



# HOW BLOCKCHAIN WILL REINVENT RETAIL AND THE SUPPLY CHAIN

## Introduction

How much do we know about the products we use every day? Where do they come from? How many hands have touched them on their journey to us? Manufacturers, distributors, retailers? Who's making sure our products are safe, authentic, and secure?

Consumers are increasingly concerned with the origination of products, especially food, the authenticity of goods, and the transparency of their transactions. Amidst a debate about GMOs and food labeling, more and more consumers want to know that the food they buy comes from reputable sources, whether the fish they bought was

sustainably caught, farm-raised, or 'organic'.

Enter blockchain technology.

The distributed, public ledger platform that has been gaining traction in the financial world as well as emerging sectors like healthcare, energy, and retail. Using blockchain in this fish example ensures transparency in how a fish was caught or raised as well as its freshness, compliant environmental handling, as well as its journey through the supply chain. With this level of transparency and accountability, expect consumer confidence to grow in

direct proportion to their brand loyalty.

It is becoming more and more apparent that the way retailers and consumer packaged goods (CPGs) sell goods and services is going to be significantly impacted by blockchain technology. Consumer behavior, appetite for information, more secure transactions, and the demand for transparency are already affecting the consumer's relationship with the brand. Blockchain technology answers these demands by guaranteeing the provenance of goods as well as the security of the transaction.

## The Supply Chain Comes of Age

Borne out of the industrial age and at one time an efficient means to deliver goods from point A to point B, it has become a lumbering giant of opaque provenance, transactions, and journey. In short, the traditional supply chain is woefully outdated. It has evolved (or devolved) into an inefficient system of delivery that siloes manufacturers and consumers, preventing each from understanding the needs of the other.

What blockchain technology brings to the supply chain is an infrastructure based on shared value networks of guaranteed transparency, community, immutability, authenticity, ethics, and security.

Companies like UK fish supplier, John West, understand the competitive advantage of transparent supply chains. As part of their promise to their customers, they print codes on their tuna cans to allow consumers

to trace the tuna all the way back to the fisherman who caught it. This service alone netted the company over US\$22 million in increased sales.

This is just one example of how blockchain technology will be leveraged by forward-thinking companies. Today, it's just an image file or printed label on packaging, the actual meaning of which is difficult to know and hard to verify. With blockchain, companies like John West can leverage a public, permanent, immutable digital ledger that guarantees provenance, security, and traceability across the entire product journey – verified and certified by all transacting parties – which is sure to exponentially boost consumer confidence in the brand.

### Increasing Consumer Demand for Transparency and Security

Blockchain technology has the potential to radically change the global trade model to

drive security of personal data, transactions, and consumer confidence, which is driven by the following factors:

- The need for improved, decentralized, and immutable systems increases as access to online information grows
- Consumers have come to expect transparency from brands in the new digital paradigm
- Blockchain technology guarantees security, transparency, and authenticity to wary consumers
- A variety of software firms (i.e. Provenance, Everledger, Ascribe) are helping brands justify the cost of ethically-sourced goods
- Blockchain technology is already proving itself to be an invaluable tool in the financial and insurance sectors

## Think of Blockchain as the New 'Supply Chain Operating System'

Due to its decentralized architecture, blockchain has the potential to drive a new paradigm for how supply chain applications are created, implemented, and utilized. It could literally become the new OS for supply chain networks such as SAP Ariba, Descartes, and GT Nexus.

In addition to the verification of provenance, we are starting to see retailers utilizing blockchain's distributed ledger technology to address other retail challenges that are potentially solved by blockchain. These include:

- **Counterfeit Prevention**

Since blockchain is a transparent, public, distributed ledger, it is the perfect solution to counterfeiting. All products and transactions are tracked from their origin through all transactions, so if a duplicate product or unauthorized transaction appears, it will immediately be flagged as counterfeit.

- **Stolen Merchandise Recovery**

When consumers complete a transaction, the authenticity of the product purchased

can be automatically verified and activated in the system. So if an item were to be stolen, it can be easily traced via any subsequent transaction, which is automatically recorded in the blockchain.

- **Fraudulent Transactions**

Since blockchain requires all parties to confirm their transactions, it acts like an escrow account, protecting buyers and sellers by holding funds until all parties can verify, which can be executed via smart contracts, eliminating the need for third parties.

# Additional Applications of Blockchain for the Retail Sector

The retail sector is already utilizing blockchain technologies to record transactions and drive accountability in a variety of ways. This includes everything from guaranteeing provenance and authenticity of luxury items and artwork, to the recovery of stolen goods and fraud protection for all parties involved. Here are a few more ways blockchain technology can aid and empower businesses involved in consumer goods and services:

- **Insurance Protection**

Insurance fraud accounts for losses amounting to US\$60 billion in the US and European markets each year, and over US\$133 million paid out to cover jewelry theft alone. Blockchain solutions can provide insurance companies and claimants with a permanent registry and secure verification, which assigns individual assets with unique identifiers that are nearly impossible to destroy or copy.

- **IP and Rights Management**

Blockchain-enabled platforms, specifically for artists and/or content creators, can protect their work and intellectual property (IP) with permanent, immutable links between artists and their art. Content can be registered in blockchain as well as all of its metadata including the number of editions, if applicable (i.e. limited edition, signed lithographs), ownership transferal, rights management,

agent permissions to sell the work, limited time loans, and file type (e.g. .jpg). All recorded data in the blockchain can also be made available on public platforms and utilized by libraries, museums, and archives (e.g. archive.org) to create a comprehensive digital history across the Internet of Things.

- **Counterfeit Protection**

Blockchain-based platforms can solve the issue of counterfeiting around pharmaceuticals, luxury goods, electronics, and diamonds. Consumers are able to ensure that the products they receive are authentic by verifying and certifying them directly with the manufacturers. This level of verification and certification in the digital ledger also allows stolen merchandise to be easily located, and the technology overall reduces any likelihood of fraudulent products making their way to the market.

- **New Marketplaces**

New marketplaces, not owned by companies or organizations, are sure to emerge. Such markets enable peer-to-peer trade between buyers and sellers without the need for any central authority. One example is OpenBazaar, which is an open-source project based on a decentralized network for P2P commerce online – using Bitcoin – that has no fees or restrictions.

Another potential application is the second-hand market for luxury products. Though it is currently relatively small, the blockchain platform opens up an opportunity that many would never suspect. Since most used, designer goods are not purchased from a reputable retailer, their authenticity can easily be forged. Adoption of blockchain technology in the retail sector could change all of that by tracking luxury goods, which can be verified by their cryptographically-signed digital asset, issued and certified by the original retailer. Counterfeit and fraudulent goods would be reduced and a thriving and profitable second-hand market could evolve due to increased consumer trust in the goods' authenticity.

- **Social and Environmental Impact**

Blockchain is an empowering tool for both the supplier and the consumer. Understanding what consumers want as well as the demand for particular products allows businesses to manage their supply chain much more effectively. Inventory can be managed with increased efficiency and wastage avoided through fact-based supply and demand data. This level of transparency allows retailers to reduce their carbon footprint as well as any negative impact their processes may have on the environment, engendering further consumer loyalty.

## Conclusion

Blockchain technologies stand to significantly impact manufacturing and retail by building permanent, immutable records of the entire product journey, eliminating the need for third party intermediaries, retroactive authentication, and conflict resolution. We expect to see the retail

sector leverage the technology to create efficiencies, reduce wastage, and live up to consumer expectations with regard to transparency, authenticity, and trust. Many retailers, CPGs, and manufacturers are now starting to ask, "How can blockchain technology benefit my business and

strengthen my relationship with my customers?" They are beginning to understand that new-age customers will demand blockchain-based transactions in the future for the sake of transparency, authenticity, and trust.

## About the Author



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Prior to Infosys, Scott was the Chief Strategy Officer at Publicis Sapient/Razorfish. Scott has been a strategist and digital partner for senior-level executives at Fortune 100 companies for over 25 years. Providing actionable strategic guidance across the entire digital ecosystem, Scott brings a rare combination of CXO-level business strategy, technology, and marketing experience in a fast-changing global market.

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