

Circular Product Design Strategies used by Indian Fashion Designers

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Abstract

As businesses move from a linear to a circular economy they are faced with a varied choice of product design strategies. This paper examines the product design strategies used by India's fashion designers in relation to a framework proposed by earlier researchers. The focus is on circular product strategies using slow and closed resource loops. A brief introduction to slowing, closing, and narrowing resource loops is provided. The evidence shows that Indian fashion designers of pret/couture lines use strategies to slow or close resource loops. This paper opens up a future perspective for fashion designers in India both from the educational and business point of view.

Keywords: circular product design strategies; Indian fashion designers; slow resource loops; closed resource loops

INTRODUCTION

The move towards adopting principles of a circular economy is now spreading across the globe as it is seen as an attractive solution to tackle sustainability problems and issues. From a 'take, make and waste' industrial model, the circular economy is meant to be restorative and regenerative. This may involve repair, reuse, recycling or repurposing to extend the life cycles of products, waste from one process becomes feedstock for another, and minimizing of negative impacts are all part of the practices followed. Further the use of renewable energy sources and substituting material with biodegradable materials is also an important part of the circular model [1].

The concept of a circular economy has received the attention of governments, businesses and other agencies at all levels. Germany, Japan, China have adopted circular principles and have implemented it through a legislative framework. EU has adopted the 2015 Circular Economy Strategy [2]. Businesses that are exploring and using the concept include: Patagonia, Nike, Dell, Timberland and Levi [3,4]. Nike and Patagonia, were joint winners of the Accenture Strategy Award for Circular Economy Multinational at the World Economic Forum in 2017. Patagonian and Nike are renowned for their adoption of circular strategies for business. Nike received the award due to its commitment to doubling business with half the impact on the environment. 71% of all Nike footwear and apparel use recycled materials such as factory scrap. Patagonia received the award for its innovation in sustainability and its encouragement to consumers to repair rather than discard worn items [5].

Design has an important role in a circular economy. Designers create circular solutions for companies, and attract consumers through designing for attachment, trust, well-being and identity. Thus designers can facilitate the adoption of circular products as a viable new option by both businessmen and consumers.

The research paper uses a framework for circular product design strategies propagated by Bocken, Pauw, and Grinten [5]. The framework is used to analyze the strategies adopted by Indian fashion designers. The research addresses the issue of identifying the circular product design strategies used by Indian Fashion designers in their move towards a circular economy. The present researcher's earlier papers have shown product design as an innovation opportunity to delivering sustainability benefits to consumers and to performing an important role in connecting psychologically and socially to consumers [6 and 7]

CIRCULAR PRODUCT DESIGN STRATEGY FRAMEWORK

Circular product design is a bridge towards a circular economy and calls for a shift in the mindset of designers. A designer must therefore understand the key principles underlying circularity and be able to apply them in their work. Circular design demands that a designer design for multiple usages and users thus enhancing the overall value [8].

In linear economy raw material are converted into products and at the end of their functional life are cast away as waste. Circular design aims at eliminating waste by prolonging the life of the product or returning material used back to the system for reuse. Integrating circular principles in the early stages of product design process is important, because once product specifications are frozen only minor changes are possible.

Design strategies for circular include three resource loops: slowing, closing and narrowing loops [5]. However Bocken, Pauw, and Grinten [5] point out that narrowing the loop should not form part of the circular design strategy because of its lack of using cyclicity as a process. Resource efficiency can be achieved without being cyclical and in combination with slow and closed can deliver great benefits useful to a circular economy.

Therefore Bocken, Pauw, and Grinten [5] offers the following two circular product strategies:

- (1) Slowing resource loops: Designing long lasting goods and extending the product life are important planks of a slow resource loop. Designing long-life goods through attachment, trust or durability and product-life extension through repair, upgrades, standardization and ease of disassembly results in a slowdown of the flow of resources.
- (2) Closing resource loops: Managing technical or biological cycles facilitating recycling and the use of disassembly in design helps close the resource loops.

According to Bocken, Pauw, and Grinten[5] the aforesaid two approaches are distinct from the resource efficiency or narrowing flows and hence the same may not be taken as a part of being circular. Slowing is about prolonged use and reuse

of goods over time, whereas closing loops is about material recycling. Narrowing loops is all about reducing resources used without being cyclical in character.

The product design strategies relevant to slowing and closing loops as outlined by Bocken, Pauw, and Grinten [5] are reproduced in Table 1 and 2. These strategies incorporate the work of researchers in the area and are well explained.

Table 1. Circular Product Design strategies to slow resource loops.

A) Designing long-life products • Design for attachment and trust • Design for reliability and durability B) Design for product-life extension (with the help of service loops reuse is encouraged) • Design for ease of maintenance and repair • Design for upgradability and adaptability • Design for standardization and compatibility • Design for dis- and reassembly Source: Adapted from Bocken, Pauw, and Grinten [5]
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Table 2. Circular product design strategies to close resource loops.

Design strategies to close loops (incorporates recycling to facilitate processes) • Design for a technological cycle • Design for a biological cycle • Design for dis- and reassembly Source: Adapted from Bocken, Pauw, and Grinten [5]
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METHOD

Literature was examined to identify frameworks and models of circular product design. The Bocken, Pauw, and Grinten[5] model was considered to examine circular product strategies in Indian fashion design. Specifically design Strategies for slow and closed resource loops were explored in relation to Indian Fashion Designers of apparel. The two broad categories namely slow and closed resource loops were examined alongside their sub strategies.

News article about Indian fashion designer apparel brands which appeared in the last 2 years online were examined for the coverage of Slow and closed loop design strategies adopted. In all 11 Indian fashion designers brands were studied. Most of the fashion designers covered were producers of pret porter / ready to wear or Couture range. Evidence was tabulated along the design sub strategies used and a brief description in a word or two provided.

RESULTS

It was found that Indian fashion designer of pret / couture were adopting slow and closed resource loops as circular product strategies. Table 3 gives the analysis of the slow resource loops and the sub strategies used. Table 4 gives the analysis of closed resource loops.

Table 3. Design Strategies to Slow resource Loop

Design for Slow resource loop	1.Designing long-life products (Attachment/Trust)	1. Designing for Long Life (Reliability /Durability)	2. Designing for Product Life Extension (Ease of maintenance/ repair)	2.Designing for Product Life Extension (upgrade /adapt)	2. Designing for Product life extension (Standardization /Compatibility)	2.Designing for Product Life Extension (disassembly and reassembly)
1. Pero	Traditional deep seated Indian craft / hand crafted stitched / Women employed	Nil	Nil	Nil	Nil	Nil
2. Behno	Ethically produced/ fair wages / international standard factory	Nil	Nil	Nil	Nil	Nil
3. Upassana	Created for social causes	Nil	Nil	Nil	Nil	Nil
4. Bhusattva	Design simplicity /minimalistic	Nil	Nil	Nil	Nil	Nil
5. No nasties	Ethical toward craftsmen	Nil	Nil	Nil	Nil	Nil
6. Do you speak green	Fair trade GOT certified	Nil	Nil	Nil	Nil	Nil
7. Doodlage	Zero waste	Nil	Nil	Nil	Nil	Nil
8. Ka Sha	Crafts /women using traditional/ handloom	Nil	Nil	Nil	Nil	Nil
9. Nicobar	Ethical /craft	Nil	Nil	Nil	Nil	Nil
10. Shift	Sustainable Material	Nil	Nil	Nil	Nil	Nil
11. Grassroots	Craftsmen /cause	Nil	Nil	Nil	Nil	Nil

Table 4. Design Strategies to close resource loops

Design for closed resource loop	1.Biological Cycle	2.Technical Cycle)	3.Designing for Product Life Extension (disassembly and reassembly)
1. Pero	Handloom /No synthetic/	Waste/ Recycle/Up cycle	Nil
2. Behno	Nil	Nil	Nil
3. Upassana	Organic/works development/natural dyes/	Nil	Nil
4. Bhusattva	Organic cotton/ infused with bamboo banana fiber		Nil
5. No nasties	Organic cotton/	Nil	Nil
6. Do you speak green	Bamboo/Natural/ biodegradable/Water based dyes	Recycled polyester	Nil
7. Doodlage	Nil	Factory waste used/Zero waste /Upcycling	Nil
8. Ka Sha	Handloom	Waste plastic	Nil
9. Nicobar	Nil	Nil	Nil
10. Shift	Sustainable Material/Reduce waste in factory	Nil	Nil
11. Grassroots	Nil	Nil	Nil

There many examples of slow resource loop used by designers. The designers appeared to be extending product life by attachment and trust: traditional crafts, hand work, ethical brands with fair wages and employee development, as also social causes were the main sub types exploited by designers.

Closed loop resource is also being used by designers. There are quite few designers using waste material, recycling and up cycling as a part of the technical cycle associated with closed resource loop. In addition biological cycle was used by many: using organic cotton, bamboo and banana fiber, natural dyes.

So there is evidence of a movement towards circular product design with the use of multiple strategies. However the entire gamut of sub strategies have not been identified in case of Indian fashion designers.

DISCUSSION

The paper seeks to provide the status of Indian fashion designers and their adoption of strategies supporting the circular economy. It appears that work has begun in case of both slow and closed resource loops but much more needs to be done as the strategies appear limited to a few .It is not clear whether there is an integrated view about circular strategies among Indian designers.

Therefore the following needs to happen in India. Future generations of fashion designers need to be made aware of circular product strategies through education .Businesses must simultaneously adopt the new strategies consciously. Businesses and education must experiment with design around circular principles: design for longevity, design for

leasing/service, design for re-use in manufacture, and design for material recovery.

The study has its limitation as reports in news articles were relied on as evidence and no field work done to check the strategies adopted

CONCLUSION

The circular product design strategies in the article are limited to the Indian fashion designers for the pret /couture lines only. But there appears scope for mass fashion producers to also take a leaf from the book to exploit the varied sub strategies available for slow and closed loops. There needs to be an integrated approach to circular design if its benefits are to be reaped by the entire sector. Since the benefits are far reaching, a concerted effort has to happen by all players in the system. Currently it appears fragmented and not very well thought through. Future action lies in innovating, and experimenting with multiple sub strategies and the adoption of more strategies favorable towards a circular economy

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