VIEW POINT

HOW BLOCKCHAIN TECHNOLOGY HELPS PREVENT RETAIL FRAUD

Abstract

Online retail is exploding and is only set to grow. Detection and prevention of fraud become imperative in this scenario. Privacy and data protection are blind spots for many technologies, however, blockchain technology has been designed keeping these precepts in mind. Blockchain helps prevent retail fraud, saving millions of dollars, shoring up consumer trust, and burnishing brand value in the bargain.

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Online retail is rocking. Statista.com pegs global retail e-commerce at 5717 billion USD in 2022. The number is expected to cross 8 trillion by 2026 – a mere four years from now. These numbers underscore how critical online retail has become as a driver of world markets. The numbers also serve to highlight how vital it is to eliminate fraud in retail.

Online retail is dogged by fraud. Fraud can assume menacing proportions for retailers – not only does it erode customer trust, but it also hits brand value significantly, besides, of course, making a dent in the finances of the retailer. Fraud can happen due to various factors. Retail supply chains are complex ones, with several third-party touchpoints including suppliers, sub-contractors, transporters, stockists, packers, and distributors, the threat of bribery, corruption, theft, or diversion of goods lurks at every point of the supply chain. With e-commerce, additional threats emerge – think of counterfeiting of high-end brands that lead to millions of dollars in losses, unauthorised sales of SKUs by third-party sellers online, adulteration of food products, and other fraudulent activities that dog retailers due to leaks in the supply chain.

In this scenario, blockchain technology has emerged as an effective solution to tackle fraud, by boosting fraud protection strategies and tackling common issues such as data security and supply chain security.

What is a blockchain? We would be well-served to start by defining blockchain. It is a digital ledger that is decentralised and distributed across a private, or public network, blockchain may be key to ensuring data integrity and also to protect the data. In the blockchain database, every transaction is shared among the users, and all users verify the authenticity and accuracy of the transaction. This ensures the integrity of the data that goes into the blockchain database.

A simple instance to understand better. Let us understand this better with a simple example – say, a consumer initiates an e-commerce transaction to purchase a high-end handbag. This triggers an action within the underlying blockchain network to verify the transaction. Next, a 'block' of data is used for storage of the verified transaction. A unique digital code called a 'hash' is generated and added to the block. Note that it does not contain any identifying information about the consumer or goods being sold. next, such hashed block(s) becomes an addition to the blockchain. Previous blocks in the database identify when the handbag entered the inventory, and from where.

All additions to the database are publicly available for viewing. User-specific information like usernames and digital signatures, though recorded, are not available for public viewing.

The de-identified, secure transaction ensures transparency for the consumer – she knows details about the transmission of her payment information, and where the handbag she purchased comes from. As the information is not in one place, instead it is distributed among several interconnected computers, and as a result, hackers cannot manipulate the data – 'touching' a block of the chain would have a ripple effect across the network. Blocks and hashes are linked closely. Editing a hash alters the hash code making it very difficult to edit a block.

The power of the chain. This simplistic example illustrates the power of the blockchain, hidden in these hallmarks of the technology -

- It is decentralised – no central 'database' is available of the blockchain. In contrast, copies of the blockchain are maintained and verified throughout the network. Any change to a block and the blockchain triggers changes across the copies, ensuring that tampering is mitigated, if not eliminated. This also ensures high reliability and availability – as there is no "single point of failure" that can bring down the network.
- It is transparent – every block is publicly viewable by participants of the network. This ensures that transactions are transparent. Such public ledgers help secure not just financial transactions but any transactions of value. In their book Blockchain Revolution, authors Don Tapscott and Alex Tapscott opine that "The blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value." Auditing such transactions becomes a non-issue, and trust is built.
- It is secure – The blockchain network tests computers that want to join the blockchain. Such computers need to have added levels of security. These layers, and the intricacy of the blockchain networks, ensure that it's just not worth the time and effort of hackers to try to penetrate the network.
- It is near-real-time – As transactions are settled speedily, points of friction are eliminated and risk is mitigated.
- As blockchain transactions can be made irreversible, back-office operations get simplified. Traceability, even down to the batch and lot number, becomes simple. This has huge ramifications for areas such as product safety. Product recalls become streamlined.

Here are some typical use cases. Blockchain has been particularly effective in ensuring food security in retail:

- Nestle has implemented a technology that will allow customers to follow the journey of their food right from where it is grown to where it is processed and marketed to.
- Blockaccino by Avanade (a Microsoft and Accenture joint venture) follows coffee beans from where they are grown to the warehouse to the roastery to the cafe and all the way to the cup.
- E-commerce giant Alibaba has deployed blockchain technology to assure consumers about food security with a food-tracking blockchain system.

These use cases are demonstrating to the industry that blockchain adoption can mean sound business, eliminating food production fraud and ensuring product quality. The industry has got the email: blockchain technology usage in the agriculture and food supply chain market is set to touch 5059 million by 2030.

Fix the supply chain, fix fraud. When it comes to optimising the supply chain, the benefits offered by the adoption of blockchain are enormous.

- Manufacturers and suppliers can work off of the same ledger, remaining informed at every step, without explicit information being sent out.
- The chain can maintain purchase order information, goods received notes, lot numbers, and product information. Logistics information and invoices go into the blockchain as well.
- Only genuine tags and verified products enter the blockchain. If a tag gets duplicated, it is easy to scan the chain and locate where the original/genuine tag was added to the chain, thereby revealing the fake.
- As relevant data enters the chain at every point, the products are tracked along every step of the journey as they evolve and move from raw material sourcing through manufacturing, shipping, distribution and sales. Such oversight ensures raw material and product quality are as per specifications.
- Unnecessary servicing and repair costs are reduced as product quality is watertight.

Such transparent blockchains ensure that product adulteration is virtually eliminated. Diversion of goods and theft that may occur in the supply chain are instantly detected and traced back to the origin.

Down the line, retailers can enjoy better inventory management and customer identity management courtesy blockchain.

They can in turn leverage the technology better to offer blockchain-based loyalty programs and other benefits. Buoyed by such promise, retailers such as Walmart, Target, Ikea and Home Depot have hopped onto the blockchain bandwagon in various forms.

It is perhaps not an overstatement to say that blockchain technology is emerging out of the shadow of cryptocurrency, and is finding its place in the sun as a means to prevent online retail fraud.

* For organizations on the digital transformation journey, agility is key in responding to a rapidly changing technology and business landscape. Now more than ever, it is crucial to deliver and exceed on organizational expectations with a robust digital mindset backed by innovation. Enabling businesses to sense, learn, respond, and evolve like a living organism, will be imperative for business excellence going forward. A comprehensive, yet modular suite of services is doing exactly that. Equipping **organizations with intuitive decision**-making automatically at scale, actionable insights based on real-time solutions, anytime/anywhere experience, and in-depth data visibility across functions leading to hyper-productivity, Live Enterprise is building connected organizations that are innovating collaboratively for the future.

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