

Fashion**Tracing a garment: industry looks to shine light on its blind spots**

New technologies aim to make fashion's supply chains more transparent in a push for green and labour reform



FibreTrace x Reformation © Olivia Malone

Whitney Bauck MARCH 13 2021

When a Times investigation last summer revealed that a Leicester factory making clothes supplied to fast-fashion retailer Boohoo only paid employees £3.50 an hour, the result was a public backlash so strong that it prompted parliamentary scrutiny and a possible investigation that could restrict Boohoo's right to import goods into the US.

Though it made a large splash, the Leicester incident was far from unique. Labour exploitation, like environmental degradation, is baked into fashion supply chains around the world. One significant contributor underlying these issues is a lack of traceability: most brands work with so many layers of middlemen that they don't actually know who is sewing their garments, much less who's dyeing the fabric or picking the cotton.

According to Sarah Ditty, global policy director at Fashion Revolution, a non-profit that advocates for human rights and environmental protection in the fashion industry, that's a real problem. "It's very difficult to protect and improve conditions for vulnerable people and the planet when there's a lack of visibility into where those facilities or people are," she says.

Since 2016, Ditty has been working with her team on a yearly Transparency Index that ranks major clothing brands based on how much they know about their own supply chains — and how much they disclose to the public. In her years of research, she’s been struck by the number of brands that have a “total lack of knowledge about where the components of their products are being made, and at what cost to people and the environment”.

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Kathleen Talbot, Reformation’s chief sustainability officer

There are a few ways brands can approach the traceability problem, starting by building more direct relationships with suppliers. That’s the approach modelled by groups like California-based Fibershed, an agriculture-focused non-profit intent on building regional fibre systems, which has partnered with brands such as The North Face to create cotton garments grown, dyed and assembled all within a few hundred miles of The North Face’s headquarters. Other groups are taking a more technological approach: blockchain is a key component in the solutions offered by companies such as

Provenance and Sourcemap, which provide software designed to help companies track their supply chains (the latter has worked with Vivienne Westwood and Eileen Fisher).

One of the newest companies to emerge with a blockchain-based solution, called FibreTrace, is offering something unprecedented: a way to store supply chain information within the very fibres of a garment. Although Fashion Revolution’s Ditty acknowledges the tech’s nascency, she says “it could be a potential game-changer”.

Here’s how it works: a bioluminescent ceramic pigment fine as dust is added to the fibres at the beginning of the supply chain (for natural materials such as cotton, it’s added in the ginning stage, when the cotton fibres are separated from their seeds; for synthetics, it’s added at the fibre production stage). Each batch of pigment is created according to a unique “recipe”, which acts almost like a serial code.



The FibreTrace scanner can help brands authenticate the origins of their material

Then, at each stop in the supply chain — think dyeing, weaving or sewing — the fibre is scanned and someone at that facility then adds new information about what they did to the fibre to a secure blockchain. Though the pigment is so safe for humans to be in contact with that it's classified as an “edible product”, it can also withstand extremely high heat, rendering it hard to destroy in the garment-making process. The end result is a piece of clothing that has information about its provenance baked into every fibre.

“The only requirement facilities have is to have the FibreTrace scanner at the facility to scan the [pigment], so the brand knows in real time where their fibre is and it's authenticated,” says Shannon Mercer, FibreTrace chief executive. Plus, though the cost of using the technology depends on what fibre is being traced, he notes that for cotton “the impact on a T-shirt is minimal, at an average of 3 cents [per T-shirt].” In short: it's not too complicated or expensive to implement.

FibreTrace, which is based in Australia, launched its first pilot with local denim label Nobody Denim last year, and now it's expanding internationally for the first time by partnering with Reformation, a Los Angeles-based womenswear brand known for its slinky dresses and classic denim. For Kathleen Talbot, Reformation's chief sustainability officer and vice-president of operations, the appeal of working with the technology is both internal traceability and ease of communicating about the supply chain with customers.

“Consumers have little to no visibility into where, how and from what materials their clothing is made, so traceability is essential for us,” she says. “It helps us set and maintain rigorous fibre and production standards, and it also helps us design for circularity later down the line. FibreTrace allows us to give the proof that the garment has been made exactly as we say it has.”



FibreTrace x Reformation © Olivia Malone

Reformation is launching FibreTrace in just six styles for now, but Talbot is hopeful that someday all of the brand's products will feature the technology.

Though Ditty points out that being able to track a supply chain doesn't necessarily ensure it will be free of forced labour or manufacturing practices that are bad for the planet, she still thinks traceability — and technologies that enable it — are crucial tools for moving away from rampant exploitation.

"It's almost like an X-ray," she says. "You don't know exactly what ailment is going on in your body until you get an X-ray, but once you get one, you can come up with a treatment." With greater visibility into supply chains, perhaps fashion will finally be able to see its own problems well enough to fix them.

This article has been amended since original publication to correct FibreTrace's partner in its first pilot programme as Nobody Denim

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