# The Benefits of Blockchain to Supply Chain Networks

**Watson
Customer
Engagement**

IBM

# THE BENEFITS OF BLOCKCHAIN TO SUPPLY CHAIN NETWORKS

Blockchain technologies are rapidly being adopted in the financial services industries, and analysts project supply chain operations to be the next fertile ground for this fast-evolving technology.

Blockchain is a distributed, or shared, ledger that holds records of digital transactions in such a way that makes them accessible and visible to multiple participants in a network, while keeping them secure.

The digital shared ledger is updated and validated with each transaction, resulting in a secure, permanently recorded exchange. The result is faster, permissioned and auditable B2B interactions between parties such as buyers, sellers and logistics providers.

As shown below, blockchain can augment established B2B integration technologies such as EDI, XML and API-based B2B with a new shared visibility overlay for transaction and information flows.

Analysts and tech leaders believe blockchain will do for transactions what the Internet did for information.

A key benefit of blockchain for supply chain networks is that it establishes a shared, secure record of information flows; a 'shared version of events' across networks for supply chain transactions, processes and partners.

_____

"One of the key benefits of blockchain technologies is in the immutability of the data in the chain. If the genesis block was created with trustworthy data, and each additional transaction is validated by network consensus, then in theory the current state of the chain can be trusted…. establishing a high level of data integrity, thereby making data trusted, available, secure, and compliant for everyone connected to the blockchain network."

_____

– "Blockchain -- A Data Management, Integration, and Integrity Disrupter," Stewart Bond, IDC, March 2017



Buyer                    Supplier                    Carrier
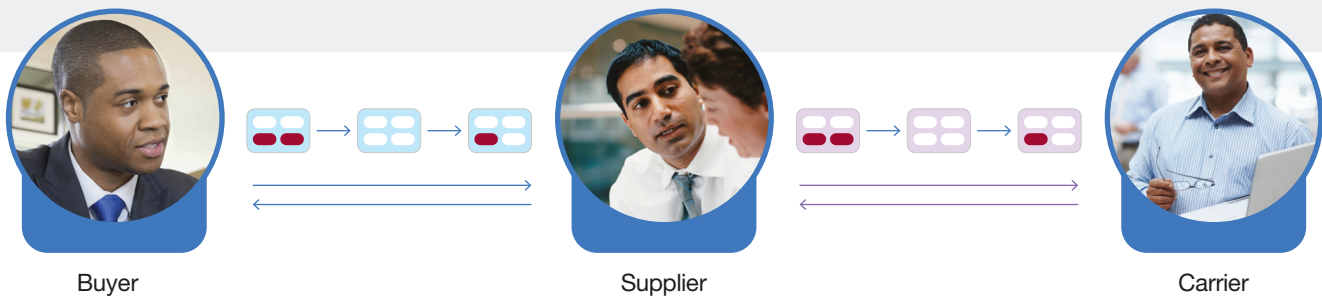
Business network information flows are typically one-way point-to-point communications

Shared Visibility Ledger

Buyer　　　　　　　Supplier　　　　　　　Carrier
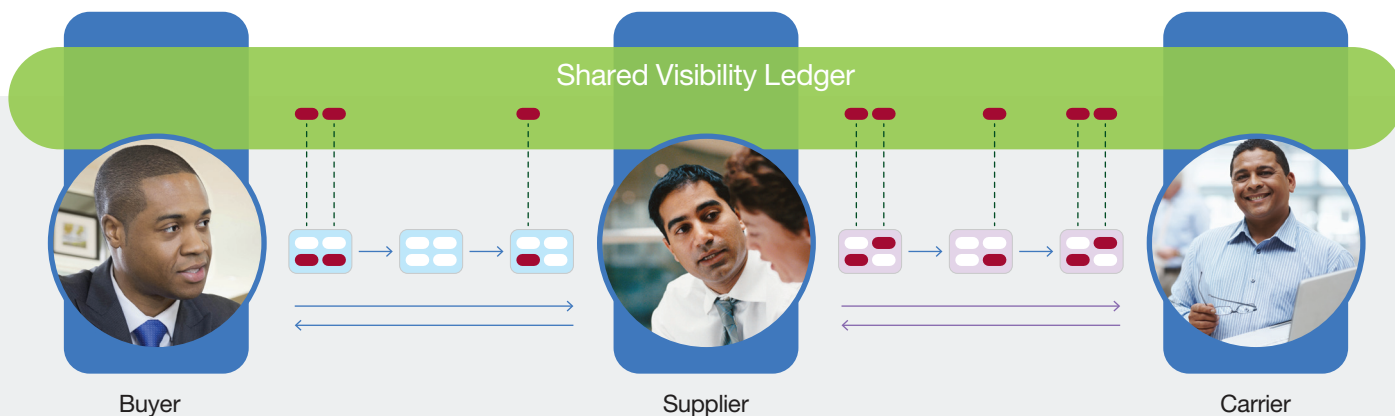
Shared digital ledgers augment point-to-point communications with a new multi-party visibility overlay for information and event flows

This 'shared version of events' enables improved supply chain efficiencies, better multi-party collaboration, and streamlined resolution processes when exceptions or disputes occur.

Although shared visibility solutions exist, they are generally proprietary and therefore not interoperable. By contrast, blockchain is evolving through open standards initiatives, such as the Hyperledger project run by the Linux Foundation. As such, it portends to be the linchpin for delivering a true 'network of networks' for supply chains, enabling organizations to establish and seamlessly integrate information flows across the entire set of supply chain disciplines and processes.

Leveraging blockchain is not about replacing well-established forms of supply chain interactions, such as EDI, which today deliver proven business value and are integrated into enterprise applications systems such as ERP. Rather, as organizations implement new supply chain technologies, for example Internet of Things (IoT) technologies for improved logistics processes monitoring, blockchain will be used provide a synthesized record of information flows. This level of shared visibility will offer organizations an opportunity to optimize multi-party supply chain processes.

Finally, as blockchain evolves and organizations increasingly adopt the technology, blockchain-based smart contract technology will be deployed to further streamline exception handling and introduce new forms of supply chain process automation.

## Take Action with IBM Blockchain and IBM Watson Supply Chain

To help IBM customers jumpstart their blockchain initiatives, IBM intends to add support for IBM Blockchain to the market-leading IBM Supply Chain Business Network as well as IBM B2B Integrator gateway software.

IBM Watson Supply Chain customers will have one seamless environment for well-established forms of B2B integration combined with newer blockchain engagement models. Having a coalesced view of supply chain processes will allow Watson Supply Chain the ability to offer solutions that give advance warning of potential supply chain execution issues, identify supplier trends requiring improvement and more. Further, it will provide interoperability with other Blockchain applications, allowing customers to participate and leverage a variety of Blockchain solutions.

## Learn more

For further information, visit the IBM Watson Supply Chain and IBM Blockchain web pages.

To learn more about how blockchain and cognitive technologies are changing business networks and supply chains, download The Power of Cognitive Technology to Transform Your Business Network.

ZZO12537USEN-01

**Watson
Customer
Engagement**