BLOCKCHAIN

# Why Blockchain Technology Is the Future of Supply Chain and Vendor Management

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Blockchain technology is a major disruptive force throughout a range of industries, and its impact on the global economy will only continue to grow as Bitcoin is once again catapulted into the spotlight following a fresh all-time high price rally. Crucially, crypto innovation is set to carry a significant implication for the digital transformation of both supply chain and vendor management.

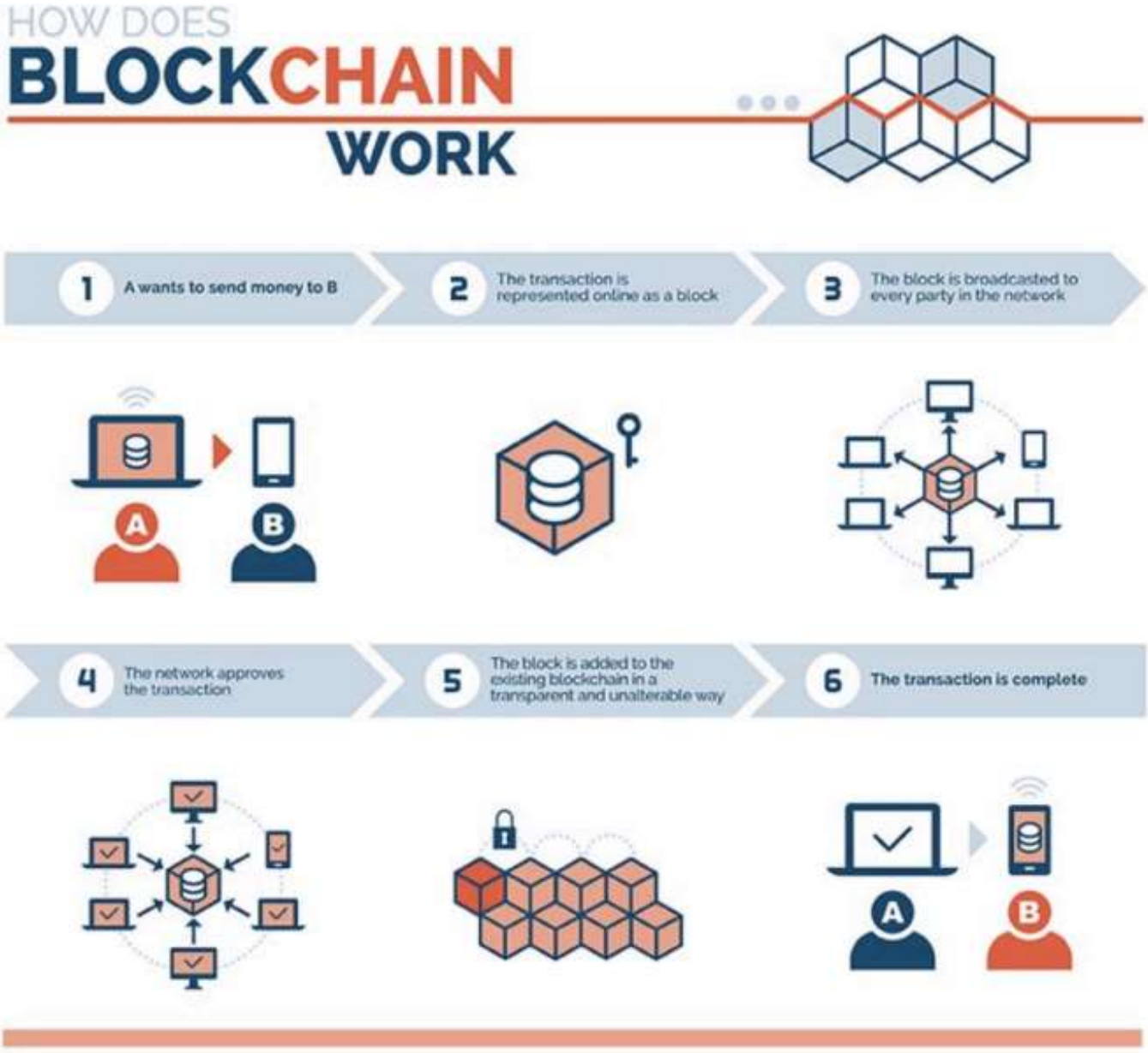
Still unsure of the impact blockchain will have on the business world? According to Fortune Business Insights, the landscape is expected to grow from $17.57 billion in 2023 to $469.49 billion by 2030, representing a compound annual growth rate (CAGR) of 59.9%.

This growth will see blockchains spill out of their finance-based use cases and fundamentally transform how entities collaborate.

Interorganizational collaborations can help to bring unprecedented levels of trust and efficiency throughout supply chains and offer a competitive advantage for ambitious companies on a global scale.

## Reaping the Rewards of Blockchain-Backed Trust

Crucially, blockchain helps to bring new levels of trust between trading partners and promotes end-to-end visibility. Fundamentally, this brave new technological frontier can help resolve supply chain issues faster and build better relationships between industry players.




Feedback

Because blockchains are built on consensus mechanisms, changes must be verified by the network. This provides a far more immutable framework that offers unprecedented levels of transparency throughout the supply chain.

At the heart of blockchain-based trust are smart contracts, which operate as self-executing programs that automate the actions required in an agreement or contract. When these actions are taken, they are fully trackable and irreversible, meaning that the blockchain offers a clear breakdown of an agreement and its terms.

Smart contracts enforce supplier relationship management by ensuring uniformity of product, regardless of where it was manufactured.

“Each of the key data points is written on the blockchain directly,” explained Sunil Thomas, president and COO at TraceOne. “If specifications aren’t met, the offending batch is scrapped and used for other purposes.”

Because smart contracts only execute when conditions are met, they can bring many benefits to different industries for a variety of purposes. In the food industry, smart contracts can be great quality control tools for measuring client expectations for ingredients and managing food waste.





Should a contamination occur, blockchain records make it possible to trace the food back to its source in a matter of seconds, rather than taking days to break down the supply chain.

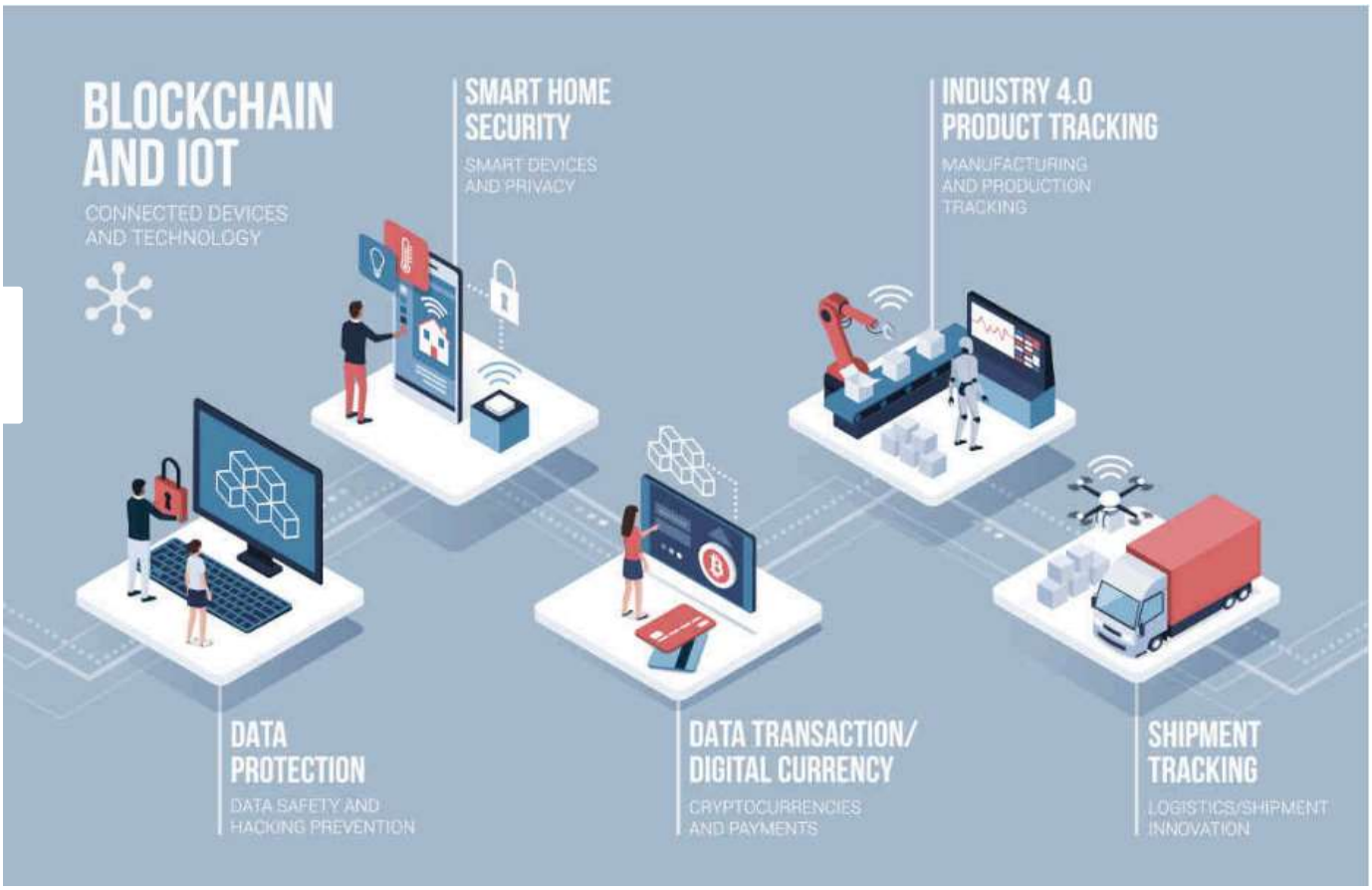
This carries a practical benefit for mitigating the impact made by a faulty product. If any sub-par component or product is detected, the blockchain will empower a business and its supply chain partners to trace the product, identify the suppliers involved with it, identify every production and shipment batch associated with the faulty component, and recall it without risking greater economic damage.

## Simplifying Logistics

Effective supply chains hinge on efficient logistics and inventory management, and blockchain technology helps to bring a more holistic view of factors like product location, status, and availability to businesses.

Incorporating smart contracts into operations to automate inventory replenishment, trigger orders based on pre-determined conditions, and coordinate strategies among stakeholders helps to deliver unprecedented levels of accuracy to business logistics.

Because blockchain can operate alongside real-time information, it means businesses can leverage Internet of Things (IoT) devices for more informed decision-making processes when it comes to managing inventory levels, transportation routes, and delivery schedules, meaning that customer satisfaction levels can be better managed without the risk of running out of popular products.






With supply chain disruptions becoming increasingly commonplace in a post-pandemic landscape amid news of Suez and Panama Canal difficulties and further complications arising from climate change, the effective management of logistics is becoming increasingly imperative for businesses.

This means that active and even contextual stock monitoring and self-executing smart contracts can trigger new shipment orders based on the flow of customer demand and changes in delivery

forecasting–all without the need for human intervention.

## Effectively Vetting Vendors

The benefits of blockchain transcend the supply chain management landscape and can be an excellent asset in accurately assessing vendors and performing the required due diligence for the best understanding of their products, services, and any potential business risks they pose.

Because necessary information is recorded permanently onto the blockchain, users are provided with invaluable insights into the previous relationships and activities of vendors, along with the fourth parties that may have interacted with in the past.

Once again, smart contracts can help in the due diligence process. For instance, previous blockchain transactions could help to expose a vendor that violates the ESG policy of an organization. This would automatically contravene the terms of the smart contract and put a stop to the relationship before any damage is done.



Given the global distribution of supply chains, the challenge of monitoring the ESG credentials of every relationship a business builds can be tricky. However, the immutable nature of blockchain can highlight ESG discrepancies with unprecedented efficiency.

Naturally, there are already many software providers that enable businesses to manage vendors, undertake invoice tasks online, and manage payouts.

As the blockchain landscape matures, smart contracts can either operate alongside these sophisticated vendor management systems to help maximize the vetting of vendors or to better optimize payouts based on predetermined criteria.

## Building a Scalable Infrastructure

For businesses seeking to scale their operations, more private and exclusive blockchains offer a far stronger level of functionality and security than public networks, and the future will see more ambitious businesses taking advantage of private chains to facilitate growth.

Taking blockchains private can be an effective way of mitigating supply chain risks and improving both transparency and the safety of sensitive data.

When it comes to scalability, it's important to explore the IT frameworks of different blockchains. For public chains, scalable solutions can include high-capacity layer 1 blockchains and solutions like layer 2 blockchains.

Crucially, layer 1 chains can empower higher throughput of transactions but this function comes at the cost of true decentralization. Layer 2s, however, are scaling solutions that build on top of layer 1s to bundle transactions before sending them back to layer 1. In a nutshell, this helps to maintain a level of decentralization to ensure that the chain remains immutable.

Private chains, however, are more functional when it comes to scalability. Permissioned participants have the power to rely on high-performance hardware and simplified consensus mechanisms to facilitate transactions on the chain. Additionally, each industry will have the ability to choose what supply chain network best suits their needs.



or instance, it a public chain is required, then it can utilize layer 1 and 2 protocols to encourage more ffective scaling. If a private and permissioned chain is required, network usage should can determine ıe more bespoke needs of a chain and its growth prospects.

## Leveraging Future Growth

The continued emergence of blockchain as a $469 billion industry will directly benefit the supply chains of organizations throughout a wide range of industries, with use cases growing far beyond the confines of finance.

This will help to leverage more growth opportunities for the organizations that are ready to utilize the power of the technology.

Here, benefits can be reaped from the standardization and automation of processes, and empower more businesses to become more compliant, efficient, and to automate more time-consuming operations.

Crucially, the age of smart contracts can not only bring greater levels of trust but will also help more businesses to make sustainable ESG commitments and vet their vendors with unprecedented ease.

Blockchain may be recognized for its transformative impact in the world of finance today, but tomorrow it's sure to become a key tool for organizations across a far greater range of verticals.