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25 Teemill

Sector focus: Fashion and textiles

Rationale

The fashion, textile and apparel industry operates a largely linear system, where resources are extracted and made into products that are used for only a short period of time. It is believed to be the third largest manufacturing industry in the world, after automotive and technology, in addition to being considered the most polluting. There has been increased focus over recent years on the impacts of 'fast fashion.' One UK-focused survey found that consumers kept clothes for an average of 3.3 years before they were discarded or passed on.

The industry uses huge volumes of energy and water, in addition to harmful chemical substances adding to the environmental burden. One argument is that we simply need to buy less. However, even if we halved our current rate, that would still mean significant unnecessary waste and negative environmental, social and economic impacts. With the forecasted rise in global population, it is expected that "the overall apparel consumption will rise by 63%, from 62 million tons [in 2017] to 102 million tons in 2030."

Adopting circular economy principles in the textiles industry could lower greenhouse gas emissions, minimise costs and consumption of virgin material, decrease the risk of price volatility and generate new economic prospects such as 'fashion-as-a-service.' This is the approach taken by Teemill, who have used technology to 'lead the way' on sustainability, making new clothing from recovered material and closing the loop in textiles.

Leadership

Teemill began modestly, but with a goal of reshaping the fashion industry. They wanted to buy things produced from natural materials and powered by renewable energy, but could not source any, so they decided to manufacture their own.

> By rewarding people for keeping the material flowing, we're changing the way people think about their wardrobe. Rather than waste, they see assets and then some really interesting stuff starts to happen. Because our customer is also our supplier, everybody is rewarded for keeping the material flowing (Teemill).

The major focus these days is on sharing the technology they have developed to make circular fashion viable with other start-ups, charities and enterprises so that the

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industry can change at scale. They release all of their technology, which has been built over the course of ten years, in order to serve as a springboard for future companies.

Approach

An online shopping platform headquartered on the Isles of Wight in the United Kingdom allows people to create and sell their own clothing designs through their marketplace, distributing made-to-order products directly to buyers and sharing earnings with the designers. Products are manufactured in real time once they have been purchased, avoiding overproduction and waste. The company embeds each garment with a Quick Response code within the wash-care label, which can be used to send the item back to get money off their next purchase. Labels are printed with an ink that is slightly more expensive, but can be removed more easily when the product is returned. By ensuring that all products and packaging are made from pure natural materials, they can make new products from the material they recover. They use renewable energy from wind and solar to power their factories in India and they reduce energy further within the factory by using technology that turns off equipment when not in use. They work closely with the organic cotton farmers, as shown in figure 25.1, to ensure the use of toxic pesticides and fertilisers are avoided; co-planting and insect traps are used instead to encourage biodiversity. Water is also carefully managed in local reservoirs and waste water is cleaned and recirculated, waste seeds are used for animal feed and vegetable oil is extracted for food products; every step in the process is carefully considered to close the loop as much as possible. Every product is designed to be sent back when it is worn out (as shown in figure 25.2), and the company vision is to share what they have learnt to change the industry as a whole.

On reflection

This example may be used to demonstrate how fashion companies can incorporate circularity into their operations. It highlights how renewable energy can help fashion last longer. It also demonstrates how to utilise current technologies to improve supply-chain visibility and function in shared-scale economies. The use of data and technology is key to this business model, enabling waste to be designed out, minimising overstocking and maximising material recovery.

Reforming the way garments are created, sold, used, collected and reprocessed and enabling the development of reverse-logistics chains are all required to establish further circular models in fashion. We also need to challenge established consumption habits in western culture, encouraging people to wear and keep clothes longer.

Figure 25.1: Natural Materials and Partnerships.
Source: Teemill, Persmission granted.

Figure 25.2: Teemill Clothing Label.
Source: Teemill, permission granted.

Sources

https://www.teemill.com
https://ellenmacarthurfoundation.org/circular-examples/an-open-access-circular-supply-chain-for-t-shirts-teemill