



How Blockchain Can Improve Your Supply Chain From Sourcing to Service

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You've heard blockchain technology touted as a supply chain panacea: easing the flow of products and information up and down the supply chain by delivering data to inform demand forecasting and supplier finance, enabling supply visibility, communicating nonstandard information, tracking end users, and rendering component movements completely transparent. While getting from here to

there may seem daunting, there are various ways to strategically alleviate supply chain pain points one small step at a time — without overhauling your entire system.

Explore how blockchain supports the future of supply chain management.





Volume Electronics Smart Speakers: A Blockchain Use Case

Many organizations are already gaining business value from blockchain, but to get an end-to-end view of the possibilities, imagine you're leading a new product initiative for Volume Electronics. Volume is a consumer electronics company known for making high-quality speakers. The company intends to convert some of its existing speakers into smart speakers and leverage them to enter the B2B market as a provider of smart assistants for company conference rooms. You have a plan, but before you can implement it, you need to analyze and adjust your supply chain to accommodate it.

To make your speakers smart, you have to add microphones, as well as audio digitization and secure network connection technologies. That means you'll need new suppliers and, when you enter B2B, new channels of distributors and resellers. You've heard of blockchain and you're willing to be an early adopter if it can really deliver on its promise of improved supply chain management.

You see plenty of opportunity to capture market share with your new smart speaker product line if you implement your plan intelligently. That's why you empower your team to use whatever technology will work best to match your supply with an uncertain demand. Above all, you need your systems to operate as efficiently as possible as you scale up this part of the business.

Using blockchain technology strategically throughout this process will help ease pain points in your entire supply chain. **Blockchain provides a network that you, your buyers, and your suppliers can use to securely share transaction details and improve overall supply chain collaboration.** It becomes an open standard for your supply chain's information, in which every transaction and event creates a trusted permanent record that can be used to eliminate disputes and prove compliance, when needed.

Blockchain Solutions for Supply Chain Pain Points

Sourcing and Onboarding

Creating new supplier categories and finding qualified vendors within each category is an onerous process. If possible, you will try to secure more than one supplier for the microphones and other components necessary to turn your speakers into smart speakers, which will mean analyzing each suppliers' technical fit and risk factors.

Blockchain simplifies this process. When sourcing components, you can use an existing blockchain-based supplier network to find and analyze suppliers who are already trusted by major companies. You can search by category within the system and verify a supplier's capabilities and performance by reading trusted reviews of the company.



Identify an existing blockchain-based solution that can be used to address one or more supply chain pain points.

Once you've identified suppliers, it's time to onboard them by gathering the company's ownership info, financial details, policy compliance, and information about its facilities and workforce. Unfortunately, this isn't a one-and-done deal — the same process may have to be repeated annually to keep up with relevant changes. With blockchain, however, you can easily access supplier records, information from government agencies and insurers, and prior verifications completed by trusted parties, all in one place. You'll also receive real-time updates, rather than having to manually recheck each supplier's records every year.





Procurement

Volume Electronics' demand forecast for its new smart speakers is uncertain, but you need it to be as accurate as possible. If suppliers are constantly overstocked, they may start to charge more to compensate, or overreact and then fail to deliver. You also have to account for potential setbacks with tier 2 suppliers that could impact your direct suppliers' ability to deliver on time.

A blockchain network can make demand forecasting and procurement more efficient by providing all parties within the supply chain access to relevant data about sales and distribution. Because none of the data can be viewed without authorization, suppliers and buyers can confidently share information on the secure network. Retailers can communicate inventory and buying patterns in real time, and suppliers can make and ship components only when needed.



Use blockchain to share forecast and inventory data that benefits each party in a supply chain.

Even tier 2 suppliers and beyond can engage with the network's ongoing, real-time conversation so that you'll be immediately aware of any issues that could affect the timeline. With advanced warning, you can promptly notify buyers and other parties who aren't privy to that information. Even if you can't prevent a slowdown,

you can minimize its impact by staying on top of it and keeping your supply chain informed.

Because your smart speakers are IoT devices, there's a component for secure internet connectivity. The component supplier creates and installs a unique digital certificate in each part it produces; you need to know which certificate is in each speaker so you can authorize the speaker's access. Electronic data interchange (EDI) wasn't designed to share this information, so the supplier emails a spreadsheet after each shipment. This is manual and error-prone, and it makes it hard to track the certificate used in each speaker.

Blockchain can share this information more efficiently, lining up shipment information with the details of the included parts and their digital certificates. That way, all of this information stays in sync throughout the manufacturing process and can be accessed by the cloud service to authorize speakers as they move into the channel.

Questions about product quality also cause disruptions. Having found some irregularities in the product quality of the microphones when you were prototyping the speakers, you're using blockchain to preventively trace at least the lot numbers of this component into the completed product. That way, you have the information you need to analyze and respond to any significant problems that arise down the line.

Manufacturing

Volume Electronics is set to manufacture the new smart speakers in-house, so you do have control over production. However, occasional irregularities with microphone components mean that higher-ups are insisting on on-site retesting in Volume's own labs to ensure the quality of the components you use in your smart speakers. This creates an additional cost and can slow down manufacturing when supplies are low, further pressuring the supply chain.



Eliminate redundant quality testing by using blockchain to obtain trusted information from a supplier's manufacturing and testing.

When you receive components, such as microphones, through a blockchain-powered system, your supplier's testing processes can become transparent. Instead of retesting in your own lab, you can determine the component's quality by retrieving the lot's results from the blockchain system. Test results can be recorded directly from test equipment and while the supplier can, if needed, add notes to the test results, they can't alter or erase them.



Fulfillment

As your new product takes off, it will be increasingly important to ensure transparency and accuracy. You'll need to know as much as possible about how and when every shipment is delivered and received. Even with a good 3PL to fulfill orders, you'll still encounter occasional disputes about the receipt of goods. In particular, dates of delivery and potential interest charges and late fees will come into question. These are difficult to resolve without the detailed, accurate, and timely records of product movement that are shared in a blockchain network.



Use blockchain to eliminate process steps like data reconciliation between buyers and suppliers.

Blockchain can also reduce days sales outstanding by eliminating the need for buyers to verify and reconcile invoices. Blockchain smart contracts can automatically post a "clear to pay" invoice based on the relevant purchase order and the goods receipt records in the blockchain. These trusted invoices also make it easier and less expensive to use supply chain finance to smooth out cash flows.





Distribution and Resale

Volume Electronics wants plenty of information to plan future distribution and resale efforts. Unfortunately, sales and inventory reports are usually received from retailers on a monthly or quarterly basis; a precious few will report weekly. End-user data is also scarce and unreliable: Retailers rarely provide it, and only a small percentage of consumers will register their products.

If you've been using blockchain to share sales forecast data, however, then Volume Electronics is already connected to distributors and resellers. The same network can also support actual sales data sharing and, if authorized, end user information. The visibility can improve models for predicting future sales, then pair

with forecasts to drive manufacturing and distribution plans. And because blockchain can have trusted rules to control information-sharing, retailers can share relevant data without revealing risky or proprietary material.

As Volume Electronics ventures into the B2B world, you'll be working with channels that are even more protective of their information. Many B2B sales involve solutions that are made up of different products from multiple companies. With blockchain, you can encourage (and possibly compensate) resellers to securely share information about the solutions your smart speakers are part of. That will help better understand customer needs and develop solutions or partnerships to better serve them.



Demand forecasting

Blockchain improves demand forecasting by delivering real-time data to manufacturers and their supply chain partners.



Supply visibility

With blockchain giving transparency to every link in the supply chain — including tier 2 suppliers and beyond — manufacturers know in advance how disruptions in supply will affect production.



Supplier finance

With trusted records in blockchain and sign-offs from the buyer of what's been ordered, delivered, and invoiced, finance companies can pre-pay invoices for suppliers.



Component traceability

Blockchain supports service and recalls by tracing components with real-time, irrefutable records of suppliers, shipment, and deliveries that show support organizations exactly what parts were used in a product, or target recalls to the products with specific, problematic parts.



Sharing nonstandard information

Blockchain can share nonstandard data like device identities between supplier and buyer so that the company has all the information it needs to support the product at any stage.



Customer insights and service

Blockchain can be used to share the customer details, configurations, and authorizations that support service and sales. It can also be used to understand what items are bought together to improve product development and identify partnership opportunities.

Ready to smooth out your supply chain?

You don't have to be launching a new product to benefit from blockchain solutions, and you certainly don't have to overhaul your entire supply chain ecosystem. Blockchain can complement existing supply chains by coupling with existing systems to add transparency and security to the specific aspects you need to improve. We specialize in providing nimble, easy-to-work-with and easier-to-understand blockchain solutions for businesses of all sizes. As a leading blockchain consulting and implementation company, we've seen firsthand the difference that a more transparent and collaborative supply chain can make.

If you're ready to get started, or wondering if you should, then contact us to schedule your free 30-minute consult to learn the top three ways blockchain can help your business. Email us at sales@chainyard.com, or call (919) 806-3535 and ask to speak with one of our blockchain experts.



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