

- Case Study - How sustainable fashion contributes to the closed-loop economy?



Sustainable development goals (SDGs)

Goal 9: Industry, innovation and infrastructure

Goal 12: Reasonable consumption and production



Relevant concept/ issues

Closed-loop economy



Relevant sector

Waste management

The content of the case study (solutions to the issues be identified in the concept information sheet)

Using valuable land for the disposal of waste is a global concern and the pollution created by the combination of production, transport and disposal of clothing make fashion the second greatest polluting industry in the world. As a result, it is imperative that the business model for the fashion sector is redesigned. The waste hierarchy (Figure 1) puts rethink and redesign as a priority based on the 'Nature as teacher' framework (Webster & Johnson, 2010) (you can also refer to the concept information sheet about the closed-loop economy), so industrial products and systems (in this case fashion) are designed and developed to mimic nature according to the 'closed-loop' model.

The fashion sector in Hong Kong does not currently operate according to the principles of a closed-loop economy, however some companies came up with solutions that help make industrial products and systems in the fashion sector come closer to a closed-loop model. The three case studies below illustrate closed-loop practices at different stages of a fashion product's lifecycle system.

In the activity for this case study you will be asked to redesign an industrial model for the fashion sector based on the 'waste=food' model. Your redesigned model should have more 'closed loops' to make the system run like nature, which is self-sustaining and abundant.

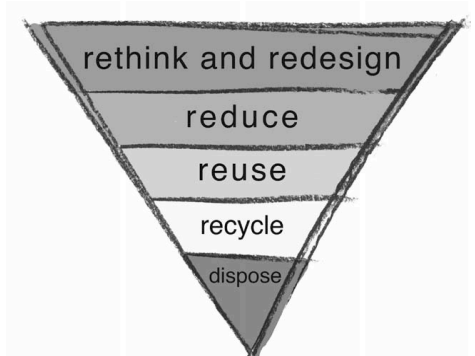


Fig. 1. The waste hierarchy (Webster & Johnson, 2010)

— THE CASES —

Case 1: Social enterprise – Evrnu – Change making by Design

The true cost of cheap clothing is no longer breaking news – especially with so many stories of rampant worker exploitation, increasing textile waste in landfills and natural resource depletion in the headlines. Although we may spend a few dollars less on those cool jeans and tees, we actually pay high human and environmental costs for our clothes.

An unlikely network of social entrepreneurs, designers, fashionistas and 'woke' brands is bravely standing up and calling for a whole new system, one that re-imagines the path from design sketch to a consumer's closet as a closed loop – only taking what it gives back.

How does this work?

Rather than using old growth or endangered forests, as around 30 percent of viscose and rayon does, fibers in this closed-loop system, for instance, come from only reused materials. And after being used, those recycled fibers are used again and again, until finally turning into biodegradable waste and dissolving back into nature.

Widespread adoption of this kind of a more ethical and sustainable system will only come, though, if more businesses and consumers understand the devastating end-to-end impact of fashion's often messy and reckless production cycle.

After half a lifetime in the apparel industry, former fabric specialist turned social entrepreneur, Stacy Flynn, wanted to find a way that new could be made from old, where waste could be 'designed out' of the manufacturing process.

Her moment of clarity came in 2010 after visiting a clothing recycling enterprise in China that operated under a 'cloud of pollution'. She saw that children in the area couldn't enjoy nature, in part because of the impact of the company's textile waste and pollution. Flynn connected the dots and realized she was contributing directly to this dirty legacy by thoughtlessly pursuing a high-flying career in an industry obsessed with consumption.

'I began circling around one question,' she says. 'Is there a way to break down this waste and turn it into a new fiber, which [could be] a lynchpin in the entire system?'

There was.

Flynn's social enterprise, Evrnu, now makes fiber from cotton garment waste, a fiber she describes as finer than silk but stronger than cotton, and that uses 98 percent less water and 90 percent less carbon emissions than cotton and polyester respectively. The fiber, called NuCycl, 'is a game changer,' she said. 'It takes what we perceive as waste and turns it into a modern-day resource.'

Stacy Flynn believes that one day soon we will consider discarding and reusing clothing in the same casual way that we discard and re-use plastic containers – clothing recycling will be at our fingertips, maybe even at our doorsteps with brightly colored bins. 'I do believe things are changing,' she says. 'We have to protect air, water and soil at meta levels. That's a non-negotiable. It's game over if we don't do that.'

Source: Braham (2017).

Case 2: H&M – Ramping up re-use

Heavyweight fashion brands with powerful market sway have also begun making significant headway towards circular lines of production, and pushing for wider reform.

Outdoor-wear company Patagonia jumped in the space early on with the launch of its 'Common Threads' initiative in 2005, an ambitious effort to make all Patagonia's clothes recyclable. The company began with polyester, before it moved on to organic cotton and polartec, breaking down the materials in bulk and reusing them in new products. It has published the details of its impact at each stage of the process in its transparency blog, 'The Cleanest Line', openly assessing its performance and seeking to better its practices.

In 2016, Swedish clothing giant H&M collected around 16,000 tons of discarded clothing, sweetened with the incentive of about US\$6 store vouchers for every bag delivered by customers. H&M's current production stream includes 26 percent recycled materials and it has pledged to use all recycled or sustainably sourced materials by 2030, setting an annual collection target of 25,000 tons of disposed clothes.

H&M's global press officer Inigo Saenz Maestre said the motivation did not come from consumer pressure, but rather from a genuine desire to be part of the solution. 'We want to lead the industry towards transparent communication and full traceability of the supply chain,' she said. 'Our supplier list is public, because transparency means we can hold ourselves and our suppliers accountable on issues such as human rights, fair jobs and environmental protection.'

Source: Braham (2017).

Case 3: Hongkongers fight 'fast fashion' as clothes-mending workshops and pop-up swaps grow in popularity

Global consumers purchased 60 percent more clothing in 2016 than in 2000 and only kept each item half as long, a report by McKinsey consultancy found. Hong Kong alone sends 343 tonnes of textiles to the city's overloaded landfills every day and a 2016 report by Greenpeace found one sixth of clothes owned by residents were seldom or never worn after purchase.

Despite Hong Kong's reputation for rampant consumerism, a nascent movement against fast fashion is taking root in the city, with clothes-mending workshops and pop-up swaps growing in popularity, and designers parading recycled fabrics on the catwalk. From broken umbrellas to discarded curtains, no material is too shabby for designer Jesse Lee, who showcased his creations at a recent sustainable fashion show in Hong Kong.

A stitch in time

Shocked by the volume of clothing and the pollution produced by major brands, Hong Kong designers Kay Wong and Toby Crispy founded 'Fashion Clinic' to help people mend garments. They set up pop-up stalls at clothing stores providing repair and reshaping services and also hold workshops teaching basic needlework.

Spinning yarn

While repair clinics, clothes swaps and second-hand shops are all doing their bit, some want to address the waste problem on an industrial scale. A cutting-edge 'upcycling' spinning mill that turns discarded clothes into new yarns will go into full operation in the city in October, developed by the Hong Kong Research Institute for Textiles and Apparel (HKRITA)

The 1,765 square-meter (19,000 square-foot) factory will sterilize, sort and turn used textiles into fresh fiber, processing three tonnes of textile waste each day. Six workers will remove zips and buttons and categorize the fabrics before machines carry out automated color sorting and re-spinning. Mixed-fiber clothing will go through a high-tech treatment to separate the different elements. Edwin Keh, CEO of HKRITA, said the recycled yarn will be 'as good as virgin materials', while the selling price will be 30 percent lower.

Source: Zhao (2018).

Reference:

- Braham, E. (2017). Closing The Loop On Sustainable Fashion. Retrieved from <https://www.forbes.com/sites/ashoka/2017/05/08/closing-the-loop-on-sustainable-fashion/#c0ac7e02f3fd>
- Brismar, A. (2015). "Closing the loop" in the fashion industry. Retrieved from <http://www.greenstrategy.se/closed-loops-fashion-textile-industry-definition-and-challenges-2/>
- Webster, K., & Johnson, C. (2010). Sense & Sustainability Educating for a circular economy (2nd ed.). Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiRh8jQsPXkAhVKWH0KHWyXBd8QFjAAegQIAhAC&url=http%3A%2F%2Fwww.c2c-centre.com%2Fsites%2Fdefault%2Ffiles%2FSense%2520%2526%2520sustainability_0.pdf&usg=AOvVaw3f3ddVGIx2Td6rTB_BCpYA
- Zhao, Y. (2018). Hongkongers fight 'fast fashion' as clothes-mending workshops and pop-up swaps grow in popularity | Hong Kong Free Press HKFP. Retrieved from <https://www.hongkongfp.com/2018/10/01/hongkongers-fight-fast-fashion-clothes-mending-workshops-pop-swaps-grow-popularity/>