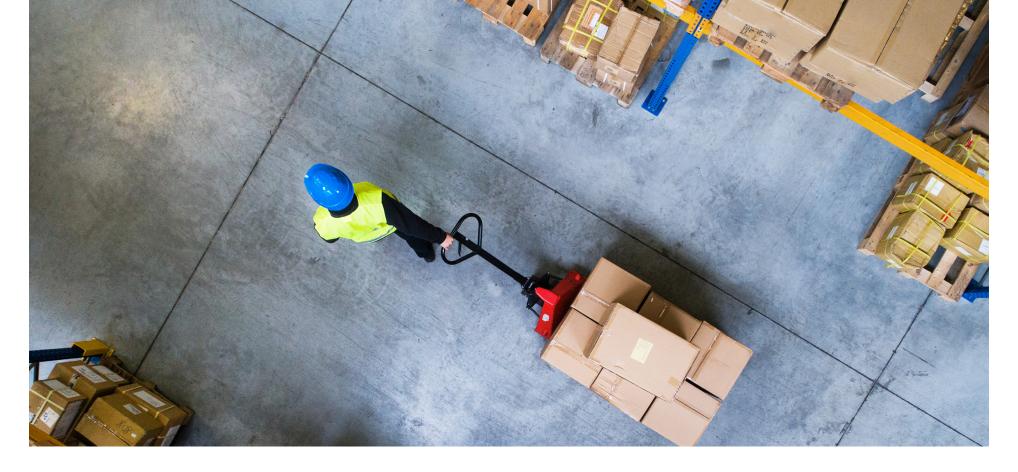# LENOVO

Taking supply chain excellence to the next level with blockchain.

Manufacturing billions of dollars' worth of consumer and commercial tech each year, Lenovo manages a highly complex global supply chain network. Today, blockchain innovations are helping the company to optimize operations in exciting new ways.

Lenovo

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A global leader in consumer, commercial and data center technology, Lenovo is no stranger to innovation. So, it should come as no surprise that the company is spearheading a total transformation of its supply chain operations, based on emerging technologies such as blockchain, artificial intelligence (AI) and the Internet of Things (IoT).

Bobby Bernard, Global Procurement and Supply Chain Executive at Lenovo, begins: "We are working to digitize our global supply chain to improve visibility, unlock new efficiencies and drive revenue growth. Our ultimate goal is to transform our supply chain from a cost center into a profit center."

Coordinating the movement of raw materials, components and finished products between factories, distribution centers and customers is a huge challenge, especially considering the scale and size of Lenovo's business operations: every year the company manufactures and distributes products worth more than USD 43 billion.
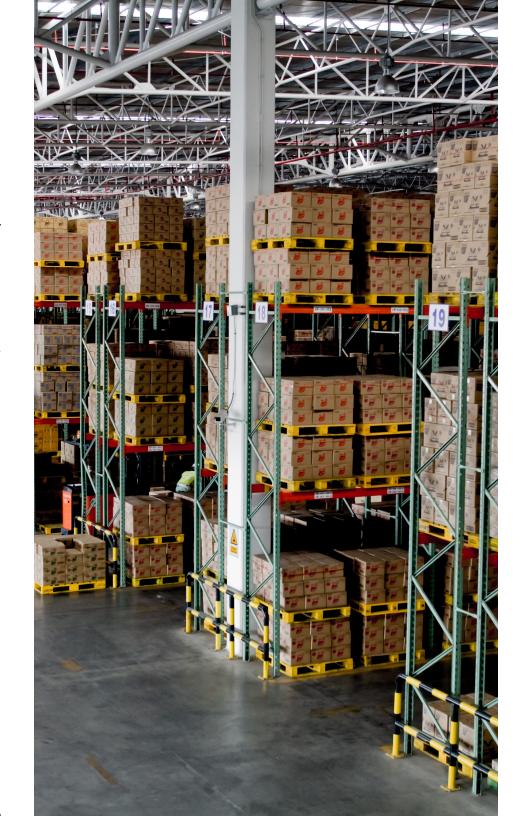
"We already have best-in-class systems and processes in place, and have been recognized by Gartner as an industry leader in supply chain excellence," says Bobby Bernard. "But we're always looking for ways to optimize operations even further, and blockchain stood out as the ideal way to increase visibility and transparency across the supply chain."

Blockchain is a digital, decentralized ledger database that records and stores all transactions between users on a given network. Transaction records (or 'blocks') are timestamped and cryptographically secured, locking them in a linear, chronological order. This provides a transparent, immutable collection of every record, safeguarded against tampering.

Vishnu Kotipalli, Global Supply Chain Strategist, remarks: "There's a lot of buzz around blockchain at the moment, especially off the back of Bitcoin and the cryptocurrency boom. From our perspective, blockchain means trust. It's the ideal platform for recording supply chain transactions, as it makes it much easier to track and audit the movement of goods."

Managing inventory procurement from original equipment manufacturer (OEM) partners was one area that Lenovo identified for blockchain transformation. The company operates a buy-sell procurement model, buying commodities, such as hard drives, from trusted suppliers for resale to OEMs. Previously, Lenovo exchanged physical purchase orders and invoices with these partners – the management of which was a predominately manual, time-consuming process. This process is now live on a Lenovo blockchain network that the company is expanding to other supply chain processes and adding additional entities, such as freight forwarders or even government agencies.

Bobby Bernard confirms: "By enabling this process on a blockchain network, we have eliminated inconsistencies due to human error, reduced turnaround time and increased transparency. So rather than sending paper or electronic documents back and forth, everyone can exchange information securely."

Guo Xiaobing, Director, Principal Researcher, Blockchain Research Team, adds: "Blockchain improves visibility, strengthens trust, reduces complexity and cost, boosts efficiency, and supports smarter decision-making. Based on this proof of concept, we've demonstrated that having a single shared ledger in place increases data transparency, and improves collaboration with suppliers and OEM partners."

Based on this success, Lenovo is looking to expand its use of blockchain into other areas of its supply chain, including asset management, supplier onboarding, business partner compliance, software royalty management, and tracing the origin of minerals and metals used in production.

Vishnu Kotipalli says: "We're taking an agile approach to development and are experimenting with several different blockchain platforms to find the best fit for each use case. In the long term, we're planning to offer these internal solutions as services to our customers, so that they can take advantage of the latest blockchain innovations as well."

When it comes to blockchain, Lenovo is technology agnostic. The company uses various blockchain platforms, such as Hyperledger Fabric and Ethereum, to support supply chain operations. A member of several consortia and collaborative projects, Lenovo is committed to blockchain research and the development of intelligent solutions to industry challenges.

Bobby Bernard concludes: "We know from our own experience how powerful a tool blockchain is and the potential it has to transform supply chain operations for the better – now we want our customers to realize that power too. We're excited to expand our use of blockchain in the coming years, and integrate it with big data analytics, AI and IoT technologies to make our supply chain operations fit for the future."

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