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How can blockchain technology help secure the supply chain?



by
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Blockchain, the ledger of transaction data most commonly associated with Bitcoin, can be used in service of supply chain management. Here's a look at how.

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Blockchain technology has great potential in managing supply chain data, specifically to maintain quality and certification data, chain of-custody information, and other critical safety and regulatory information.

Blockchain, which first came to public attention in conjunction with the Bitcoin digital currency, is a type of distributed database that stores a permanent and tamper-proof ledger of transaction data. A critical feature of blockchain is that control is distributed across a network of participating entities with no central server. No entity "owns" or controls the data. All information provided to the blockchain, which some refer to as distributed ledger technology, is authenticated through an unforgeable digital signature that allows the user to prove their identity while preventing another user from impersonating them in the future.

Each computer that is connected to the chain of transactions, or node, is updated as each "block," or additional transaction, is made. The data is distributed and duplicated across the network, and member computers are constantly communicating with one another, comparing data to make sure it is correct and matches previous records and is therefore valid. Many security experts believe that blockchain is unhackable and impossible to shut down because there's no central server.

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Blockchain technology was created to ensure secure transactions. In a traditional data processing situation, whoever controls the server controls the data. So the entire integrity of the system is dependent on that owner, or controller. If a company should decide to "fudge" the data for any reason, there is no assurance that the fraud would ever be detected. With blockchain, no one entity is in control of the data -- control is distributed across the network. Every entry is authenticated, and all data is confirmed across the network, so it can never be altered or corrupted.

The use of blockchain technology in service of supply chain management focuses on certification data, chain of custody and ensuring regulatory requirements are met for controlled goods like pharmaceuticals and food. Blockchain technology is being actively considered for securing healthcare records, for DNA data and other personal information that is being circulated through the pharmaceutical research community and will likely become the go-to method for securing medical and health related supply chain data. Food and beverage, automotive, electronics, aerospace and defense, and other communities will likely follow in their application of blockchain to secure batch and lot, quality, safety and traceability information.

**Dave Turbide asks:** In what ways do you think blockchain technology can help your organization? 0 Responses **Join the Discussion** 



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