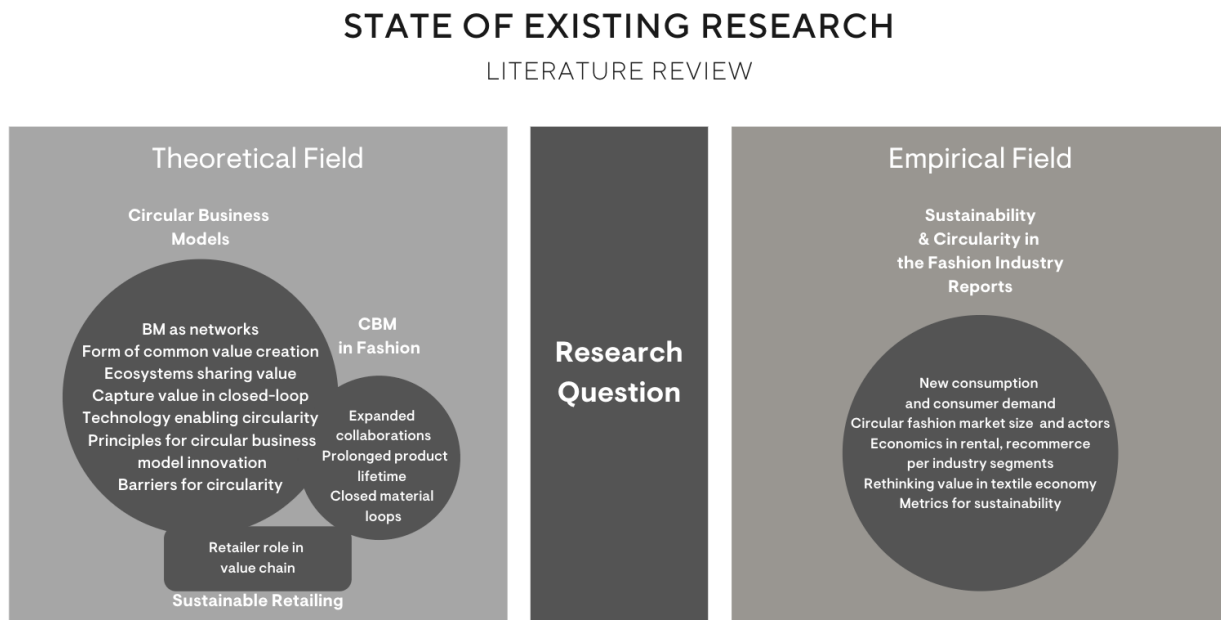


Figure 1. State of Existing Research. Literature Review (Gerdin & Vega, 2021)

2.1 Circular Business Models

Across business model theory the notion of the ecosystem is often highlighted, as value creation in the ecosystem lies in the interdependency and collaboration of actors inside and outside a firm (Zott & Amit, 2013). The notion of ecosystem is closely related to the one of business models as networks, given that many actors are involved in shared value creation. In the context of circular business models, ecosystems and networks are also relevant since one main concept behind circular economy relates to companies having a broader responsibility to engage with multiple stakeholders to make efficient use of finite resources. Hence, this is particularly relevant in the context of CBMs, as actors in the ecosystem are striving towards a common goal connected to sustainable development. Companies are required to rethink their traditional take-make-waste business model into “a more resilient one which is regenerative by design with the aim of gradually decoupling growth” (EMF, 2017). CBMs in turn, focus on slowing, closing and narrowing loops to maintain the embedded economic value for as long as possible, reduce environmental impacts and deliver superior customer value (Bocken, 2019). Furthermore, in CBM theory, the idea of value creation shifts the perspective from “making profits through the sale of products or artifacts” (Lahti et al, 2018) to “making profits from the resources, materials, and products over time, including reusing goods and recycling resources” (Ibid). As previously stated, undertakings in transforming value require “close collaboration and coordination between industrial network actors to achieve close or slow material loops” (Ibid). In addition, previous research emphasizes the gap between the conceptual development of CBMs and the limited understanding of how to implement these business models given the lack of historical data. (Ibid; Nußholz, 2017). Nonetheless, it is important to take into consideration that CBMs are not yet widespread in business practice because of the need to change the key building blocks of the business, as well as the need to go against dominant business paradigms (Bocken, 2019).

2.2 Circular Business Models in Fashion

Over the past few years, several alternative business models have emerged in the fashion industry intending to increase recirculation of products and new ways of consumption. New ways of value creation are relevant in connection to reducing stakeholder’s environmental

impact. For example, reusing and recycling reduce the need for resources such as water, fossil fuels, and chemicals in the production of new clothing (Sandin and Peters, 2018), whilst selling reused clothes requires ten to twenty times less energy than producing new textiles (Fletcher, 2012). Although circular business models are aimed at creating value for the environment, they can also create positive value for society (Stubbs & Cocklin 2008), such as providing higher levels of transparency in the complex value chain of textile production.

Previous research accentuates two areas for circularity in the fashion industry. On the one hand, new value creation needs to stem from the design phase. This entails creating opportunities surrounding new material innovation, product flows, and zero-waste design practices. On the other hand, in the context of the existing products, including the one billion items produced every year (EMF, 2017), new opportunities could emerge from looking into better use of resources and product recirculation through the creation of consumer-facing business models that captures, prevents and eliminates waste, primarily in the area of prolonging product's lifetime (Ibid, 2019). Nonetheless, as highlighted by previous empirical studies (BoF, 2021; Fashion Revolution, 2020), the roadmap towards alternative value creation remains unclear despite the adoption of new business models, since it "remains a challenge to integrate such models beyond their test phase" (Stål & Corvellec, 2016).

2.3 Sustainable Retailing

Implementing change in the fashion industry would not be possible without the commitment from different actors (see section 1.2) including retailers. Retailers hold a unique position in the value chain as they can impact both downstream customers and upstream suppliers. Being the link between both parties, retailers are able to share with suppliers what the customers want and in turn, affect what the suppliers offer to the customer (Vadekkepatt et al, 2020). These relationships should not be overlooked in the context of the behavioral change required to engage in new CBMs.

2.4 Sustainability and Circularity in the Fashion Industry

Given the scarcity of literature connected to the implementation of CBMs in the fashion industry, external sources such as industry reports were analyzed to get a sense of the existing sustainability efforts in fashion and the state of circularity in said industry. The Ellen MacArthur Foundation, *New Textile Economy* (2017), stands out as a primary point of reference as it sets out to define the new market opportunities for the circular economy in the textile industry. Furthermore, it defines the environmental impact connected to linear practices and sets a vision for creating long-term value within the textile industry (Ibid). The most recently published reports on the topic address the market size of the circular fashion industry (lablaco, 2020) and the second-hand market size in Sweden (Mistra, 2019). Additional sources outline specific examples of brands incorporating new models, addressing the main barriers for implementing new business models and assessing the financial viability of rental, subscription-based rental, and recommerce across different segments (Fashion For Good, 2019; Thread Up, Resale Report, 2019). Meanwhile, other reports lay down circularity best practices and present the status of cross-industry collaborations (Global Fashion Agenda, 2020; Fashion Pact, 2020). The main topics around sustainability in the fashion industry include its environmental and social impact, a lack of measurability, collaborative practices, reducing growth, the lack of transparency in fashion's supply chain, and the financing gap connected to the heavy investments for systemic change (BoF, 2021; Fashion Revolution, 2020).

2.5 An Overview of the Three Principles

One article emerged during the literature review and became the lens through which the research question of this study was examined. The Three Principles – collaboration, experimentation, and platformization – proposed by the authors Konietzko et al (2019) encompass how to create and share new value in a circular ecosystem. In the author's study, the principles were used to analyze how a set of practitioners within the shared mobility system of a city implemented circularity in their project. The choice of using Konietzko et al's principals as an initial framework to explore the research question was motivated by a desire to capture the key concepts found throughout the literature review in a model that was also practically applicable. Coauthor of the article, Nancy Bocken, is one of the leading scholars in circular and sustainable business models with over 10000 citations across her

146 publications to date, and with the article in question being quoted 118 times already since its conception in 2019 (Researchgate, 2021). Although the author's study pertains to a different industry, it encourages "identifying opportunities and barriers to applying these principles in different contexts" (Ibid). Thus, it is relevant to explore whether the principles also hold in the context of implementing new CBMs in the fashion ecosystem. Each principle is presented and analyzed below.

2.5.1 Collaboration

In Konietzko et al's study (2019), collaboration "refers to how firms can interact with other organizations in their ecosystem to innovate towards circularity." (Ibid). Given that business and innovation ecosystem perspectives serve to explore "cooperative, comparative and competitive activities of multiple organizations", collaboration is crucial to create new value through alternative business models. Furthermore, the role of collaboration is constantly emphasized as a key enabler of sustainability (Ibid). For the fashion industry, this is not an exception when trying to implement new business models as its actors often seek external collaboration when developing new revenue streams.

2.5.2 Experimentation

Experimentation "refers to how firms can organize a structured trial-and-error process to implement greater circularity" (Ibid). Moving from a linear business model to a circular one entails changing the way the system is currently operating. Collaboration and experimentation are closely related as the creation of new revenue streams require testing new ways of providing value. Furthermore, as pointed out by Konietzko et al (2019), "ecosystem innovation seeks to change how a set of actors collaborate and relate to each other to contribute to a collective outcome" (Ibid). Given that in the case of circularity, the business case for CBMs is still not clearly defined for the actors, testing has become a way of attempting to create new value and reduce uncertainty among the actors (Fashion for Good, 2019). In the context of fashion, implementing CBMs usually occurs through a series of pilot projects.

2.5.3 Platformization

Platformization “refers to how firms can organize social and economic interactions via online platforms to achieve greater circularity” (Ibid). For Konietzko et al (2019), it is also important to look into this factor given that there has been an increased focus on the connectivity within an ecosystem. Platforms help to facilitate innovation among different actors, serving as a base for the exchange of information and organizing economic interactions. Platform ecosystems in turn, “describe how actors organize themselves around common technological and market-oriented platforms” (Ibid). For new business models to thrive, it is important to consider the possibilities that platforms offer in driving and implementing circularity. Given the rise of platformization driving circularity in other industries, as well as the increased use of technologies like blockchain that connect different stakeholders in the fashion supply chain, it becomes relevant to look into this dimension to implement new business models in fashion.

3. Methodology

The following section details the research approach and methodology applied, followed by the selection of ecosystem actors as interview subjects. Subsequently, the execution of the study is presented, taking trustworthiness and authenticity into consideration as qualitative measurements.

3.1 Research approach

As a first step, a comprehensive literature review was performed to gain a greater understanding of the field, and learn the language of the subject area. The review mainly included literature on CBMs, CBMs in Fashion, and Sustainable Retailing (see Section 2) to gain insight into existing theories and models within this particular academic field. The initial literary research generated an area in which empirical study was found limited in terms of the implementation of theoretical frameworks. As the research question itself is closely tied to understanding the practical execution of theoretical CBM concepts, a qualitative approach was chosen to “stress the understanding of the individual perspectives and deepen the perception of their world” (Bryman & Bell, 2017).

3.1.1 Selection of Research Method

A review of relevant literature on qualitative research methodology was performed to find the optimal approach to answer the research question. The Gioia methodology (as described below in Figure 2) was selected to ensure structure to the qualitative approach, as well as allow for new findings to not be rooted or limited to what is already known (Gioia et al, 2012). Conclusively, the qualitative approach was deemed the best choice to acquire a deeper understanding of the issue, and the Gioia methodology was selected to ensure scholarly rigor and transparency to the process. Additionally, an awareness of the limitations and criticisms connected to these methodological choices is important. Qualitative research is a subjective method, meaning that it can be hard to replicate or generalize a study outside of the context in which it was produced (Bryman & Bell, 2017). Further considerations and criteria to evaluate the methodological approach will be discussed in Section 3.4

3.1.2 The Gioia Methodological Process

The research process was set up following the Gioia methodology (see Figure 2). In setting up the research process, a key consideration was allowing for a minimal initial structure going into the empirical research, as this is believed to increase the possibility to discover new things and better capture the perspective of the chosen actors (Gioia et al, 2012).

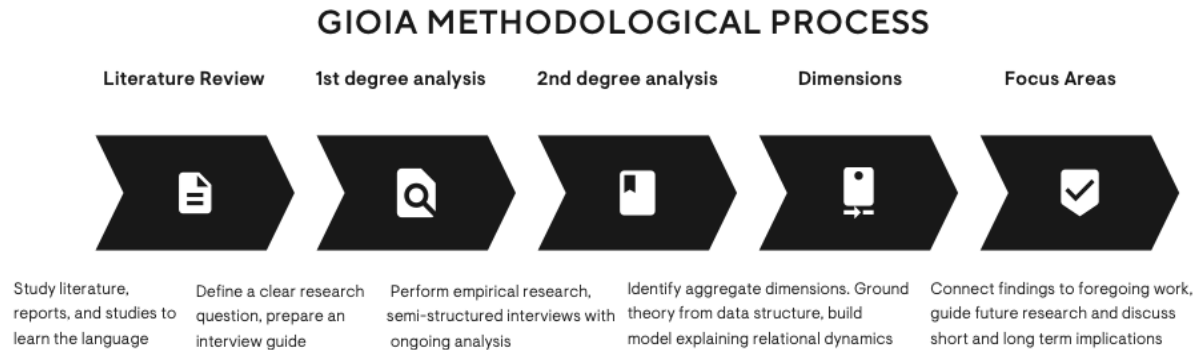


Figure 2. The Gioia Methodological process (Gerdin & Vega, 2021).

This entailed creating a semi-structured interview guide allowing for flexible interviews with the opportunity to search for unique information. The interview questions were constructed around understanding the implementation of CBMs and approached through the lens of the Three Principles of ecosystem innovation given by Konietzko et al (2019), see Section 2.4. As stipulated by the methodology, the empirical gathering was upheld by analytical discipline and transparency, mainly through the creation of a data structure, followed by a rigorous first and second-degree analysis (see Figures 4 and 5 respectively). Drawing out themes and patterns from the empirical data, the focus was then given to identifying concepts that might help describe the CBM implementation. This required going back to the guiding Three Principles of Konietzko et al (2019) and denoting the data that contradicted and expanded the understanding of the Three Principles. As a final part of the analysis, aggregate dimensions were extracted, allowing for new models to be built to hold all the above concepts, themes, and dimensions as well as capture the relational dynamics among them (Gioia et al, 2012). This was displayed firstly at a micro-level(see Figure 6) followed by a macro level (see Figure 7), to encompass the findings both from the perspective of industry actors and the ecosystem as a whole.

3.2 Execution

Prior to the gathering of empirical evidence, research was done regarding qualitative methodology and its requirements. Articles on Gioia methodology (2012) and the literature by Bryman & Bell (2017) were especially considered. Great attention was given to the interview protocol and preparations were undertaken before each interview to ensure the most relevant questions would be asked, and that the methodological approach was being adhered to. As described in Section 3.1.2, the empirical data was gathered through semi-structured interviews, initiated by making contact with relevant actors within the fashion ecosystem. Interview opportunities were mainly facilitated by communication on LinkedIn, a global platform connecting professionals, where an initial introduction message and purpose of the study was conveyed. An interview date was proposed, thereafter the interview was executed over video-communication service Google Meet. Additionally, one interview was performed purely in written format. Follow-up questions or further interaction with interviewees was communicated through a study-specific email.

3.2.1 Data collection

The data collection sprung mainly from a strategic selection, given that the interview subjects were chosen to enable findings within the field of the research question (Bryman & Bell, 2017). In total, 11 in-depth interviews were performed across a wide set of actors and roles to provide a contextual understanding of circularity in the fashion ecosystem. The interviews lasted between 30 min and 1 hour each and were held in English (see Figure 3 for details). The interviews began by asking permission to take notes and informing the participants that all information shared would be anonymous. Both study participants were present for all the interviews. The recording of interviews was decided against to ensure that participants felt free to determine which experiences to expand upon. Hence, extensive notes were taken to capture not only what was being said but also how it was being said. The semi-structured interview approach aligned with the design of the research study, to enable actors in the ecosystem to share a truthful view of their individual perceptions on circularity in practice.

3.2.2 Interview design

The initial questions pertained to the participants' experience with circularity and their background in the field. A definition of circularity was asked for to establish a foundation for the discussion, as well as questions about the development of circular practices in the fashion industry. Thereafter, the focus was on understanding the participants' experiences concerning the Three Principles of CBM innovation. The semi-structured nature of the interview entailed that a broad range of other issues surfaced, with follow-up questions touching upon the barriers and drivers expressed by the participants. Core questions from the interview guide are compiled in Appendix 1.

3.3 Actors and selection

In this section, the requirement profile is stated, and the selection of ecosystem actors is described.

3.3.1 Requirement profile

Aiming to reach a diverse set of actors engaging with circularity in the fashion ecosystem, a joint requirement for all interview subjects was that they had touchpoints with fashion and sustainability. To provide a nuanced view, interview subjects were selected to allow the study to explore the perspectives of Academia, Brands, Civic Society, and Service Providers. Expert interviews with actors in Academia and Civic society, see Figure 3, actors, A, B, C, G, fulfilled the requirements of research backgrounds within Sustainability, touching upon the adjacent academic field of Sustainable Retailing. Obtaining expertise for the research was deemed important, given the complexities the area of CBM implementation holds. The actors defined by the study as offering a Brand perspective, described below in Figure 3 as D, E, F, were all based in Sweden to focus the study on the scope of the Swedish fashion industry. The actors defined by the study as Service Providers were mainly based in Sweden but also extended beyond this scope, as the services offered often require connecting and operating on a multi-national level. All Service Providers filled the requirement of experience from the Swedish market. See Figure 3, actors H, I, J, K.

3.3.2 Selection of Actors

The following figure provides detail on the chosen ecosystem actors.

SELECTION OF ECOSYSTEM ACTORS

Ecosystem	Description	Role	Interviewee	Date	Duration
Academia	Focus areas: Cross-disciplinary research moving the fashion industry towards more sustainable practices	Associate Professor & Research Director at the Center for Sustainability Research	A	23 April 2021	30 min
Academia	Focus areas: Sustainability and the customer perspective	PhD Student	B	19 March 2021	45 min
Academia	Focus areas: Managerially and societally relevant issues in the domains of non-product market strategies, specific interest in the retail sector	Innovation and non-product market strategy researcher	C	23 April 2021	1 h
Brand	Outerwear SME based in Sweden Six employees, 19M SEK turnover	Buyer and product developer	D	26 March 2021	45 min
Brand	Quality menswear SME based in Sweden Ten employees, 44M SEK turnover	Operations and Customer Experience Manager	E	26 March 2021	1 h
Brand	Global fast fashion actor, 120k employees, 210B SEK turnover	Retail Manager	F	19 March 2021	1 h
Civil society	Advocate for sustainable fashion, former senior advisor in textiles for governmental assignment	Sustainable Fashion Advisor	G	1 April 2021	1 h
Service provider	Platform provider connecting all stakeholders through blockchain, offering transparency and circularity Five employees	Founder and CEO	H	19 March 2021	1 h
Service provider	Intermediary for resale, providing logistics and technology 176 employees, 120M SEK turnover	Operations Manager	I	30 April 2021	45 min
Service provider	Accelerator for textile innovation, providing circular solutions for SMEs and public actors 8 employees, 1,3B SEK turnover	Project manager	J	29 April 2021	30 min
Service Provider	B2B consulting, Scaling sustainable supply chain services 40 employees	Business Development Manager	K	9 May 2021	Written interview

Figure 3. Selection of Ecosystem Actors, (Gerdin & Vega, 2021).

3.4 Criticism of Qualitative Methodology

Applying qualitative methodology, it is important to be aware of the criticisms that often are presented. The following section raises the main points of consideration.

Subjectivity: Qualitative studies are criticized for being overly subjective, as results are often influenced by what the researchers view as important. Given that qualitative research often starts with a wide scope only to define the research question further on in the analytical process, some criticize qualitative research questions for being ambiguous and vague (Bryman & Bell, 2017).

Difficulties in replicating: In a qualitative study, it is often the researchers themselves who are the most important tools for data collection, making it problematic to replicate the research. Further, another aspect of qualitative studies that is criticized is that interview subjects are affected by characteristics of the interviewer such as gender, age, and personality (Bryman & Bell, 2017).

Problems generalizing: Due to the subjective and limited nature of qualitative studies, results are often hard to generalize. Studies tend to be small in scope and limited to relatively few interview subjects. The issue highlighted is how the results can be generalized to represent a general conclusion if the participants are not randomly chosen (Bryman & Bell, 2017).

Lack of transparency: Qualitative studies are often criticized for their lack of transparency. This means that it can be hard to establish how the research has been planned and executed. The main criticism pertains to the lack of clarity in the selection of interview subjects as well as understanding the analytical process (Bryman & Bell, 2017).

3.5 Discussion on Methodology

Given the criticism raised towards qualitative methodology as mentioned in section 3.4, the following section evaluates the present research using trustworthiness and authenticity as criteria (Guba & Lincoln, 1994).

3.5.1 Trustworthiness

Credibility: The understanding that there may be more than one way to describe a person's social reality can in turn affect credibility (Bryman & Bell, 2017). In the qualitative approach, there is not one truth being portrayed, but rather many valid perspectives that need to be taken into consideration. Therefore it is crucial to ascertain that the research has been performed according to the methodological requirements. Hence, an effort has been made to display the process in a clear and transparent way.

In the present study, a potential risk to credibility is having data collection in the form of interview notes. To ensure the authenticity of quotes and that the interview subjects' experiences were accurately transcribed, a system was constructed. Throughout the interview, the interviewer would review the extensive notes being taken simultaneously by the note taker, making sure to clarify or add descriptions if needed. A review of the notes was performed at the completion of each interview.

Transferability: Qualitative research is often focused on a small group of people, or individuals with certain characteristics, making the transferability of research findings hard to ascertain (Bryman & Bell, 2017). In this study, all participants were selected on the criteria of having experiences with sustainability in the fashion industry. This could potentially be a barrier to replicating the findings to a wider understanding.

Dependability: The question of dependability pertains to adopting an auditing view of this study. All parts of the study have been executed by both researchers, which to a degree enables a more critical view of the findings (Bryman & Bell, 2017). Further, a supervisor from the Stockholm School of Economics has repeatedly been involved to ensure the quality of the research process. However, the question of external auditing still remains as the main body of data has only been reviewed by the two researchers.

Confirmability: A risk with qualitative studies is that the work is influenced by the researchers' personal values and beliefs (Bryman & Bell, 2017). A clear intention was

therefore set throughout the study to reduce personal bias and hold a willing suspension of belief, striving to make a nuanced and accurate conclusion from the empirical findings.

3.5.2 Authenticity

To achieve the purpose of the study- providing further clarity into the state of circularity in the fashion industry- a diverse set of actors were interviewed in a wide set of roles and competencies to gain a complete picture (see Figure 3) The Three Principles of collaboration, experimentation and platformization were applied in the data collection, whilst using a methodology that allowed for the study participants to share any experiences or learnings they deemed relevant to the field (see Section 3.1.2). As a whole, the combination of literary research alongside in-depth interviews and expert insights has provided for a nuanced analysis. Thus, the findings are believed to provide a just portrayal of perspectives and paint a multifaceted picture of the research field (Bryman & Bell, 2017).

4. Empirical Evidence

In this section the empirical evidence will be presented from the perspective of the four groups of ecosystem actors: 1) Academia, 2) Brands, 3) Civic Society, 4) Service Providers.

4.1 Interview with Academics

This section describes our interviews with ecosystem actors A (Sustainability Researcher), B (Ph.D. Student), C (Retail Researcher), as illustrated in Figure 3. The interview findings are structured according to the Three Principles.

4.1.1 Collaboration

Mentioned by all academics during the interviews was that for research questions on sustainability and CBM implementation, collaboration is crucial. Actor A stated the benefits of having cross-disciplinary projects within the frames of academia to engage all stakeholders in finding a solution. Studies including corporate actors, research partners, business schools, social sciences, engineers, and other stakeholders being broad and varied in terms of discipline, are believed to have a greater chance to address the problems in fashion (Actor A). Another perspective raised was the many tiers and suppliers in the complex value chains and the current lack of sufficient communication sharing and collaboration amongst them (Actor C).

“I strongly believe that collaboration is needed. We live in a world where people have one function, looking into a supply chain with 20 different partners, they all need to collaborate for this to work out” (Actor C).

Additionally, the importance of innovation in order to move towards circularity was discussed, and in this context, collaboration is seen as essential, as idea-sharing across stakeholders can accelerate R&D (Actor B).

4.1.2 Experimentation

Across all three interviews, experimentation was stated as something important but not a primary point of concern as this area is already being developed in the industry. According to Actor C, the aspect of experimentation within CBM innovation is the one that is of the least concern currently.

“Companies are trying new things, the issue is, not for long enough as you are actually trying to change behavior. I can however say with 100% certainty that the aspect that is doing better is the experimentation” (Actor C).

The issue that CBMs, such as secondhand and resale, are still struggling and experimenting to become profitable was mentioned (Actor A). The requirements for an actor to become more circular were discussed from the perspective of academia, stating that you should *“Have more of a startup mindset, being reiterative and ready for change”* (Actor B).

4.1.3 Platformization

Platformization as an underlying premise to achieve circularity was further developed in a discussion about how data sharing between retailers is massively enhanced by technology. The role platformization can have in overcoming the barrier of scalability was highlighted (Actor B).

“Platformization means traceability, and having this means having standards in place that emerges as the bigger issues” (Actor C).

Blockchain was mentioned as the most interesting technology currently that can be used to build a platform, as this has the potential to build trust and encourage sharing without companies worrying about competitive advantage (Actor C).

4.2 Interview with Brands

This section describes our interviews with ecosystem actors D (Outerwear Brand), E (Menswear Brand), F (Fast Fashion Brand), illustrated in Figure 3. The interview findings are structured according to the Three Principles.

4.2.1 Collaboration

For all brands, collaboration emerged as key to achieving circularity. This was illustrated on an industry-wide level, *“There will be an overarching sustainability agenda that all share that will be cross-brand, also amongst competitors”* (Actor F), as well as at the individual brand level with remarks such as *“Without even knowing it we are collaborating with many other brands when we place orders [for sustainable materials]”* (Actor D), and *“We need partners to see what we can recycle”* (Actor E). The necessity to collaborate with partners that have expertise outside of the brand was perceived across all interviews, actor E exemplified solutions within their operations as *“Having a return partner and co-creating the functionalities together from our existing platform.”* A perception shared by all actors was a fundamental shift over the past few years towards an increased willingness to collaborate and share information.

“Five years ago we wouldn’t collaborate but since the demand for transparency has jumped 200% that has changed, I wouldn’t mind sharing information now” (Actor D).

Underlined in discussions was how collaborations between actors can help overcome financial barriers towards circularity, expressed in the words of Actor F as, *“Part of the profits of fast fashion business models are fuelling other initiatives. It’s harder for other companies to do”*. Limiting factors to collaboration such as competition and profitability were also mentioned, with Actor F exemplifying that, *“Collaboration needs to be strategic revenue stream-wise”*, highlighting the financial considerations that remain amongst the actors.

4.2.2 Experimentation

Experimentation as an important part of implementing a CBM was mentioned by all interviewed brands. As part of a strategy towards being more circular, several initiatives were mentioned. Actor E exemplified, *“We did a pilot to try out the incentive models of taking back items.”* Actor D discussed the potential of implementing a rental model by saying that *“We would try a rental model on our classic styles on our own website.”* All interviews mentioned experimentation as an inherent part of implementing CBMs.

Furthermore, the value of experimenting and making use of pilot programs to understand how a brand's products and customers align with the various CBMs available was also emphasized. The understanding was that it is easier for smaller brands to decide on one model based on customer insights and product offering, whilst fast fashion brands servicing a broad range of customers need to test a variety of models in parallel.

4.2.3 Platformization

All brands agreed on technology as fundamental to achieving change. Platformization was expressed as a way to share technology across brands and develop an open and standardized way of using data. Many aspects of circularity are based upon open technology and collaboration, both factors which were highlighted by Actor F when discussing the importance of platformization.

Stressing the impact of a current lack of platformization, Actor D said, *“There is no platform where knowledge is being shared between sourcing managers, nor a solution to help sort out processes that tackle the recycling scalability”*. The impact a platform could have on circularity for the smaller to medium-sized actors in the industry was further discussed in more detail, for example, *“A platform that could be the middle hand if you don't have the resources or a department working with sustainability. A platform that takes ten small Swedish brands and is the middle man between different organizations and factories that can make you be circular”* (Actor D). This was contrasted with the view of fast fashion brand F, where the data sharing across sub-brands is a pressing issue that platformization could bridge.

4.3 Interview with Civic Society

This section describes our interviews with ecosystem actor G (Sustainable Textile Advisor), illustrated in Figure 3. The interview findings are structured according to the Three Principles.

4.3.1 Collaboration

Collaboration between a multitude of stakeholders was described by Actor G as the way to achieve a systematic change towards circularity. The place of the legislator as a collaborator to drive circularity was expanded upon, focusing on the dynamics between legislators and other actors. This was exemplified by a recent case where textiles by law were not allowed to be collected. Yet, brands started implementing take-back programs, breaking the law and thereby driving change in the legislation towards supporting more circular practices. This description by Actor G highlights the position of the legislator not as an early adopter but rather that they are required to create a system that works for most people, as shown by this case where regulations were adapted to allow brands to collect textiles.

4.3.2 Experimentation

From the viewpoint of civic society, experimentation is described as an integral part of developing CBMs and shifting towards a circular system. As described by Actor G, *“We live in a trial and error situation currently”*. Further mentioned was the view that experimentation is about finding the most efficient way of doing things (Actor G).

4.3.3 Platformization

In the context of finding the most efficient platform approach, the multitude of resale platforms operating similar business models with integrated logistics and home delivery was discussed. Additionally, the financial challenges of achieving profitability with a CBM platform were mentioned. The integration of a sustainable structure with the finance department of a business was stressed as vital to achieving circularity in all parts.

4.4 Interview with Service Providers

This part describes our interviews with ecosystem actors H (Blockchain platform), I (Resale Platform), J (Accelerator), illustrated in figure 3. The interview findings are structured according to the Three Principles.

4.4.1 Collaboration

A positive view on the future of CBMs in the fashion industry was expressed in all the interviews with the Service Providers. As stated by Actor H, *“With all the collaboration there is hope and light for the first time”*. Another key insight shared was that most actors have the same main questions when seeking collaborative efforts to become more circular. Highlighting the barrier of putting circularity into practice, Actor J states, *“[It is].. Hard to start, there is no system to start so it's really tough. There have been so many theoretical projects but we want to help them to be practical”*.

The fact that partnering is required to achieve circularity was clearly indicated throughout all interviews. An aspect identified was the different roles of the actors in the ecosystem and the dependency amongst them, Actor I expressed, *“Since a lot of the ecosystem of circularity is really new and the innovations that are driving it comes from specialization (...) it will be several actors making up the system and partnering is required to achieve circularity”*.

4.4.2 Experimentation

From the aspect of an accelerator, Actor J mentioned that the prototypes or pilots they develop for companies seeking help with their CBMs, are important to show that it is possible to do things in a circular way. The success of the experiment is not measured in economic measures, as this is not the focus, but a newly developed measure of circularity is rather being used. This is a central aspect as there are no industry standards to measure success on pilot projects regarding circularity. According to several interviews, most actors understand they need to make changes to thrive, and experimenting is part of this. As mentioned by Actor J, *“You have to evolve when things are changing as it is now, but it depends on company culture, leadership, and size”*.

4.4.3 Platformization

Most Service Providers agree that a platform connecting actors across the entire industry would be highly valuable for implementing circularity. As explained by Actor H, *“This will be a huge shift. This will change as soon as everything is connected and digitized, the way we use our products, the KPIs, the players, the business models and, the power dynamics. There is a blue ocean of data ”*. Actor I discussed an issue concerning the financial barriers to platformization, *“It could be hard as there is so much profitability involved in it, also hard to get everyone on board to share resources as that is giving up competitive advantage.”* Highlighted is the fact that the benefits and concerns to platformization are very different amongst the various actors.

4.5 Empirical evidence not covered by the Three Principles

Something noted by the data is the change in the perception of sustainability. The view of Actor G represents the sentiment of most actors *“Sustainability is not a niche, it is now a hygiene factor, all companies need to have it. At least in Sweden, it is not your main slogan, it is expected.”* Despite the advancements in sustainability, circularity is far from being fully achieved, Actor K pointed out;

“[I am] not sure that we have seen any fully circular business models appear in the industry so far. There is a lot of exploration in terms of re-use, re-sell (rentals), and similar models that aim to prolong the lifetime of a garment. But I wouldn’t call these circular business models, they move the needle towards more sustainable fashion.”

Further, the interviewees also referred to the different drivers pushing change. As stated by Actor H, *“Moving towards a new business model is already on the corporate strategy of the big companies. It is about having big companies and the government commit”*. The role of the government and regulation igniting change was lifted by several actors: *“Regulation drives change and will force brands to change, we need laws to drive this and to change consumption”* (Actor E). On the other hand, some actors highlighted that it is rather big companies who are driving change as opposed to the government. As stated by Actor K, *“Big companies going public with commitments towards circularity is a big*

trigger and really important. But I also believe the true innovations in how to communicate and engage with consumers will come from smaller players.” Finally, consumer awareness was also signaled as a driver *“It’s about shifting consumer mindset, not a business model, but at the moment we want so many things including looking like an influencer”* (Actor G).

The way the take-make-waste system is constructed was highlighted as a barrier for the industry, as Actor H explains *“The waste perspective, the fast turnover in store and fast fashion is the problem of the system (...) there is a lot of organization around awareness, the ecosystem knows this is urgent to do, but a lot of players still don’t know how to step into it.”* Similarly, the current business paradigms were highlighted as an issue by Actor G *“Even as a new business model, you are operating on a playing field that is not set up for you.”*

Additionally, the majority of actors attributed the slow-paced change to a lack of metrics. This view was shared among various interviewees, Actors B, F, and C were of the opinion that there are no standardized metrics that capture long-term value. As mentioned by Actor C *“We need to find an international standard, developing the metrics, raising awareness, and adopting the metrics. Currently, none of the metrics are good, first, you need to identify the issue, then standardize it.”* Actor K pointed out that *“The industry today lacks standardization and comparability which means that a lot of proxy data and assumptions are used, and it’s difficult for brands and consumers to truly understand performance.”* Time and resources were also described as barriers, particularly for Actor E and Actor D. However, on an industry level, information is perceived to be the predominant barrier. Actor C mentioned that:

“The underlying thesis of lack of circularity is information. Everything (...) goes back to the information gap and information asymmetry. If we have clearer information beginning to end, we will achieve circularity. All the principles are a way to address the lack of information.”

ECOSYSTEM VIEW ON THE THREE PRINCIPLES				
Ecosystem	First Degree Analysis			Further insights
	Collaboration	Experimentation	Platformization	
Academia	"Collaboration can help to accelerate R&D by sharing ideas." (Actor B)	"If you want to be more circular you should have a startup mindset, reiterative, ready for change." (B)	"Platformization means traceability, and having this means having standards in place that emerges as the bigger issues." (C)	"A circular business model is not for income but rather a statement and marketing positioning." (B)
	"Looking into a supply chain with 20 different partners, they all need to collaborate for this to work out." (C)	"The aspect that is doing better is experimentation as companies are trying new things." (C)	"The intersection of tech can really help to overcome the barrier of scalability." (B)	"In the fall of 2019, the general interest and growth of these types of models happened." (A)
Brand	"Without knowing it, we are already collaborating with many brands when placing product orders." (D)	"Before collaboration was almost seen as activist ideas, now it is seen as strategically important." (F)	"There is no platform where knowledge is being shared between sourcing managers nor a solution to help sort out processes and that tackles the recycling scalability." (D)	"Not doing this with the main goal of new income, the goal is to be self-sufficient and take responsibility, hope in future there will be profitable advantages." (E)
	"Part of the profits of fast fashion are fuelling other initiatives, but it's harder for other companies to do the same. Collaboration comes to be even more important" (F)	"We did a pilot to try out the incentive models of our take-back program." (C)	"Technology is paramount in driving change. The difference between collaboration and platformization might not be that big. A lot of circularity is based on collaboration and open tech." (F)	"I think there will be different models in parallel with certain connections." (F)
Civic Society	"Five years ago we wouldn't collaborate but since the demand for transparency has jumped 200% that has changed" (D)			
	"There is extended responsibility between big corporations and government that can lead to changing regulation." (G)	"We live in a trial and error situation currently." (G)	"Fashion doesn't have one platform, there are so many, all doing the same thing with tiny differences." (C)	"Sustainability is not a niche, now it's a hygiene factor, all companies need to have it. At least in Sweden, it is not your main slogan, it is expected." (G)
Service Provider	"With all the collaboration there is hope and light for the first time." (H)	"We try to innovate our business model all the time, and we test out how we can do different concepts." (I)	"Blockchain is one of the most important technologies shaping the transition to circularity. Companies need to have a common language for translating the data. It is important to change the narrative of the origin of products." (H)	"The KPIs will be on recycling if you have a coat or leather jacket, the goal there will be to pass on from owner to owner. The metric of success will depend on the product details." (G)
	"Partners are very positive in the sharing information, very win-win, if they can see a business opportunity they are not afraid to share." (I)	"The experimentation depends on what model our partners choose." (J)	"RFID and blockchain are important. It will be so much more important if you have the information on the textiles, traceability and chemicals, but the laws in different countries is a challenge." (C)	"Moving towards a new business model is already on the corporate strategy of big companies." (G)
	"Partnering is required to achieve circularity. Until there is no specialization, there will be several actors making up a system." (J)			

Figure 4. Ecosystem view on the Three Principles (Konietzko et al, 2019). First-degree analysis. (Gerdin & Vega, 2021)

Figure 4 presents a selection of representative quotes from the actors of the study. The data is organized according to the Three Principles and further insights outside of the Three Principles. The selected viewpoints correspond to the first-degree analysis described by the Gioia Methodology (2012), as presented in Section 3.1.2.

5. Analysis

In this section, the empirical evidence according to the Three Principles will be analyzed, discussing their relevance for CBM implementation. Further, the aggregate dimensions extending beyond the Three Principles will be highlighted. Based upon empirical evidence, the analysis will firstly present the findings at a micro-level, giving examples of the dimensions at play for various ecosystem actors. Following that, a macro-level analysis will present the findings at an industry level introducing a new model.

5.1 Analysis of the Three Principles

5.1.1 Collaboration

Customer demand for sustainability has increased and this, in turn, has required a higher degree of transparency in the value chain. To achieve this, collaboration has accelerated. There is a willingness to share information as long as business opportunities are involved, showing a rapid shift in attitude over the past few years. Despite a momentum towards collaborative efforts, competition and positioning are still taken into consideration for most actors, impacting which collaborations are entered into.

Additionally, the necessity of having wider cross-industry collaborations is underlined as it is believed that systemic change towards circularity needs to connect actors at all levels including corporate partners, research partners, business schools, social sciences, regulators, and service providers. Nonetheless, as the different views from the interviewees portray, in a broader context, responsibility and accountability within collaborations remain unclear. Therefore, as some actors pointed out, there is an urgent need of having an overarching agenda that drives change both globally and across the supply chain.

Although the interdependence of actors in an ecosystem is established in previous research, the current analysis points to circularity accentuating the need for specialized knowledge. The specialized knowledge being developed inside of the ecosystem creates niche actors, such as new service providers enabling circular solutions. Established actors, such as fast fashion brands, are also contributing with specialized capabilities such as scalability. Given

that systemic change towards circularity requires scaling CBMs, the collaboration between both niched service providers and established actors becomes crucial for the creation of new value.

5.1.2 Experimentation

The experimentation aspect is found necessary in the context of launching prototypes and pilots to determine whether it is practically possible to operate in a more circular way. Using experimentation to explore if an idea for a CBM is feasible entails both testing CBMs within the realm of the individual actor as well as cross-industry initiatives as expressed by the majority of actors. However, the degree of experimentation is dependent upon particular characteristics such as the size and resources of the actors. Although this principle was the least emphasized by the actors, practical examples of how experimentation is being conducted in the context of CBMs were addressed. For example, for smaller organizations, new resale opportunities are often tested through pop-ups, as this can be implemented at a small scale and relatively low risk. On the other hand, big organizations address experimentation by having the resources to test different CBMs, this however can lead to an inefficient decision process as it is hard to determine the most appropriate CBMs that also have the potential to achieve scale in the marketplace and serve their broad customer range.

5.1.3 Platformization

Currently, the ecosystem is fragmented as there is no overarching platform in fashion where knowledge is being shared and actors with different solutions are connected. The idea of having all players coexisting in one system is found important, as it enables information sharing, as well as facilitates the use of technology to tackle the scalability barrier. Platformization is furthermore believed to address the traceability and data sharing aspect, which is rooted in collaboration. A common view is that blockchain technology could help shape the transition towards circularity. However, getting everyone on board could be hard as the way the current industry is built is not a level playing field, meaning that, leaving dominant business paradigms could entail actors giving up previously held competitive advantages.

In the view of most ecosystem actors, platformization is regarded as a way to enable a circular shift by joining together actors and products through connectivity and digitization. As described by two of the actors, there are currently cross-industry collaborations surrounding the creation of overarching platforms. One such example is a platform that aims to provide a digital marketplace for industrial waste and textiles as well as information and networking among actors. Another example is a platform that aims to connect all the different actors across the value chain, through the use of blockchain to provide a fully traceable product journey and activate CBMs.

Figure 5 presented below visualizes the Three Principles as well as aggregate dimensions of the empirical evidence not covered by the principles. This corresponds to the second-degree analysis proposed by the Gioia methodology (2012).

THREE PRINCIPLES AND AGGREGATE DIMENSIONS

Second Degree Analysis

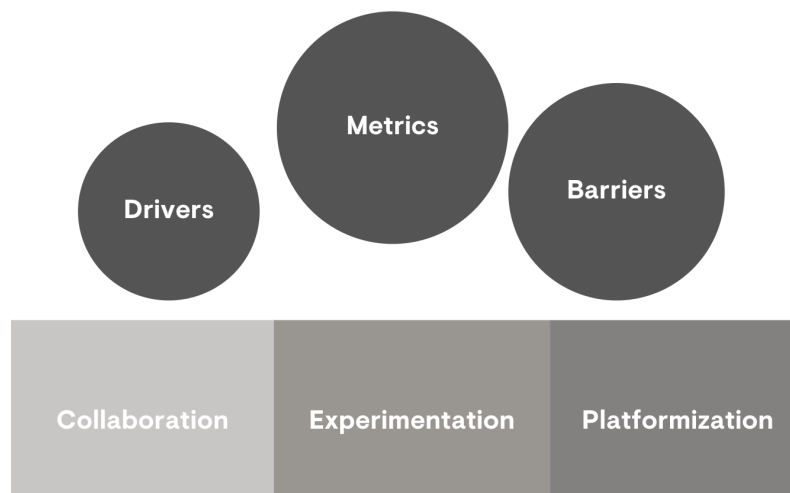


Figure 5, Three Principles (Konietzko et al 2019) and Aggregate Dimensions. (Gerdin & Vega, 2021)

5.2 Analysis of empirical evidence not covered by the Three Principles

There are three main topics lifted by the interviewees aside from the Three Principles. These are the barriers concerning the implementation of new CBMs, the drivers accelerating the transition towards circularity, and the metrics required to make this

transition happen.

5.2.1 Barriers

The empirical evidence uncovered three main barriers: structural barriers, cost-related barriers, and information barriers. Transitioning towards circularity poses several challenges, both for the actors in particular and the ecosystem as a whole. For smaller actors, time and resources are one of the main challenges together with achieving the volumes to make new business models profitable. For all the actors currently operating a CBM, barriers are related to investments in technology and facilities. On a broader scope, there is a structural barrier provided by the complexity of the industry's supply chain, as moving towards circularity is challenging given the disparity between how the industry is currently set up and the requirements for implementing new business models.

There is also a cost barrier associated with the implementation of new business models and sustainability initiatives. Shifting a company's business model requires large investments. This is further accentuated in the empirical evidence where the fact that some CBMs, such as recycling, are still unprofitable. From a consumer perspective, making sustainable products affordable, and thereby largely available to consumers, is a barrier that still needs to be overcome to increase the consumer's demand for sustainable products. This in turn has the potential to affect change among industry actors.

Finally, there is an underlying barrier both for actors and the ecosystem as a whole. This underlying barrier is the lack of information sharing, which stems from the absence of industry standards and best practices. There is no system which allows information sharing on products, available resources, and solutions for incorporating circularity in place; should such a system exist, it could facilitate the implementation of new value creation as well as the reuse of existing inputs and products.

5.2.2 Drivers

Three main drivers of change are highlighted by the interviewees: consumer awareness, large corporations, and government. The pressure on the industry to change is both

external and internal. The external pressure is manifested by the fact that there is a consensus regarding consumers becoming more aware stakeholders and demanding more sustainable products. This creates internal pressure on large companies to change, as they seek customer satisfaction and profit. Thus, significant responsibility for driving change is being placed on such companies since they have the resources to do so. In addition and as suggested by one interviewee, if one fast fashion actor moves, the rest have to follow, triggering each other to change the industry environment. However, as previously mentioned, the role of regulators is even more crucial for creating systemic change as they have the power to both impact change in consumption and incentivize sustainable business practices.

5.2.3 Metrics

The third dimension highlighted by the interviewees is metrics, as metrics are required to incentivize change and measure progress in the context of systemic change. To this end, there are four measurability categories found to be useful. The first category of metrics relates to measuring circular or sustainable products, the second one relates to incorporating sustainability and circularity measurements across an entire corporation, the third category is connected towards shifting profitability measures, whilst the fourth one is related to measuring the long-term perspective of strategic agendas.

Metrics are both a driver and a barrier for change. Measuring results and progress not only pertains to capturing sustainable and circular practices in numbers but modeling a change of mindset as circularity requires integrating a long-term perspective. Therefore, it is important to have a balance of metrics that are looking at change in both the long-term and the short-term. However, one problem lies in the fact that most KPIs are set to measure value in the short-term. Thus, an alternative way of looking at value needs to be developed. Understanding who is designing these metrics and what the metrics are set to measure is also important when trying to manage broader change across an organization and the industry. Additionally, having metrics that capture consumer's willingness to change can lead businesses to implement more sustainable practices. Furthermore, having metrics can reduce the uncertainty of knowing what is being done, what can be expected, and what

result is being pursued. The different type of measurability perspectives uncovered by the interviews are listed below:

Product: One aspect of how actors contemplate measurability is through the materials perspective. Metrics focused on life cycle extension are required as life cycle extension is one of the most effective ways of reducing environmental impact. These metrics should contemplate aspects such as life cycle assessment, focusing on durability and recyclability. Furthermore, the KPIs connected to a business model need to vary depending on the product category and the materials used. For example, a leather jacket might be more durable and therefore suitable for rental whilst a pair of sneakers with higher deterioration are more suitable for recycling.

Corporate: Circularity should be embedded in the company's finance, since, as stated by several interviewees, transitioning into new business models entails having sustainability integrated into the finance side of companies, rather than being organized as a separate department. Thus, sustainability metrics and metrics encouraging the implementation of new CBM need to be at the core of the business to achieve long-term sustainability.

Profitability: Whilst the business case for new business models is something the industry is still looking into, it is important to highlight the fact that sustainability and efficiency go hand in hand, since reducing waste leads to increased efficiency by making more effective use of resources and productivity, which in turn can impact profitability. Therefore, having metrics that go from purchase to usage are required. Examples of this imply going beyond sales metrics. An example could be going from "No. of products sold one-time" to "No. of usages per product over time".

Overarching agenda: Including long horizon metrics is important when measuring the progress of different agendas set across the industry or by regulators. An example of how this could be done is by incorporating long-term effects, and measuring an actor's progress in relation to achieving the 2030 United Nations Sustainable Development Goals (UN, 2020).

5.3 Micro level: Analysis through the perspective of ecosystem actors

Considering the number of actors interviewed for this study and their specific characteristics, implementing a circular business model such as rental or resale can vary according to the actor's nature and its role in the ecosystem. Whilst medium and fast fashion brands are trying to test new models such as rental and resale, service providers, mainly platform-based, are facilitating the implementation of said models. Furthermore, academia is driving an agenda and developing hypotheses together with industry partners. Such hypotheses are put to the test when creating pilot projects or performing research.

Thus, capturing how the different dynamics of the ecosystem are put into play depending on the different dimensions uncovered by the interviews becomes key for understanding the nuances that implementation of these types of models will require. Whilst the purpose of the study is not to visualize the steps of the implementation, Figure 6 offers a micro perspective on how different actors approach CBMs within the ecosystem. The Three Principles and the dimensions uncovered by the study are applied.

As presented by the model, the principles and the dimensions that affect the implementation of different business models vary across the actors in the ecosystem. Every actor is acting in their particular network and has its own set of challenges when developing, implementing, or helping other actors to incorporate CBMs. Therefore, offering a visualization of the practical experience from several actors in the study (Actor E; Actor H and Actor I; Actor F; Actor A presented from top to bottom and left to right) could help others understand how to act accordingly.

ECOSYSTEM PRINCIPLES & DIMENSIONS

Micro Perspective

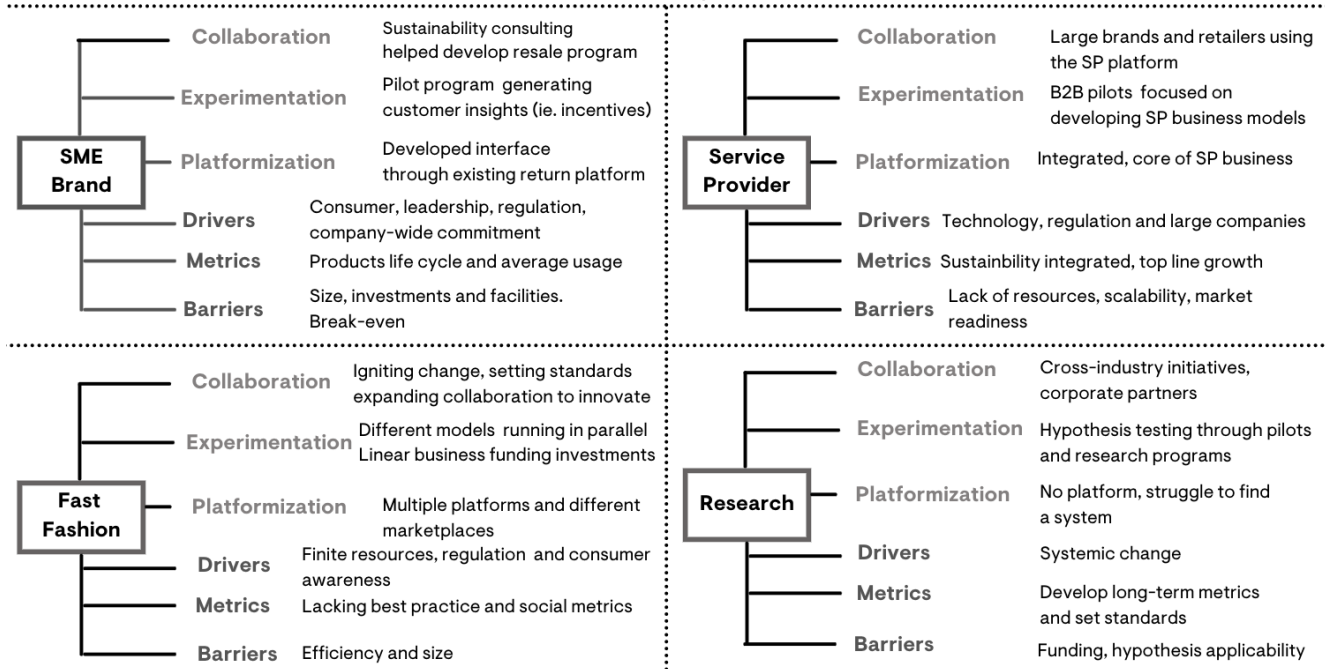


Figure 6. Ecosystem Principles & Dimensions. Micro perspective. (Gerdin & Vega, 2021)

5.4 Macro level: Analysis through the industry perspective

The dimensions that affect CBM implementation, and the dynamics amongst them, can be viewed at an industry-wide level. As designed by the Gioia methodology (2012), a model is constructed as the last step in bridging data with research findings. Therefore, this section will introduce a revised model from a macro perspective, tying together the Three Principles, the dimensions outside said principles and the underlying flow of information that is found to be crucial for the implementation of CBMs.

ECOSYSTEM PRINCIPLES, DIMENSIONS AND DYNAMICS

Macro Perspective

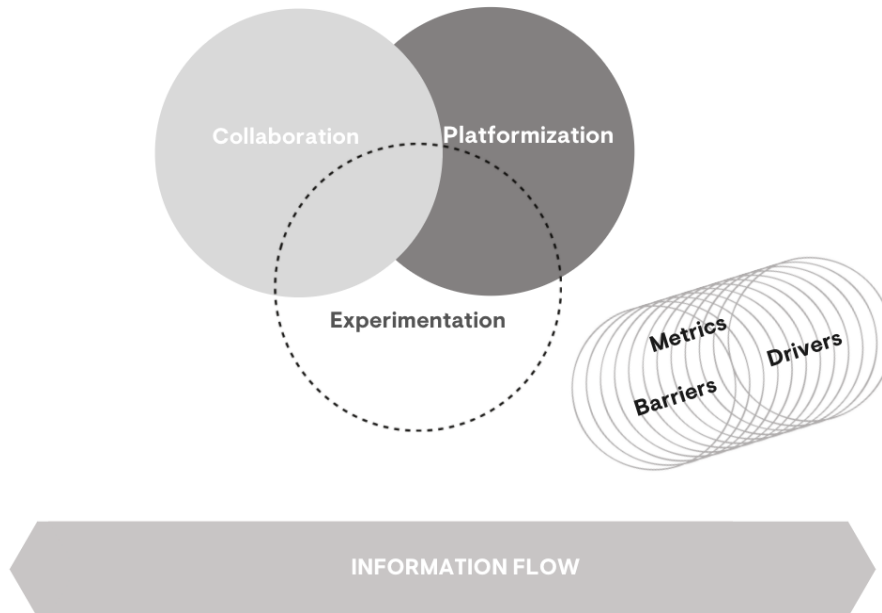


Figure 7. Ecosystem dimensions and dynamics. Macro perspective. (Gerdin & Vega, 2021)

When analyzing empirical evidence, certain clear patterns and relationships that offer more insight into the idea of the Three Principles can be identified. As captured by the empirical evidence, the Three Principles intersect and overlap with each other to a great extent, suggesting that the differences between them are at times not significant. Another conclusion drawn is that in many aspects one principle cannot exist without support from the other, leading to the reasonable conclusion that the principles flow into each other, working as a whole to move circularity forward, rather than acting separately.

“Technology is paramount in driving change. The difference between collaboration and platformization might not be that big” (Actor F)

As expressed by several interview subjects, the Three Principles together affect the shift of circularity at scale. Change cannot happen without platformization supporting collaboration and with experimentation supporting both of the principles. The surrounding dimensions –metrics, barriers, and drivers– are the main forces affecting the three

principles in practice. All three dimensions are present in different ways for each principle, both as the separate aspects of metrics, barriers, and drivers, but also as a whole, creating the dynamic forces affecting the implementation of CBMs in the fashion ecosystem.

A further finding of the study was the information gap that exists and runs through all activities in the ecosystem, affecting both the Three Principles and the dimensions. It was mentioned in various ways by almost all interviewees, indicating the importance of both sharing and distributing information throughout the ecosystem.

“Everything we talked about goes back to information and information asymmetry. If we have clearer information beginning to end, we will achieve circularity. All the pillars are a way to address the lack of information, so how do we get people to share and how do we distribute information” (Actor C).

Collaboration, platformization, and experimentation cannot thrive and create synergies towards circularity without information flow. This holds also on the micro-level for the individual actors where information flow, both in and out, is fundamental to implementing any initiatives towards a CBM. For the ecosystem as a whole, putting standards in place to enable information sharing, including data, is vital for shifting towards circularity. The way to best bridge this information gap is currently the idea of platformization, as this offers both the connectivity and the technology required to fill said information gap. Consequently, platformization runs through the model to highlight the need of addressing the information asymmetry that remains a barrier to circularity.

In conclusion, the model presented in Figure 7 is explained by findings into how the principles feed into each other, and the relational dynamics of the dimensions that act as a force in CBM implementation. Running through the model is also the information flow, highlighting the barrier that information asymmetry entails for all actors in the ecosystem to achieve circularity.

6. Conclusion

The purpose of this qualitative study was to portray CBM implementation across actors in the Swedish fashion industry and to identify dynamics connected to the Three Principles of circular ecosystem innovation - collaboration, experimentation, and platformization - initially developed by authors Konietzko et al (2019). In the context of this study, the Three Principles refer to; Collaboration - “how firms can interact is with other organizations in their ecosystem to innovate towards circularity”, Experimentation - “how firms can organize a structured trial-and-error process to implement greater circularity”, and Platformization - “how firms can organize social and economic interactions via online platforms to achieve greater circularity” (Ibid). Empirical evidence was gathered through eleven in-depth interviews with a diverse set of actors engaging with circularity in the fashion ecosystem. For the purpose of this study, the actors were categorized as Academia, Brands, Civic Society, and Service Providers. By drawing upon empirical evidence, business model theory, and building upon the Three Principles, the following conclusions were found.

Through the research, the analysis of empirical evidence expands the understanding of how the Three Principles interact, as well as identifies the main dimensions that affect the implementation of CBMs in the fashion ecosystem. These dimensions are barriers, drivers, and metrics. Within barriers, the three main issues identified are structural barriers, cost-related barriers, and information barriers. The structural barriers refer to how the current business paradigms are not aligned with transitioning towards a circular economy, the cost-related barriers pertain to the hefty investments needed to move towards circularity, and the information barriers refer to the lack of information sharing and common information standards present in the ecosystem. Within drivers, the three main areas are consumer awareness, large corporations, and government. These refer to the agents triggering change in the ecosystem. Finally, within metrics, the four main categories requiring measurability are identified as product, corporate, profitability, and overarching agenda-related metrics, which are set to assess the level of circularity in each respective category. Whilst previous research established the Three Principles, identifying dimensions

further the understanding of the dynamics affecting CBM implementation in the ecosystem.

Altogether, the Three Principles and the three dimensions that impact circularity in the fashion ecosystem can be understood through both a micro and a macro perspective. The micro perspective contrasts the different views of the principles and dimensions as dependent upon characteristics of respective brands, service providers, or academia. This, in turn, strengthens the view of interdependence amongst actors when trying to implement CBMs and in the context of the circular economy. The macro perspective captures how the Three Principles and dimensions interact on an industry-wide level. The study establishes that collaboration, experimentation, and platformization are in practice overlapping principles, with experimentation being dependent on collaboration and platformization. While collaboration enables experimentation, platformization allows for experimentation to scale. Further, the study concludes that one principle cannot exist without support from the other, leading to the assumption that the principles flow into each other, working as a whole to move circularity forward.

The study establishes that throughout the entire ecosystem there is an information gap. The finding of this gap provides insight into a major obstacle to achieving circularity, highlighting how crucial the sharing and distributing of information is to the many challenges circularity entails. Thus, a key takeaway from this study is the importance of platformization, as this offers a solution to sharing and distributing information and data at scale, highlighting the current lack of such a platform at a cross-industry level.

7. Discussion

The following section will discuss the Theoretical Contribution, Managerial Implications, Limitations & Further Research.

7.1 Theoretical Contribution

The present study fills a research gap between CBM innovation theory and empirical research on CBM implementation in the fashion industry (Figure 1). The study contributes to the theories of circular ecosystem innovation and the set of Three Principles proposed by Konietzko et al (2019) by building on the theory and creating two models. Together, Figure 6 and Figure 7, encompass the Swedish fashion ecosystem's perception of the Three Principles. Additionally, the models capture how said principles are put into practice. Furthermore, the study contributes to the Three Principles theory by applying the principles in a new industry context and adding three dimensions stemming from the data gathered. The study expands upon empirical research on CBM implementation by presenting a diverse view on how different practitioners deal with the development and application of CBMs. Finally, the dynamics uncovered by the study strengthen the notion of ecosystem interdependence addressed in business model theory as exemplified by the micro and macro perspective presented.

7.2 Managerial Implications

Based on the findings of the study, there are several challenges and potential avenues for the fashion industry in the context of CBM implementation. The three dimensions uncovered by the study - barriers, drivers, and metrics - are connected to the main challenges as it is important for practitioners to consider the hindrances and motives as well as the way of measuring new circularity-related initiatives. For practitioners, the categories of metrics are relevant to take into account when developing a CBM, as the application of those metrics lies purely in the hands of managers.

Practitioners can approach the models summarizing the findings in two different ways. Firstly, the model capturing the micro perspective (Figure 6), can be used as a point of

reference to gain an understanding of different cases pertaining to circularity in practice. This model exemplifies how - collaboration, experimentation, platformization, barriers, drivers, and metrics - vary depending upon the type of actor and relationships between them. Secondly, as presented in Figure 7, the Three Principles and dimensions operate closely on an industry-wide level. The study shows that collaboration is relatively established, with most actors having an increasing degree of openness and acknowledging its importance, while experimentation is a principle being widely developed. Therefore, the findings of this study emphasize the importance of creating an industry-wide platform where standardized data sharing among actors is possible. As a response to the need for platformization, practitioners could look into the type of data required for creating common standards, as well as which partnerships to enter into, especially considering the growing number of service providers using blockchain technology to enable similar platforms and solutions.

7.3 Limitations & Further Research

This study has several limitations. Firstly, the small selection of actors, with a high degree of knowledge in sustainability, suggests that findings risk not being representative in a broader context. This is because perspectives, as well as the level of sustainability and circularity achieved amongst actors, can vary greatly. Overall, generalizable findings are hard to draw from a small group of actors. However, with the Swedish market being relatively mature in terms of sustainability, it is still believed that certain findings can benefit a wider set of industry practitioners. Secondly, the ecosystem perspective is represented by eleven interview subjects. The limited number of interview subjects entails limitations pertaining to how well the ecosystem perspective truly has been captured.

Based on the study, there are some recommendations for further research.

As previously noted, Figure 6 and Figure 7 portray the dimensions and dynamics present when implementing CBMs. Future research could look into the models presented in said Figures to elucidate additional dynamics or dimensions perceived by practitioners and the industry as a whole. Further research is required to better understand how and if dimensions vary depending on the characteristics of the actors, further exploring this across

a larger set of actors to draw findings that are more generally applicable to the ecosystem perspective. Additionally, such research could look into whether the maturity of an actor in terms of sustainability and circularity could impact the dimensions and the way the actor approaches CBMs. To enable more actors to move towards circularity, a suggested area for research would be developing metrics, as this could provide incentives as well as tools for overcoming the challenges of defining and measuring sustainability efforts. For this, the measurability perspectives presented under section 5.2.3 could be regarded as a point of reference. Furthermore, research could look into how the retailer's unique position as an information holder between suppliers and consumers could help in bridging the information gap, more specifically by studying and developing the platformization aspect.

Finally, a crucial area of research is the extent to which new CBMs offset a company's social and environmental impact. Even though circularity can help change the industry's take-make-waste model, overconsumption and overproduction should not be overlooked in the context of systemic change. Thus, further research is required to analyze the total effect of the different CBMs in relation to the industry's overproduction and overconsumption problem. For this, research connected to retailing, specifically within the context of marketing communications and consumer behavior, could be pursued.

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9. Appendices

APPENDIX 1

Example of Interview Questions with Ecosystem Actors

- How have you come into contact with circularity through your role?
- Where do you see the fastest changes for the fashion industry moving into circularity?
- What would an ideal platform look like where different actors in the ecosystem collaborate to enable circularity?
- What ways have you encountered for companies to move from their core business model towards more sustainable or circular operations?