

MATERIAL INNOVATION

Digitalising The Supply Chain – How Technology Is Becoming An Enabler For Change

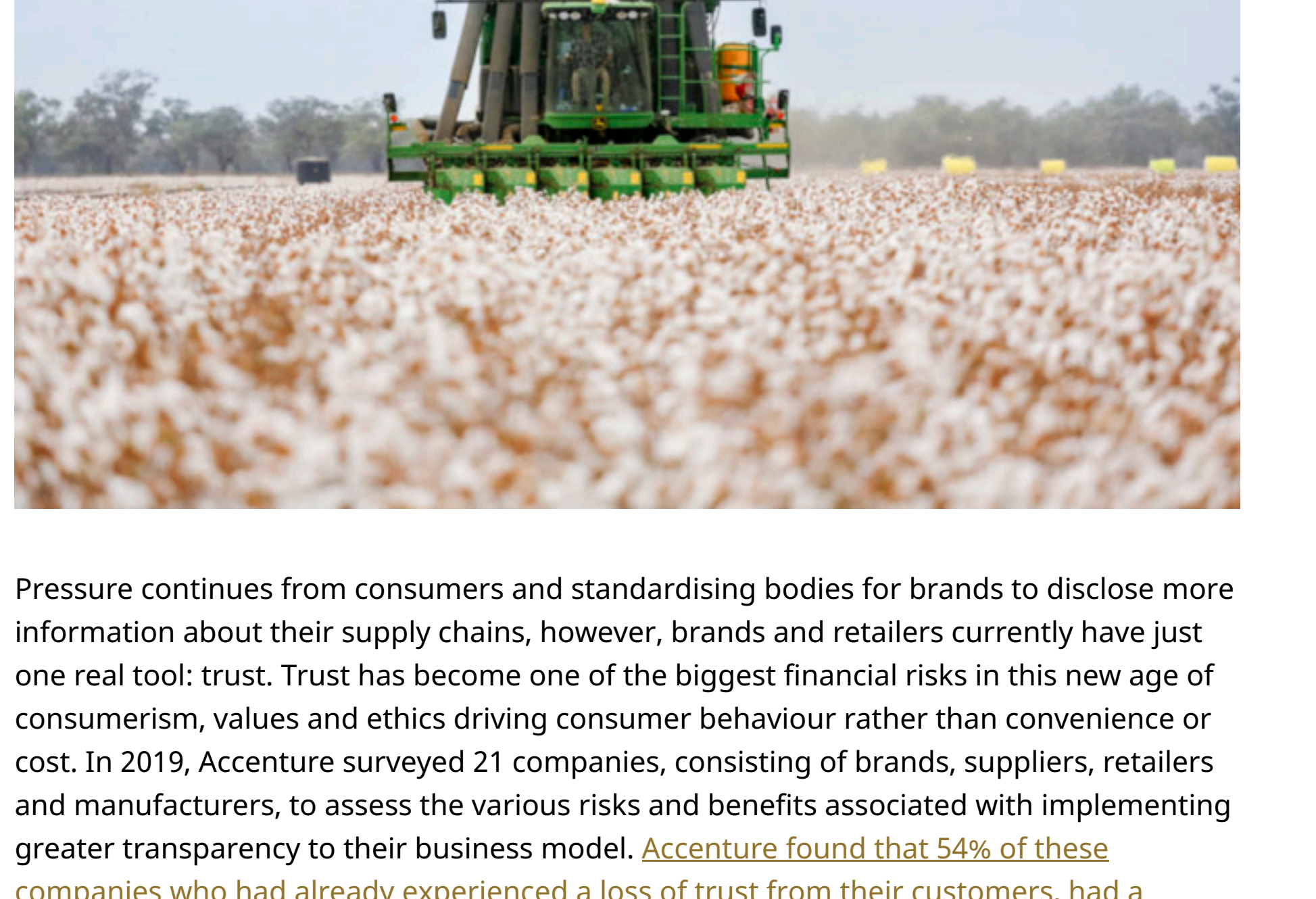
BY SHANNON MERCER | MARCH 22, 2021 | 7 MINUTE READ

True material transparency has two prerequisites: visibility at the fibre level, and the right technology to carry that visibility from one end of the value chain to the other, with integrity. The pieces are falling into place for both.

The concept of digitalisation of supply chains is certainly not a new phenomenon, but it is a term that's grown significant popularity in the wake of COVID-19 and the need to adapt to more digitally-based solutions. What started as simply an operational function that ensured the supply of production lines and distribution to the end customer, supply chain management has undergone some significant changes over the last thirty years, with more advances and nuances to consider than ever – from transparency to digital co-creation.

Take transparency as our first example. The human rights crisis currently occurring in Xinjiang is an excellent case study to exemplify why the need for transparency through digitalisation has become so crucial to enabling change. After the US government sanctioned bans on 87% of China's cotton entering the country after several allegations of human rights abuse surfaced, the global supply chain experienced an unprecedented upheaval almost overnight. In particular, it highlighted that a lot of brands cannot trace their products back to its source and claim with 100% certainty what fibres their products are made from.

This period of time has been an awakening for the global textile industry that we need to address long-standing problems, including the ability for brands to have true custody of supply, complete transparency, a full understanding of the impact of raw fibre production on emissions, and tools to ensure that the claims made on environmental targets and individual products can be authenticated with tangible evidence and backed by data.



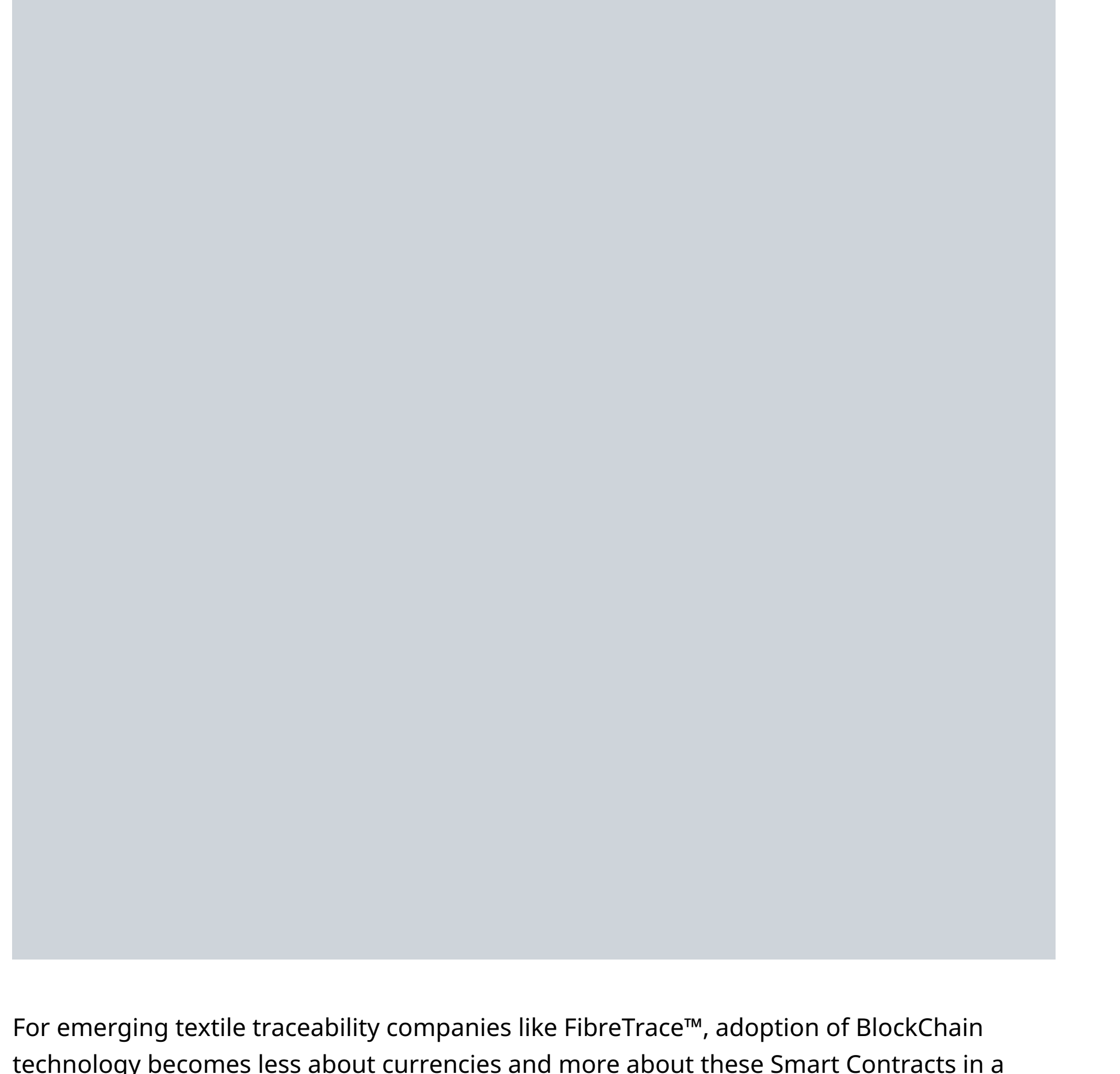
Pressure continues from consumers and standardising bodies for brands to disclose more information about their supply chains, however, brands and retailers currently have just one real tool: trust. Trust has become one of the biggest financial risks in this new age of consumerism, values and ethics driving consumer behaviour rather than convenience or cost. In 2019, Accenture surveyed 21 companies, consisting of brands, suppliers, retailers and manufacturers, to assess the various risks and benefits associated with implementing greater transparency to their business model. [Accenture found that 54% of these companies who had already experienced a loss of trust from their customers, had a combined loss of \\$180 in revenue.](#)

But how can we fix this trust problem? CIO at textile transparency solution FibreTrace™, Malcolm Wild, says that BlockChain is the "protocol" for Trust. "Blockchain works to address the flaws in trusting shared information, allowing true certainty around what you are reading, seeing or sharing is genuine."

Blockchain is the protocol for Trust

Blockchain is a method of storing data in a way that makes it irrefutable. The most popular Blockchain model used for business is Ethereum, which is used for smart contracts as well as ETH cryptocurrency. The Blockchain protocol has matured over the last decade and is now becoming widely adopted by various industries for different, but similar purposes. For the fashion industry, Blockchain has become a trusted way to share important information between all relevant parties, including the end customer, to trace and verify products as they move throughout the value chain.

A common misconception is that the Blockchain itself is the trusted source of information. Blockchain is simply a database, meaning if incorrect or fraudulent information is entered the risk lies in that the reader assumes the information is more accurate & reliable compared to information not stored on a Blockchain – simply because it is harder to tamper with. However, this is misleading. In the physical world, unlike a digital world, there is a requirement to validate both the digital information AND the physical information to ensure the digital representation is a legitimate record. This is not required in a Blockchain model for services like cryptocurrency, which are 100% digital – so what you see is what you get.



For emerging textile traceability companies like FibreTrace™, adoption of Blockchain technology becomes less about currencies and more about these Smart Contracts in a Chain of Custody model. Using a Hyperledger Blockchain framework, companies can allow an end-user to track, verify and authenticate the fibre in real-time as it makes its way throughout the supply chain – connecting the physical tracer with the digital one. The solution for a trusted Blockchain system is to ensure both a physical and digital output is at each stage of the supply chain, where the previous stage is used as an input for the next stage.

For example, as a product or its components moves along the supply chain stages, it is transformed and displays different physical and therefore digital properties that need to be validated by the next stage. If 100m of fabric is supposed to become 100 jeans and the next stage only received 50 jeans, where did the rest of the rest go? This way it becomes extremely difficult for a "bad actor" to manipulate the Chain of Custody as each recipient in the Chain has a responsibility to validate both the digital and physical items characteristic. Therefore, if the item was modified unexpectedly, it flags this immediately in the system.

The added advantage of Hyperledger is that it operates in private mode, meaning commercially sensitive data can be stored on the Blockchain and validated between independent parties that companies already know and trust. For brands adopting this technology, there is nowhere to hide. Transparency becomes a byproduct of traceability as brands must learn how to operate in a fully transparent and authentic manner.

In the context of sustainability, brands can understand from the top-down what is happening in their supply chain and be held accountable for making the changes necessary to improve. As stated by Fashion Revolution 2020 Transparency Index, "Transparency leads to accountability which leads to change." Education must be seen as key for everyone involved in the value chain – from agricultural workers to the end consumer – in understanding how the journey of the raw fibre to the end garment impacts both people and the environment, and in realising how Blockchain can support the transfer of transparent data.



The problem with a lack of data

When we talk about transparency, we aren't simply referring to the good work done by brands but seeing where genuine progress still needs to be made and understanding how it can be achieved. Having trusted data to back this up leads to responsible action and growth as brands are forced to be accountable for their policies, practices and processes. A lack of data will not only lead to a loss of trust from the consumer but can also have damaging financial losses for an organisation.

China's cotton was estimated to account for a fifth of the world's supply. Many brands who knew their cotton was sourced from China could not guarantee whether it had ties to the Xinjiang region as they were unable to trace their fibre all the way back down to farm level. As a result, the Chinese cotton industry faced a devastating loss as global fashion brands scrambled to stand clear from the controversy.

Chinese cotton yarn maker Huaifu Fashion reported in an interview with the Washington Post that it experienced a loss of at least \$54.3 million last year vs. a net profit of \$62.5 million in 2019, even after denying allegations of forced labour.

Not only has the events in China proven how essential traceability technology is for brands and consumers knowing the true origins of their raw materials but how it is needed to expose unsafe working conditions and protect the wellbeing of workers. This is something where even certifications can fail.

Whilst certifications like BCI, FSC and GoTs are an important guideline to recognise where stronger efforts in the fashion industry are already being made, they should not be used as the defining rule. Currently, there are over 100 ecolabels on textiles listed in the Ecolabel Index. The false promise of certification (2018) report by Dirty Fashion argued that many of these labels and certification schemes fail to take a holistic approach to sustainability and enforce greater transparency. To have this many labels in rotation only leads to more confusion around sustainability, effectively "watering down" the ambition of certification in general.

Independent analyst of sustainability claims, Veronica Bates Kassatly, recently investigated the practices of BCI cotton in Brazil to discover that many of their processes were arguably not "more sustainable" under these standards. What Kassatly found instead was corruption, necropolitics, pesticides and deforestation.



So, can technology solve all our problems?

The short answer is no. Traceability technology is simply a means to the end goal. Supply chain digitisation does not guarantee that sustainable efforts are being made, but is a crucial step in facilitating this change. Transparency protocols have become critical to a business's operations as transparency is now a metric by which brands and retailers are being very publicly judged. And conversely, if businesses can learn how to effectively adapt, navigate and communicate across their value chain, there is a clear opportunity to turn these costs and risks into potential upside.

Until organisations have complete transparency on their supply chain partners to raw source, and can authenticate the product they sell to the consumer is what they specified and bought at the start of the product lifecycle – change will be nearly impossible to achieve.

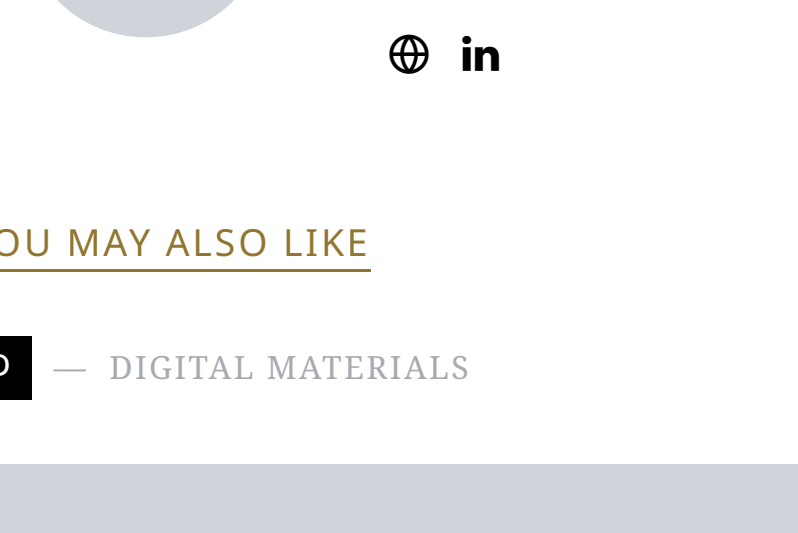
ABOUT FIBRETRACE™

FibreTrace™ is a textile transparency technology solution that provides both brands and consumers the ability to follow, in real time, the entire product lifecycle: from fibre, to production, to the finished garment.

The core of the FibreTrace™ technology is a patented luminescent pigment that is embedded in raw fibres (or optionally at yarn spinning) and is traced, verified and audited in real time at each step of the global textile supply chain. This is achieved via a proprietary handheld FIBRETRACE™ Bluetooth® Scanner that identifies and quantifies pigments in fibre, yarn, fabric and finished goods that send encrypted data into secure blockchain and software that was specifically designed and engineered for the textile and apparel supply chain.

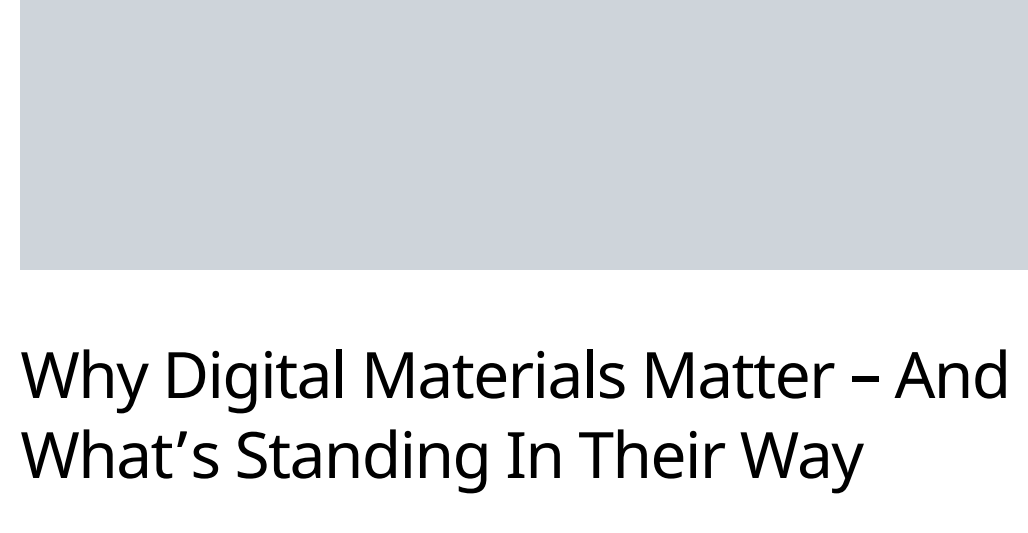
FibreTrace™ delivers end-to-end traceability and real-time results and data, housed on a FibreTrace™ platform that can be accessed securely via any device connected to the internet.

FibreTrace™'s mission is to ensure every member of the textile supply chain has the ability to take direct accountability to reduce the environmental impact of the global industry. In doing so, they aim to ultimately provide the consumer the opportunity to choose a transparent and sustainable supply chain to follow and purchase from.



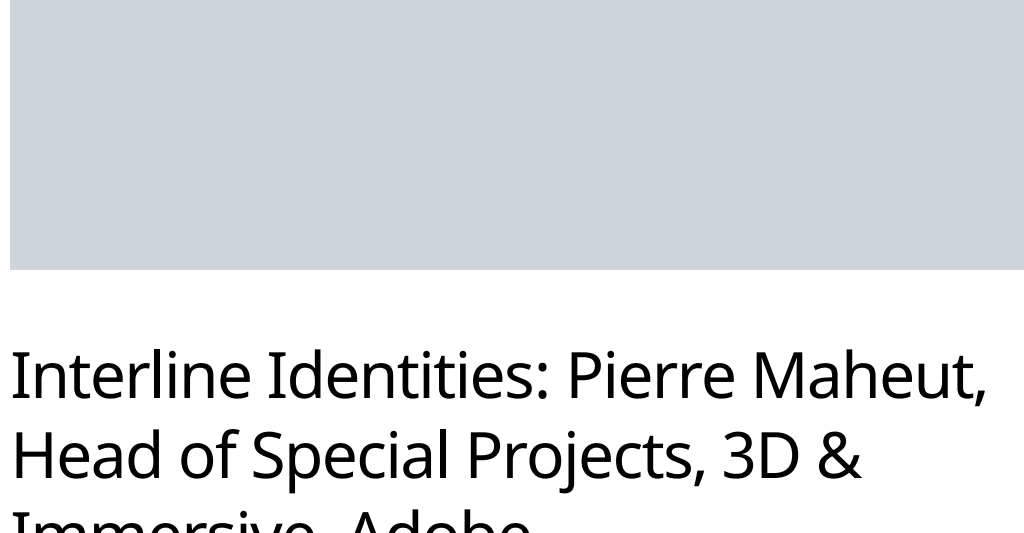
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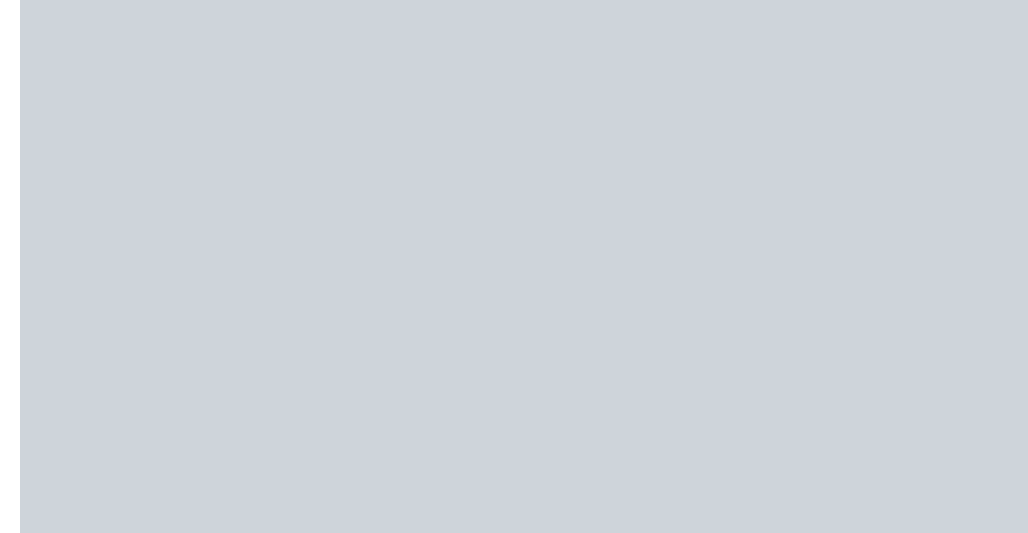
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BY BEN HANSON | AUGUST 6, 2020 | 5,136 VIEWS
Building a digital product creation workflow relies on digital materials that behave identically to their physical counterparts. The technologies are in place to make this happen, but as an industry we still need to slot the pieces together.

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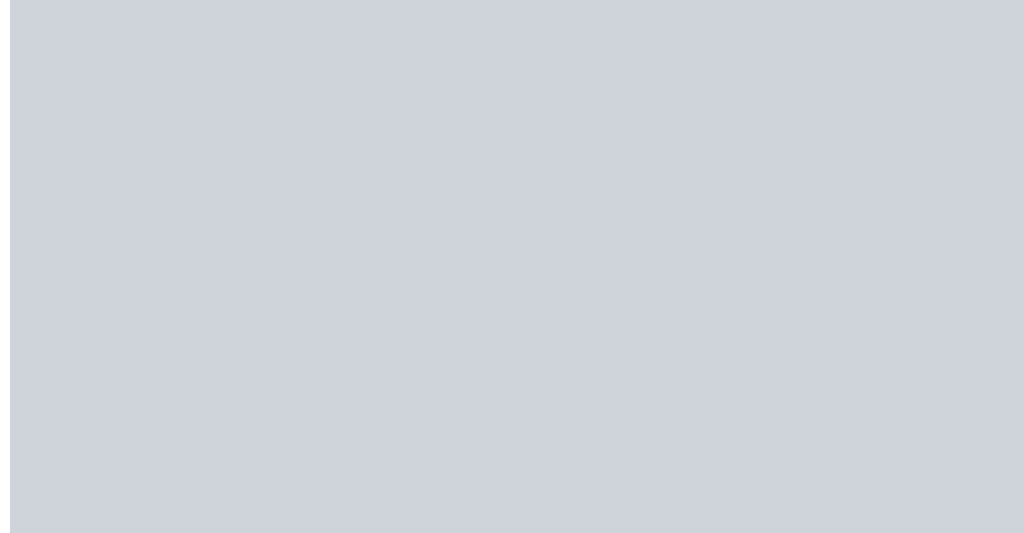
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After our April – May focus on 3D, the conversation has advanced for several brands and retailers. Beyond 3D modelling we enter the domain of digital materials, where standardisation and interoperability are the hottest topics.

4 BLOCKCHAIN



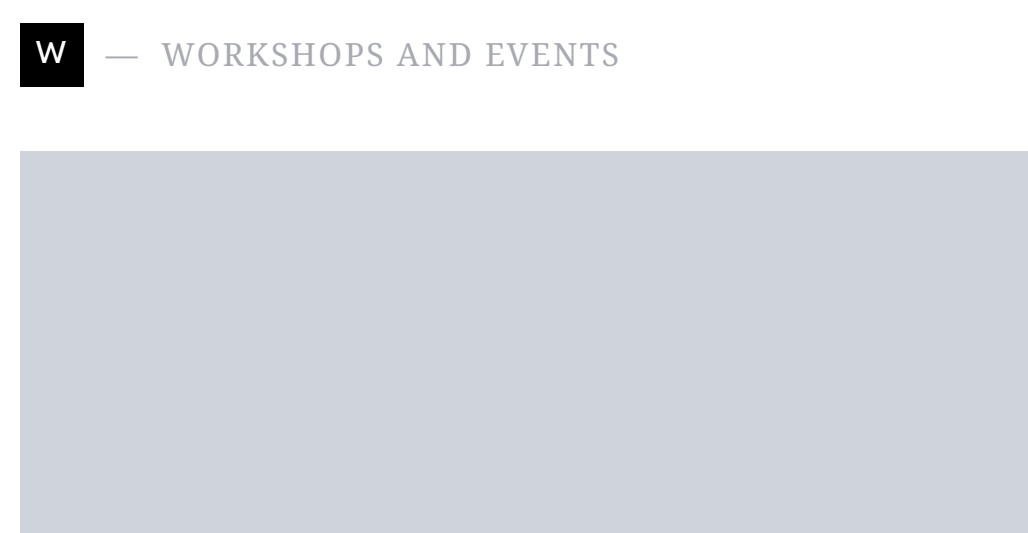
Interline Identities: Amit Gautam, CEO & Founder, TextileGenesis
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Obtaining genuine transparency from the multi-tiered material supply chain is a complex problem. This interview highlights how blockchain principles – and the technology itself – could provide a way for brands and retailers to back up provenance with proof.

1 INTERVIEWS



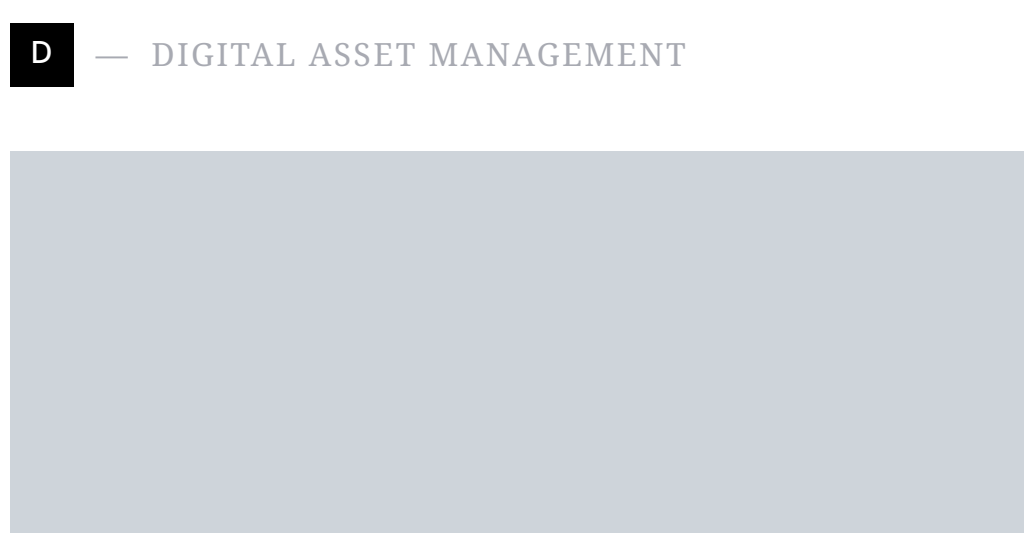
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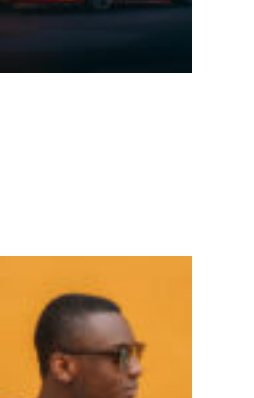
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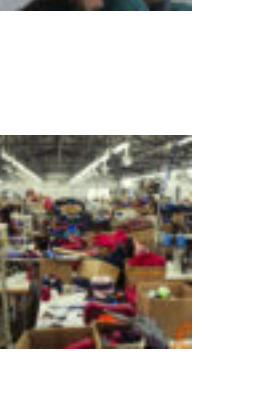
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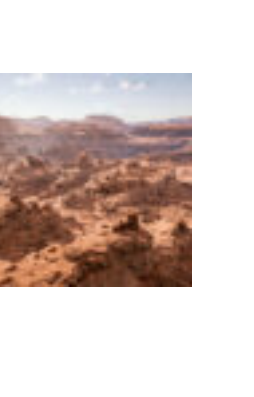
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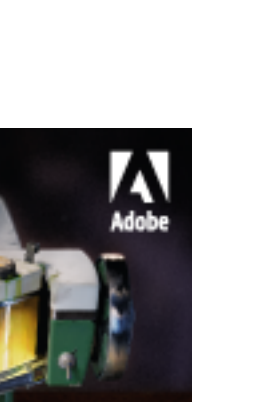
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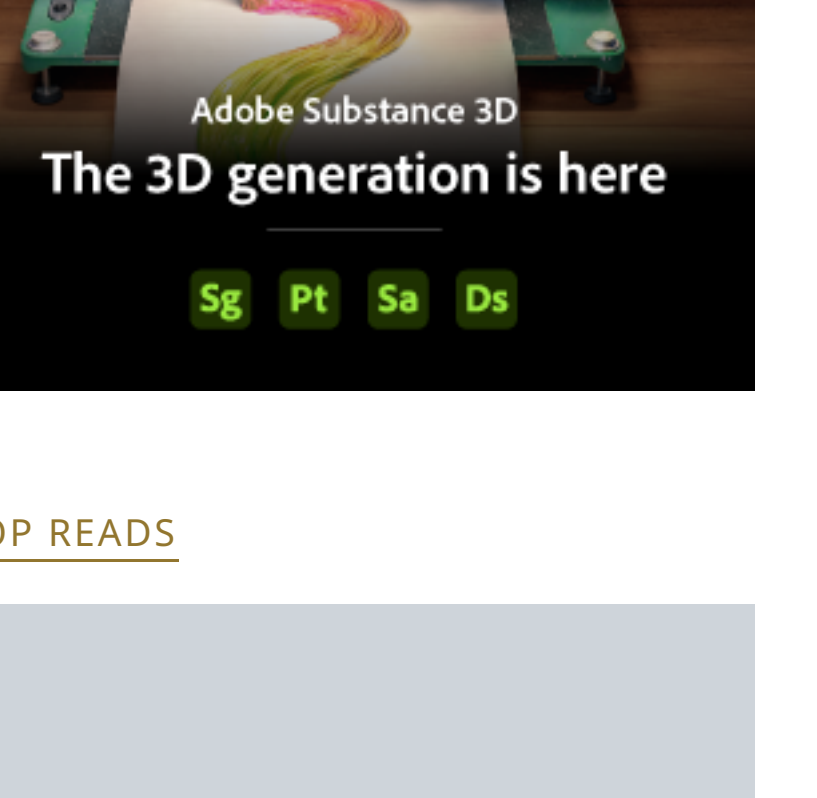
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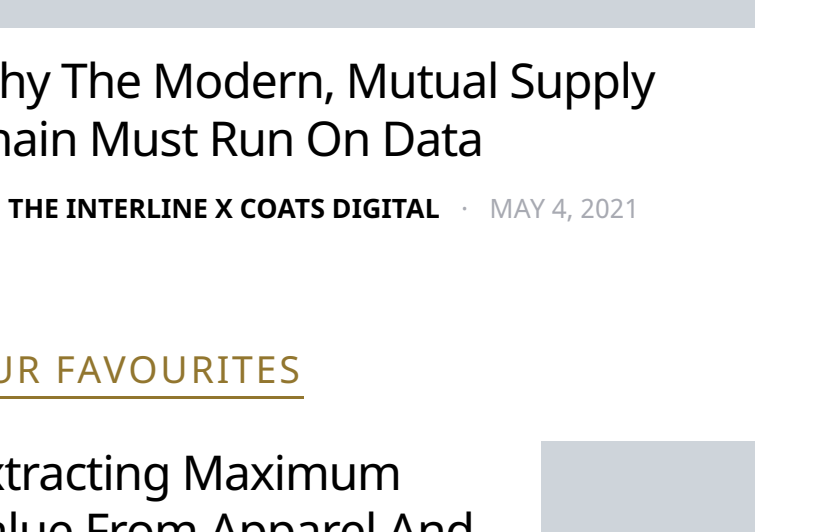


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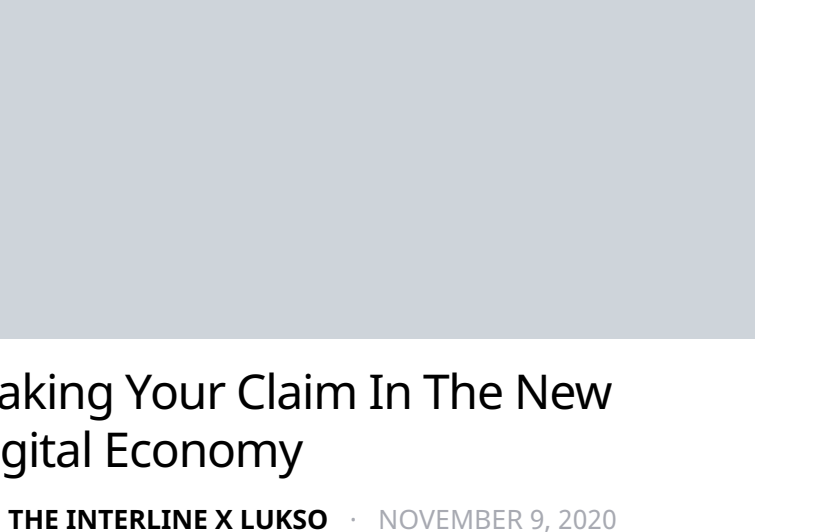


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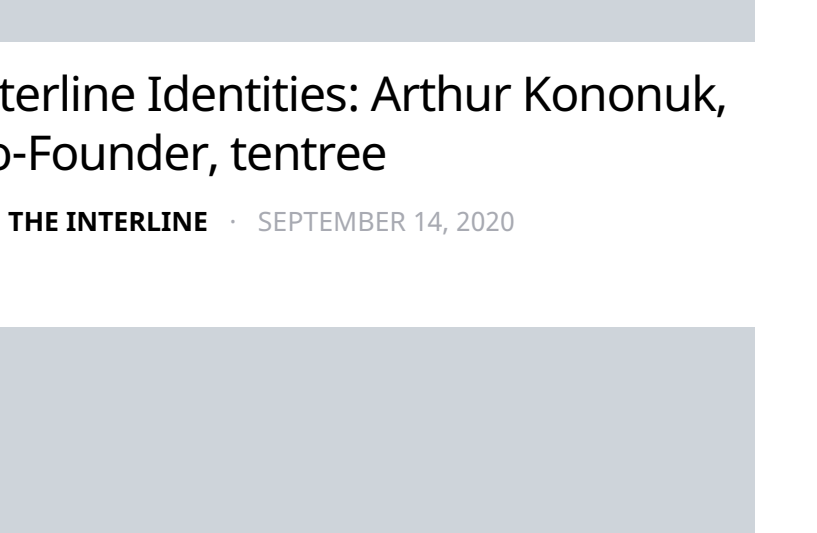


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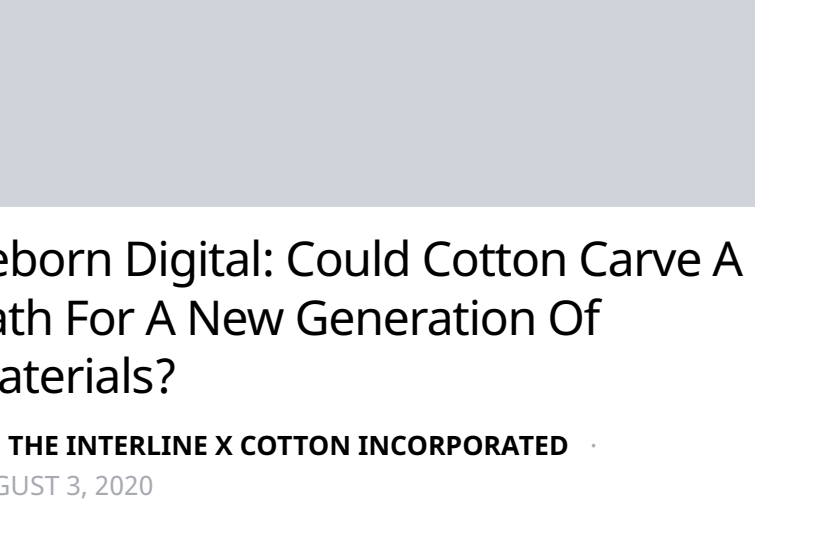
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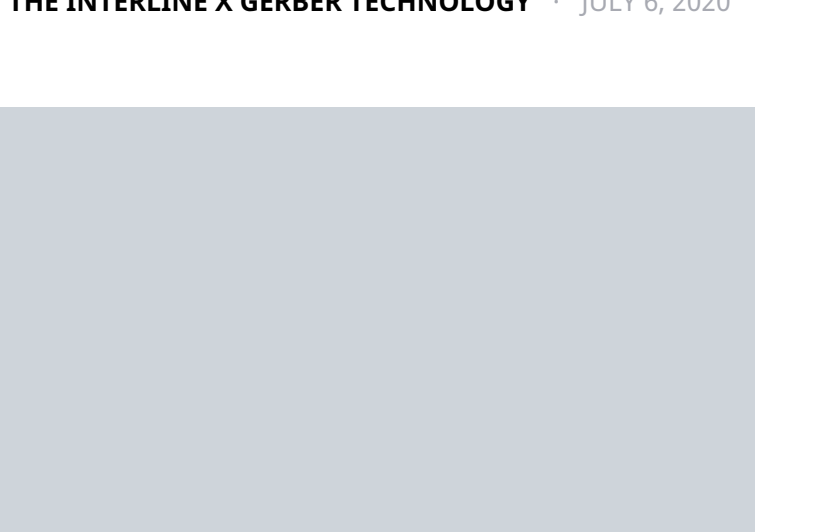
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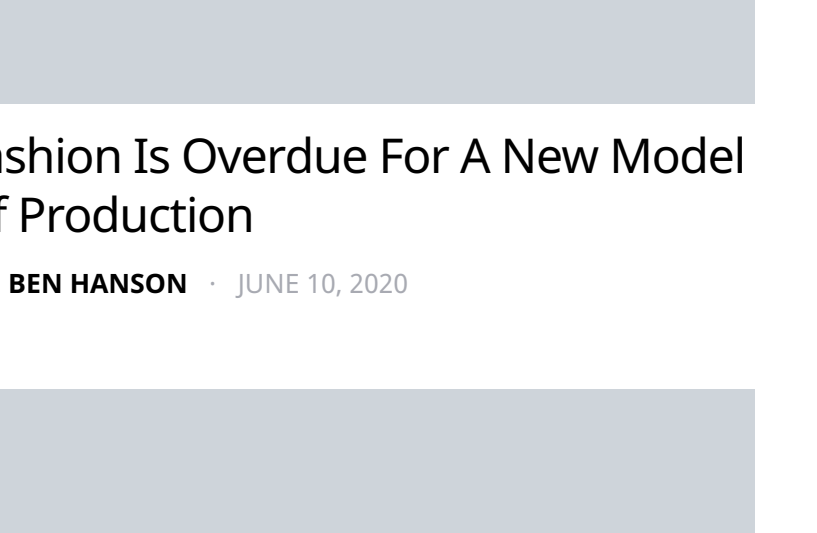
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