

Digitally Tracking Transactions & Ethics



Textile and garment companies face a growing challenge: more consumers want to know that goods are ethically sourced. For example, they're interested in whether or not factory workers are being exploited. Yet today's complex global supply chains in the textile industry can make know that, along with many other manufacturing and social issues, next to impossible.

But what if you could reliably track everything that goes into making an athletic shoe in a way that would not only ensure adherence to your corporate ethics policy, but also be available to the consumer at the retail level? That's the potential of a new technology called blockchain.

Blockchain is a digital distributed ledger, a database of transactions related to a particular digital asset. As the key technology underlying the digital currency Bitcoin, which emerged in 2009, it allows parties to trade a digital currency (the Bitcoin) in a trusted environment. But in the last three years technologists have realized that blockchains can be used to record and verify any digital asset or information, and a handful of companies are trying to use this technology to make global supply chains more transparent. They

claim the technology can track and verify the chain of materials, workers and events that go into the making of that shoe.

Blockchains are so complicated that even some technology analysts will admit, off the record, that they have a hard time getting their minds around how they work. The simplest way to understand it may be to compare it with "sharing economy" platforms like Uber. This car service works only because there is an objective third party involved that both matches driver with customer and ensures reliability, i.e., that a licensed driver will come when a customer calls and that the customer will pay a particular fee for the service. In other words, the service is enabled by a trusted third party; Blockchain replaces that trusted third party. It is a database of recorded transactions that is distributed across thousands of computers and secured by cryptography, which means no one party controls the system and no one can change what's been recorded in the ledger.

Blockchain Gains Traction

Today the most excitement, the most investment and perhaps the earliest impact, is happening in financial markets. The consultancy Greenwich Associates estimates that more than \$1 billion will be spent on finance-related blockchain

initiatives in 2016 alone.

The amount of investment to apply blockchain in supply chains is harder to quantify, but several startups have attracted venture funding. Two of them are developing financial platforms for the supply chain. Skuchain, for example, is trying to trim inventory costs and improve visibility and forecasting by using blockchain in something it calls "collaborate commerce." Fluent is developing a global payment system for supply chain partners.

At least one startup is focusing on supply-chain transparency. Project Provenance Ltd., funded by a technology accelerator fund called Wayra and the U.K. government, is building a system that uses blockchain to trace materials and events in the supply chain. In a white paper on the organization's website, it explains

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how the system creates a trail of digital information that provides the provenance of a product. The company maintains that rather than having any particular authority (even a supposedly trusted one like an NGO) track what goes on in a supply chain, the blockchain can ensure an authentic, secure information trail that cannot be altered. And unlike other certifications or chain-of-custody systems, it is inherently and simply auditable.

"Using blockchains as a shared and secure platform, we are able to see not only the final state (which mimics the real world in assigning the materials for a given product under the ownership of the final

customer), but crucially, we are able to overcome the weaknesses of current systems by allowing one to securely audit all transactions that brought this state of being into effect; i.e., to inspect the uninterrupted chain of custody from the raw materials to the end sale," says the white paper.

One of the key benefits of blockchain is that it can provide "a single version of the truth," says Bill Fearnley Jr., research director of compliance, fraud and risk analytics at IDC Financial Insights. In terms of money, blockchains build a ledger of transactions and shipments of goods that provide data that could enable improved inventory financing. In terms of transparency, they will provide records on sources that, when combined with other data, highlight potential problems. In garments, for example, you might find out that the buttons came from a plastics stamping plant in a country or from a company that was sanctioned for violating child labor laws 18 months ago. "Companies want to make sure they aren't doing business with bad actors," he says.

It is still very early in terms of blockchain's use in the supply chain. But if even half of what analysts are predicting comes to pass, the technology could shine a bright light on previously shrouded aspects of supply chains. ●

Article Resources

Video overview of blockchain by the World Economic Forum
primarily from financial point of view:
<https://www.youtube.com/watch?v=6WG7D47tGb0&feature=youtu.be>

Simplified explanation of blockchain:
<https://www.provenance.org/news/technology/intro-to-blockchain-part-i-what-is-a-blockchain/>

Explanation of how blockchain might be used for supply-chain transparency:
http://www.supplychain247.com/article/how_bitcoins_technology_could_make_supply_chains_more_transparent