

Exploring Business Model Innovation for Closed Loop Fashion

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1. Introduction

The fashion industry is considered a resource intensive industry having environmental and social impacts along the entire value chain. These impacts do not occur only during material sourcing and production phases, but also extend to the consumption and disposal phases, which accounts for the largest share of waste in the clothing sector. At the same time, vast majority of the fashion industry currently operates a linear production model, based on take-make-waste rationale with a large proportion of all items ending in global landfills (Ellen MacArthur Foundation 2013). It is estimated that across Europe and North America 15 million tons of garments are discarded annually and end up in landfills (ibid). In the context of increasing amounts of textile waste, the world's decreasing natural resources and the industry's growing need for raw materials it is increasingly apparent that industry's business as usual is not an option and companies need to incorporate a closed loop perspective in their current business models. A recent UN Global Compact study among world business leaders on sustainability demonstrate that closed loop business models, with their aim to decouple growth from resource use, environmental and social impact, are increasingly attractive to companies seeking disruptive innovation in the search for sustainability impact and business value (Accenture, UN Global Compact 2013).

This is also an emerging trend in the fashion industry. Historically, once the garments were sold, companies did not regard these as part of their system and responsibility, however, this is about to change and taking responsibility for the post-retail phases of products is an emerging phenomenon for the fashion industry (Kant Hvass, forthcoming 2013). In parallel with policy-driven Extended Producer Responsibility (EPR) initiatives for textiles, pioneered by French self-financing entity, EcoTLC (Kelly 2012), which engages the fashion industry in the recycling of their products at the end of their usage, the last years have also brought several voluntary industry-driven EPR initiatives or business model innovations to the market that focus on reuse and recycling of garments. Good examples are Marks and Spencer's, Schwopping initiative, in collaboration with charity organization Oxfam, or H&M's take-back initiative with global collection company I:Co. There are also companies who operate business models based on closed-loop supply chain (Wells, Seitz 2005), such as Patagonia and Nike, who collect their post-consumer products, ship them back to a fiber mill for chemical recycling into new fibers, which are then manufactured into new products again to be sold to Nike and Patagonia customers (Ulasewicz, Baugh 2013). PUMA provides another good example with their new InCycle closed-loop collection of biodegradable or recyclable shoes (Ecotextile News 2013). However, despite the several emerging initiatives and business model innovations, the field is still in its' infants and best practices are rare.

Research in the context of sustainability and business models is relatively new and even though several authors have tried to integrate sustainability into the business model concept, understanding of sustainable business models and how sustainable development is operationalized in firms is still

weak (Stubbs, Cocklin 2008). In addition, the existing literature seldom considers product's life cycle aspects. While academia is lacking an interdisciplinary approach on how to tackle complex sustainability issues at an organizational and industry level, the industry is struggling to find sustainable practices that would consider a whole life cycle approach to products. The main objective of this paper is to explore the relationship between business models and closed loop systems from a fashion brand's perspective and how to integrate the management of post-consumer textile waste into fashion companies' business models.

2. Methodology

It is argued that closed loop characteristics are highly conditional on product type and contextual factors (Wells, Seitz 2005) and in order to understand the industry-relevant issues of closed loop systems, it is important to collaborate with practitioners, which advances both academia and practice (Guide, Van Wassenhove 2009). This research follows this path and applies an engaged scholarship strategy, which is a participative form of research for obtaining different perspectives of key stakeholders in studying complex problems and which creates knowledge with practitioners for practitioners and academia (Van de Ven 2007).

The research method is longitudinal in-depth case study of a Scandinavian male fashion brand who is in the process of implementing a product return system in their retail network and investigates opportunities for remanufacturing the collected products into new collections in the future. Over the last two years the author has conducted numerous interviews with top and middle level managers of the company, has participated in developing the product return system, attended several internal meetings, have had access to internal documents and had reflective discussions about these issues with the involved employees. In addition, several interviews have been conducted with other relevant stakeholders of the product take-back and closed loop system. The case study is still in progress and the findings presented in this paper are preliminary and subject to further elaboration.

3. Case company

At this point the case company is anonymous in the study and referred to as company X. The company was founded in 1990 and is today one of Europe's leading producers of jeans and casual menswear with more than one thousand stores in 45 countries. In addition, the brand's clothes are sold by thousands of wholesale partners all over the world. The company's turnover in 2010/2011 was 817 million USD. The brand belongs to a family owned business together with 10 other brands. Company X claims to offer fast and affordable fashion to the medium-price market segment.

For the last couple of years, company X has worked with developing methods to lower impacts from denim production and launched in 2012 a range of low-impact denim products that have been produced with less energy, waste and water consumption. A logical progression to the low impact denim initiative was to expand the concept to the post retail phase and develop an in-store product collection system of their products in collaboration with an external partner. The objective with this initiative was to support more reuse and recycling of garments. While the take-back concept is in the implementation phase the brand is also investigating the possibilities of utilizing low-value post-consumer textile waste in their future collections. Both the take-back initiative and closed loop value chain are of interest in this research.

4. Theoretical framework

This paper takes departure from the existing business model literature with focus on sustainability, combined with literature on reverse logistics and closed loop value chains. It aims to link end-of-life and close loop issues with companies' business models.

4.1. Business models

Research in business models is not a new phenomenon and several authors have proposed definitions and theoretical frameworks for the term (for more see (Osterwalder, Pigneur & Tucci 2005, Perkmann, Spicer 2010, Zott, Amit & Massa 2011)).

Osterwalder et al. (2005) have defined business models as a conceptual tool to assist in understanding how a firm does business, for analyses, comparison, performance assessment, management of communication, and to assist firms in their innovation. Traditional business model research concentrates mainly on generation and delivery of economic value, whereas sustainability-oriented business model literature suggests a holistic approach where economic value is captured through delivering social and environmental benefits (Lüdeke-Freund 2009). From a sustainability perspective, it is important for companies to investigate the value of their products also during the use and end-of-life phase and how to capture that value. This raises questions regarding what alternative products/services fashion companies can develop to prolong the life-cycle of their products and minimize the textile waste. For example, product take-back schemes run by fashion retailers provide a valuable opportunity to build a stronger relationship with their customers and study the durability and quality of the used products that is useful input for development of closed loop product design, remanufacturing and remarketing.

There is a list of issues that need to be addressed from the fashion company’s perspective when innovating their current business models and entering the use and end-of-life phases of their products. In order to address the closed loop fashion system from a business model perspective the author has chosen the five-pillar template for business models for sustainability, initially developed by Osterwalder (2004) and further developed by a fifth element – non-market aspects - by Lüdeke-Freund (2009). This framework will be analysed in relation to closed loop supply chains of fashion.

Table 1: Business model for sustainability (Osterwalder 2004, Lüdeke-Freund 2009)

Business element	model	Description
Product		Overview of products and services a company offers to its customers and their value
Customer interface		Description of segment(s) of customers a company wants to offer value to and means of how to get in contact with the customers.
Infrastructure management		Key activities, internal and external resources that are necessary to create value
Financial aspects		Describes the process through which a company makes and manages its money
Non-market aspects		Describes the value that is created with and for society and the environment when a business model is applied

4.2. Closed loop supply chain for fashion

The closed loop system focuses on taking products back from customers for reuse, repair, recycling and remanufacturing and it encompasses several activities and actors. It links the traditional forward supply chain activities with reverse supply chain activities (Morana, Seuring 2007). Closed loop supply chain is not an unknown phenomenon for the research community and several authors have studied the field (for more works see Guide, Van Wassenhove 2009, Savaskan, Bhattacharya & Van Wassenhove 2004, Wells, Seitz 2005) . Yet, closed loop research within fashion and garments is a relatively new field of study and only a few works can be found that focus entirely on textiles and garments. Morana and Seuring (2007) studied the recycling network, ECOLOG, a closed loop supply chain for polyester apparel. The case study showed that even though the closed loop system was technically sound and economically viable if used products were obtained, customer return behaviour was not

considered appropriately and the whole initiative failed. It is therefore important to have a holistic approach to closed loop clothing systems that considers internal organizational processes and capabilities, as well as, wider contextual factors, such as consumer behaviour and their engagement, infrastructure and market readiness.

Since traditional fashion companies' business models mainly focus on creating and capturing value from the sale of new products, aspects related to reverse logistics and end-of-life of products are not usually part of the existing business models. However, when aiming to create a closed loop fashion system, it requires business model thinking that links various disciplinary perspectives in order to address the following questions (Guide, Van Wassenhove 2009):

- 1) Is there sufficient access to used products (product returns management)?
- 2) Can value be recovered from returns at a reasonable cost (remanufacturing)?
- 3) Does anyone want to buy remanufactured products (market development)?

Guide and Van Wassenhove (2009) provide a business process view of a closed loop supply chain, which links internal and external factors and tries to deal with these questions. They distinguish three sub-processes (Figure 2), namely product returns management (Front End), remanufacturing operational issues (Engine) and remanufactured products market development (Back End), which by their names suggest a linear approach, however, the authors highlight, that only when these three processes are managed in a coordinated fashion, the value in these systems can be fully realized. In practice, for example, a lack of access to used products or technical manufacturing issues can inhibit the whole closed loop system.

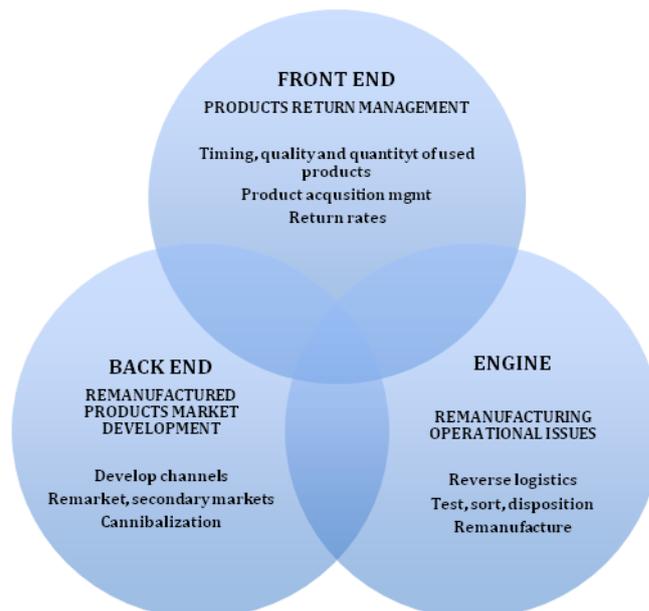


Figure 1: A business process view of a closed loop supply chain (Guide, Van Wassenhove 2009).

5. Preliminary findings and discussion

Guide and Van Wassenhove's business process view (2009) addresses very important issues from a fashion business perspective and in order to deal with these questions, a business model framework serves as a valuable tool that is holistic and links both internal and external activities of a company. Table 3 provides a preliminary framework that integrates the closed loop supply chain issues (Figure 1) with business model elements (Table 1) and addresses key issues that are relevant for a fashion company to address while developing a closed loop business model for their products. The table builds upon theories and preliminary findings from the case study.

Sustainable Innovation 2013

Table 2: Closed loop business model framework for fashion (author's own creation combined with works by (Osterwalder 2004, Lüdeke-Freund 2009, Guide, Van Wassenhove 2009)

Business model elements	FRONT END Product returns management	ENGINE Remanufacturing operational issues	BACK END Remanufactured products market development
Value proposition	<ul style="list-style-type: none"> • Quality of end-of-use and end-of-life products • Products' marginal value of time (MVT) • Easy and attractive product return systems 	<ul style="list-style-type: none"> • Fiber content and chemical issues • Recycled fiber quality • Product innovation 	<ul style="list-style-type: none"> • Product innovation • Storytelling
Customer interface	<ul style="list-style-type: none"> • In-store communication • Customer motivation and engagement • Consumer segment's behaviour in terms of recycling 	<ul style="list-style-type: none"> • Business customers for remanufacturing leftovers 	<ul style="list-style-type: none"> • Customer loyalty and new customer segments • Communication strategy and marketing tools • Redistribution channels
Business Infrastructure	<ul style="list-style-type: none"> • Available resources and know-how for setting up a return system • Internal product returns' management • Partnership needs 	<ul style="list-style-type: none"> • Integration of reverse logistics with forward logistics • Know-how and resources for product sorting, disassembly and remanufacturing • Partnership needs for sorting, disassembly and remanufacturing 	
Financial aspects	<ul style="list-style-type: none"> • Cost of the incentive system • Cost of collection • Potential income from resell of products (if applicable) 	<ul style="list-style-type: none"> • Cost of sorting, disassembly and remanufacturing 	<ul style="list-style-type: none"> • Income from sales • Cost of marketing and communication
Non-market aspects	<ul style="list-style-type: none"> • Participation in public debates and societal projects on sustainable consumption and recycling 	<ul style="list-style-type: none"> • Decreased textile waste from landfills 	<ul style="list-style-type: none"> • Efficient use of natural resources • Positive CO2 impact

Guide and Van Hassenhove (2009) suggest that the main drivers for closed loop supply chain system design are the volume of returns, the marginal value of time (MVT) and the quality of returned products. The MVT describes the remaining value of a product after a certain period of use (Morana, Seuring 2007). When planning a closed loop system for products an analysis of the company's value

proposition, for the customers, company and wider public, should be the starting point in order to plan the further activities. The returned product's quality is central to assess a product's MVT and whether the products have reuse value as they are, whether that can be captured, for instance through second hand retail platforms, or should the products be immediately transferred to remanufacturing.

The ability to guarantee sufficient volume of returns is another important aspect. The return of used clothes back to the store is a new behaviour expected from consumers and therefore the return system has to be convenient, incentivised and well communicated. Consumers usually tend to bring their old and unwanted clothes to local charities, flea markets, give them to friends and family or throw them away, depending on the cultural context and recycling infrastructure. Earlier research (Morana, Seuring 2007) and preliminary findings from this case study show that influencing consumer behaviour is the most challenging aspect in managing product returns which can make supply volatile. Furthermore, while many fashion brands own their own retail stores there are also many that sell through franchise, department stores and other outlets. To engage these outlets in a return system requires further study.

One of the key issues for fashion retailers who want to engage with product-take back is to choose the appropriate reverse channel structure that matches their company's needs (Savaskan, Bhattacharya & Van Wassenhove 2004) . Furthermore, setting up a system requires new resources and competencies. A partnership with another industry stakeholder may be a solution. Current examples from the industry show two main patterns for organizing the product take back: a collaboration with a professional collector (e.g. H&M and I:Co) or a donation partnership with a well-known charity organization (e.g. Marks & Spencer and Oxfam) (Kant Hvass 2013) . The current case company investigated partnership opportunities within the charity industry. However, the organizational landscape of charity organizations can differ from country to country, and reuse and donation traditions vary in different cultural contexts, meaning that building relationships with charities in different markets can be complex and resource intensive. As the case company is represented in many international markets it ended up in a partnership with a professional third-party collector that allows the company to concentrate on their core activities.

6. Conclusion

Knowledge on how to integrate sustainability goals and aspects in daily business is an area that needs more input. The aim of this conference paper is to provide a framework for better understanding of how to link product end-of-life issues in the context of textile recycling into fashion companies' business models. A specific focus was paid towards building a closed loop supply chain for fashion garments. The framework (Table 2) presented in the paper is based on preliminary findings from a case study of one Scandinavian leading denim brand and its experiences from setting up a product take-back system and developing a system for remanufacturing and remarketing of closed loop products. The case study is on-going and therefore the findings presented here are subject to further elaboration. The intention is to further develop the closed loop business model framework through deeper analysis of the collected data, additional data collection regarding remanufacturing and market development for remanufactured products, and further operationalization of the framework in industry contexts.

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