



The reDesign canvas: Fashion design as a tool for sustainability

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ABSTRACT

Many of the existing tools for design in a sustainable fashion context are too complex, overly conceptual, require experts to apply, have a high cost, were created for large corporations, or fall short in holistically supporting sustainable fashion design entrepreneurial practices. Micro-sized enterprises represent a significant portion of the fashion industry and can meaningfully contribute to the transition to a more sustainable apparel and textile industry. This paper addresses this gap through the development of an original design tool, the reDesign canvas, to support design entrepreneurs in developing sustainable fashion enterprises. Informed by design thinking and systems thinking, the canvas was developed based on an in-depth review of the academic literature and the collection of qualitative data. Qualitative data were gathered through both participatory action research (PAR) and interviews with 38 sustainable fashion design entrepreneurs and experts in sustainable fashion. Both the PAR and the interviews were used to test and refine the reDesign canvas in order to ensure it meets the needs of sustainable design entrepreneurs operating micro-sized companies. The final version of the canvas is based on 12 building blocks that a design entrepreneur would encounter in building a sustainable fashion brand. The reDesign canvas can help advance both the theory and practice of sustainable fashion design.

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1. Introduction

The production, consumption and disposal of apparel products has a number of negative environmental and social impacts. These impacts are expected to grow substantially in the coming years. [Global Fashion Agenda and Boston Consulting Group \(2017\)](#) “project that the overall apparel consumption will rise by 63%, from 62 million tons today to 102 million tons in 2030 – an equivalent of more than 500 billion T-shirts” (p. 9). As it stands currently, only 20% of clothing is collected for reuse or recycling, with the vast majority eventually ending up in landfills ([Global Fashion Agenda and Boston Consulting Group, 2017](#)).

Responses to the wide-scale negative environmental and social impacts of the fashion industry have been reactive and focused on piecemeal strategies that lack a cohesive perspective. These responses have also focused predominately on technological and cost aspects related to the production of apparel. Products are designed

and produced for rapid trend turnovers through obsolescence and premature disposal, thereby enabling quick profits – rather than rethinking how design and manufacturing can incorporate consumer needs and sustainability ([Niinimäki and Hassi, 2011](#)). However, the idea of what sustainable fashion is and how it fits within the industry continues to evolve. This translates into an assortment of visions, ideas, processes and products associated with sustainable fashion.

There is no generally accepted definition of sustainable fashion. Most definitions of sustainable business activity directly build on the definition of sustainable development provided in the Brundtland report (*Our Common Future*) from 1987: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” ([WCED, 1987](#), p. 43). The report also identifies three dimensions that form the basis of sustainability: economic, environmental and social. Many researchers, particularly proponents of the “triple bottom line” ([Elkington, 1997](#)), interpret sustainability as requiring equal consideration and integration of those three dimensions in the decision-making process. Others, particularly proponents of the embedded view ([Marcus et al., 2010](#)), argue that the dimensions

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form a hierarchy, where the economy is seen as part of larger society, which, in turn, is nested within the natural environment. In either case, a key emphasis is the need for any firm to ensure the ethical and responsible management of natural resources and workers throughout both its own internal operations and its supply chain.

Sustainable fashion is expressed in many forms yet lacks any agreed-upon formal definition. A review of literature finds little in the way of a definition; rather, characteristics, ideals, processes and philosophies drive the discourse. For the purposes of this paper, sustainable fashion is conceptualized as fashion that is created taking into account all phases of the cycle of clothing and realizing a holistic and systems thinking design perspective that reduces negative impacts and seeks to create positive economic, environmental and social impacts. Sustainable fashion involves good practices that aim to enrich and have a positive impact on communities, cultures, societies, people, other organisms and the environment, to respect and encourage diversity. Success and profits are decoupled from growth with the goal of creating a system which can be supported indefinitely where environmental and social responsibility drive new economic and business models, ideals and practices. For the purposes of this paper, sustainable fashion is therefore defined as “the profitable design, production, distribution, and end-of-life reuse, recycling, or disposal of fashion that supports circular systems, minimizes negative and maximizes positive impacts on both society and the natural environment”.

Sustainable fashion is closely connected to innovation. [Boons et al. \(2013\)](#) view innovation in a sustainable context as radically redefining and moving away from incremental (product and process) to transformational (services, future orientated) innovations that do not cause environmental or social harm. [von Hippel \(2017\)](#) introduces the idea of free innovation, which complements the aims of sustainable fashion and he defines free innovation “as a functionally novel product, service or process that (1) was developed by consumers at private cost during their unpaid discretionary time ... (2) is not protected by its developers, and so is potentially acquirable by anyone without payment-for free” (p.1). For the purposes of this paper, sustainable fashion innovation is defined as “transformational changes to fashion products and services developed in consultation with consumers” which advance “the profitable design, production, distribution, and end-of-life reuse, recycling, or disposal of fashion that supports circular systems, minimizes negative and maximizes positive impacts on both society and the natural environment”.

Several authors have argued that designers, design thinking and a systems thinking perspective are essential to developing innovative solutions for sustainability in the fashion industry ([Armstrong and LeHew, 2011](#); [Fletcher, 2008, 2010](#); [Fletcher et al., 2012](#); [Hethorn and Ulasewicz, 2008](#); [Niinimäki and Hassi, 2011](#)). Sustainability must be embedded in the design process if the industry is to reduce its adverse impacts in a meaningful way. Unfortunately, fashion designers generally lack the tools to enable design-driven change.

Tools are urgently needed to facilitate the transition to a sustainable fashion system. This paper presents a design tool, in the form of the reDesign canvas, to aid designers in building sustainable fashion brands. The tool is particularly targeted to the needs of design entrepreneurs running micro-sized enterprises (less than 10 employees). Design entrepreneurs represent a rapidly growing segment of sustainable fashion brands, but often approach the integration of sustainability into their brands in an ad hoc, unsystematic manner. Design entrepreneurs require a flexible tool that recognizes the different starting points, competitive environments, and resource constraints they face. The reDesign canvas was

extensively tested through a participatory action research (PAR) study with a micro-sized enterprise and interviews with 38 entrepreneurs and experts in sustainable fashion.

The reDesign canvas is a visual tool that resembles a painter's canvas, preformatted with a set of building blocks which form the basis of the canvas (i.e., the tool). The goal of the reDesign canvas is to facilitate a transition to sustainable fashion. Specifically, the canvas allows design entrepreneurs to fully visualize all of the components of new or existing sustainable fashion brands. The reDesign canvas is intended to be printed on large scale surfaces (e.g., a poster) so design entrepreneurs can sketch and discuss the elements of a sustainable fashion brand using markers and/or attached notes. The building blocks are the fundamental elements a designer should include in building a sustainable fashion brand. Fostering understanding of how the building blocks interrelate, the reDesign canvas encourages discussion, creativity and analysis so designers may create clothing that engages consumers through new business models, creating new values, meanings and behaviours.

The reDesign canvas challenges design entrepreneurs to move beyond traditional product design to fully integrate sustainability into their design processes. The canvas makes several contributions to research and practice. As a strategic tool, the canvas facilitates an iterative process where design entrepreneurs work through a series of building blocks, including concept, design and materials, (de) branding, innovative and sustainable business models, consumer engagement, circular design and economies, prototypes and product development, sustainable supply-chain, data management, sourcing, revenues and cost, and stakeholders. Recognizing the need for flexibility, the canvas has been developed to allow design entrepreneurs to work within any, some, or all the building blocks.

2. Theory and background

This section introduces the concepts of design thinking and systems thinking. The use of theory and literature form the conceptual basis for the development of the reDesign canvas and the practice-based testing and refinement of the tool.

2.1. Design thinking

Design traditionally has been tasked with the making of products; more recently, the discourse has increasingly highlighted the application of design thinking to larger scale social and system solutions ([Brown and Wyatt, 2010](#); [Hethorn and Ulasewicz, 2008](#)). Design thinking can be described as a “practice ... associated with having a human-centered approach to problem solving in contrast to being technology- or organization-centered. [Designers] are seen as using an iterative process that moves from generating insights about end users, to idea generation and testing, to implementation” ([Kimbell, 2011](#)). Design thinking is frequently presented as an approach to foster innovation while remaining a flexible, expansive and explorative activity ([Brown, 2008, 2009](#); [Buchanan, 1992](#); [Dorst, 2011](#); [Norman, 2013](#)).

For the purposes of the paper, the researchers adopt the understanding of design thinking tied to [Brown \(2008\)](#) and [Dorst \(2011\)](#). The central insight is that design does not necessarily follow an orderly process. Rather, it is the approach to design and the principles underlying that approach that are critical. In any case, it is essential that values, such as a commitment to sustainability, are embedded early in the design process.

Fashion offers and generates multiple opportunities to apply sustainable concepts and practices ([Hethorn and Ulasewicz, 2008](#)) and designers often want to create more sustainable garments but they need to know how to do so. Design is the point of greatest

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