



# **Building a Smarter Supply Chain**

**The power of AI and Blockchain  
to drive greater supply chain visibility  
and mitigate disruptions**

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The global, digital economy is radically reinventing business. For leaders across industries, it's not just the pace of business that's changed – it's everything from customer expectations to competitive landscapes.

**87 percent of CSCOs say it is extremely difficult to predict and manage disruptions**

According to IDC, 33 percent of all manufacturing and retail companies will be disrupted by digitally-enabled competitors within the next three years.<sup>1</sup>

Today more than ever, businesses must evolve to stay competitive. Savvy leaders are looking to their supply chains to do the heavy lifting, driving differentiation that impacts quality, delivery, costs, customer satisfaction and more.

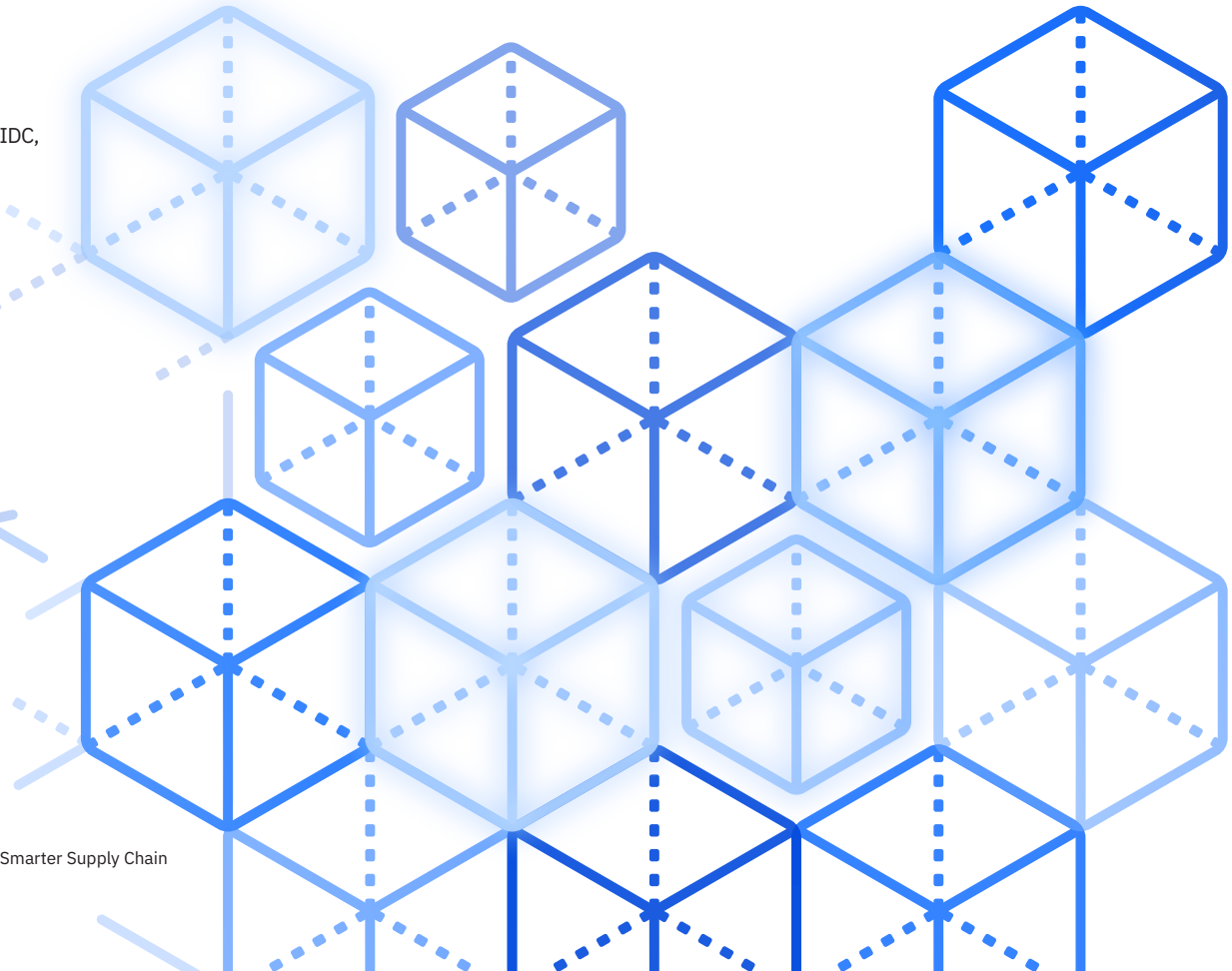
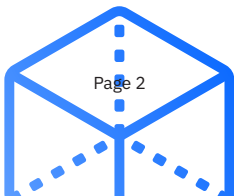
**CSCOs cite a lack of visibility as the key hurdle in mitigating disruptions:**

**In fact, 84 percent of CSCOs cite lack of visibility as their biggest challenge**

Yet, most businesses are operating with supply chain systems built in a different era. They struggle to make sense of an overwhelming amount of data scattered across different processes, internal and external sources, and siloed systems. They struggle with visibility, and with connecting and exchanging critical information across an increasingly complex ecosystem of partners and suppliers.

Less than 10% of today's supply chain data is effectively used, and most companies are virtually blind to the 80% of data that is dark or unstructured. With these limitations, it is difficult to optimize supply chain operations – and the business is exposed to unnecessary disruptions, delays and risks, as well as increased costs.

1. The Thinking Supply Chain, IDC, March 2017



# A New Era of Supply Chain Visibility

“**AI and blockchain** are transformative technologies which promise to change the way businesses and industries operate, particularly in their management of supply chain and ability to adapt based on demand.”

— *Jeanette Barlow, Vice President, Offering Management & Strategy, IBM Sterling*

We stand at a significant inflection point in terms of disruptive technologies. AI, Blockchain, the Cloud, Digital Business Networks and IoT hold incredible potential to radically transform business and the supply chain.

For example, AI can rapidly and comprehensively read, understand and correlate data at incredible scale and speed. It's a game-changer in capturing and understanding all the data available to your enterprise – and then cutting through the data “noise” to provide real-time analysis and actionable insights. With AI, you can expand the universe of valuable data sources available to your enterprise, and increase the usefulness of that data.

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**By the end of 2020, one-third of all manufacturing supply chains will be using analytics-driven cognitive capabilities, thus increasing cost efficiency by 10% and service performance by 5%**

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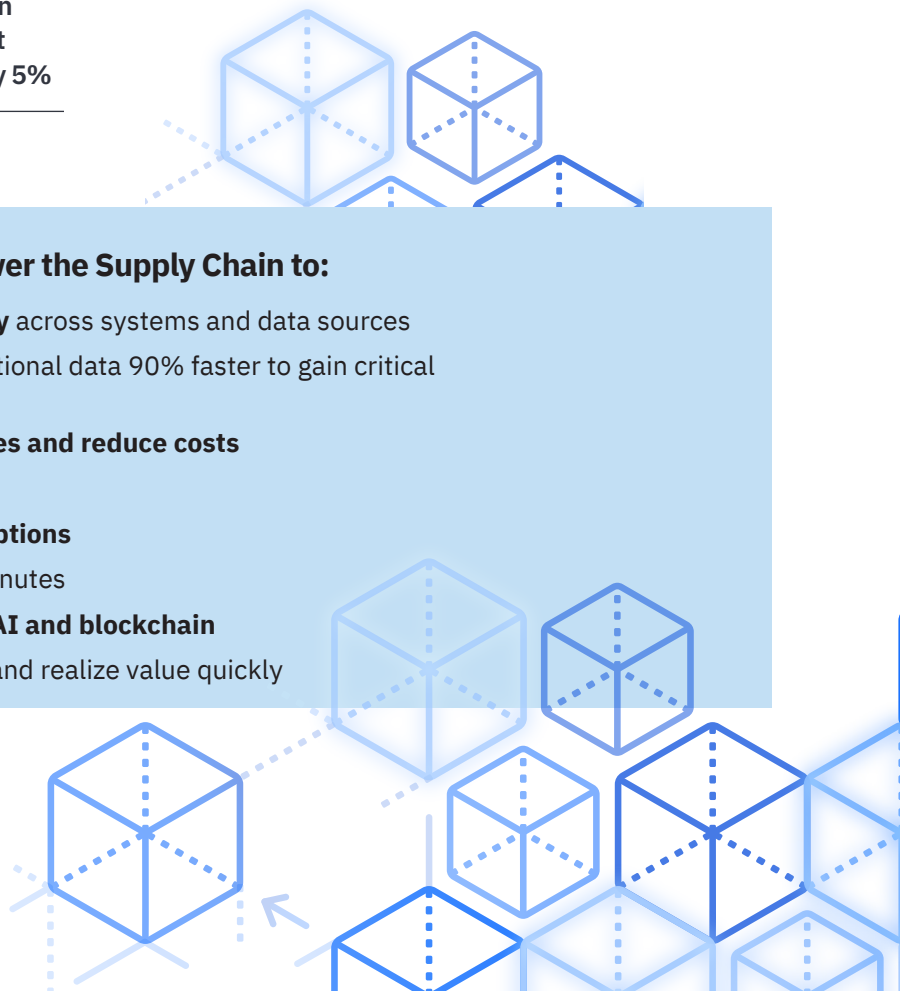
**By 2021, one-third of manufacturers and retailers will be tracking goods using blockchain - IDC**

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Blockchain is ideally suited to large networks of disparate business partners. By providing a single version of the truth through a shared ledger, blockchain increases trust and efficiencies across the network, which is crucial in eliminating and resolving disruptions and disputes. With blockchain, transaction records are immutable (or tamperproof) and secure, agreed upon by all parties and easily referenceable. It also creates a shared audit trail for use by everyone in the partner ecosystem.

## Together, AI and Blockchain, Empower the Supply Chain to:

- o Gain **end-to-end supply chain visibility** across systems and data sources
- o Retrieve and correlate relevant transactional data 90% faster to gain critical insights
- o Improve **collaboration, gain efficiencies and reduce costs**
- o Reduce time to value by at least 85%
- o Proactively **predict and mitigate disruptions**
- o Reduce mitigation time from days to minutes
- o Plan and **architect for the future** with **AI and blockchain**
- o Build on top of current IT investments and realize value quickly



## Foundations for Building a Smarter Supply Chain

A smarter supply chain, powered by AI and blockchain, provides **greater visibility and insights** into the end-to-end supply chain – including the transactional lifecycle and partner ecosystem. It leverages the power of AI to connect and correlate data from disperse and disparate systems and sources, and sorts through data overload to provide new insights and relevant alerts. It complements and elevates existing systems and investments.

AI can also help you **proactively predict, assess and mitigate disruptions and risks**. A smarter supply chain that leverages this technology builds significantly more resiliency and responsiveness.

Leading companies are learning firsthand how these disruptive technologies enable improved efficiency and reduced costs. They represent a new era of supply chain management, complementing and elevating existing solutions across planning, sourcing, inventory, fulfillment, logistics and supply assurance.

When you combine AI and blockchain, the impact is exponential. Supply chain solutions can embed these technologies in meaningful ways, such as to drive improved insights and usability of the vast data affecting supply chain organizations. From correlation and anomaly detection in business transactions, to gaining insights by tapping into internal and external data sources, with these technologies organizations can proactively get ahead of events. When AI and blockchain are combined they can enable a powerful platform that provides both a source of shared, immutable data for suppliers and partners – with the capability to immediately identify trading partner behaviors and events.

The companies referenced [below] in these case studies are all early leaders in implementing AI and blockchain. All of them sought to be the disruptor in their industry, rather than be disrupted. They each were able to build, with the help of IBM, capabilities leveraging their existing systems and applications to drive immediate value in specific use cases prioritized by the business.

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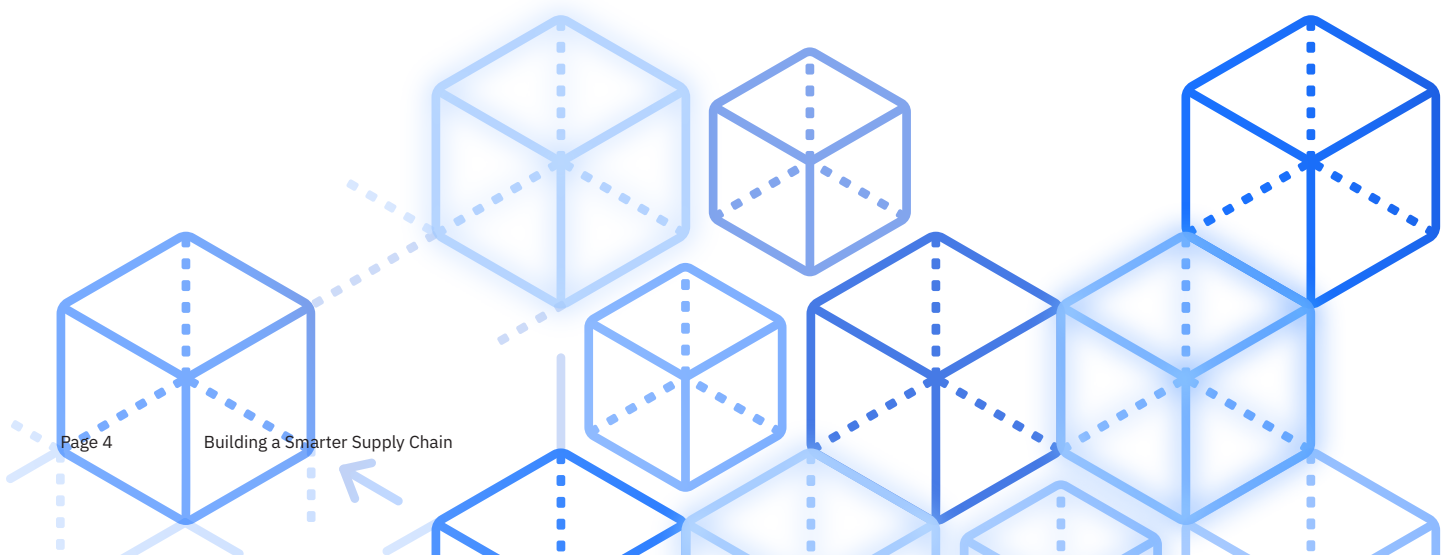
### Gain End-to-End Visibility

- Illuminate the 80% of data that is dark and unstructured
- Quickly correlate and understand data from across disparate systems
- Sort through data overload and gain new insights
- Establish shared visibility with partners and key suppliers

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### Mitigate Disruptions and Risks

- Proactively predict, assess and mitigate disruptions and risks
- Reduce disruption mitigation time and related costs
- Retain knowledge and best practices for future reference
- Help cut disruptions in half with AI-enabled smart-alerts and predictive capabilities





## *Fortune 500 Company Leverages AI for Greater Visibility, Improved Order Management*

A leading industrial automation company lacked visibility into its end-to-end supply chain – and specifically into inbound supply deliveries and delays. This made it difficult to effectively manage complex outbound orders and meet customer shipping and bundling preferences. The company capitalized on AI to provide a connected view across their supply chain and gain greater visibility into multi-component orders. IBM’s AI solution helped the company effectively manage data overload, providing alerts for late-deliveries affecting any component in a bundled order. In a short time, the company quickly trained the AI solution to assess order status and financial risk, so issues could be prioritized and resolved before they impacted customer delivery. They also used AI to sort through unstructured data from external news and social media feeds to get a better understanding of market and supply changes that could lead to delays. The result? Clear visibility to manage complex customer orders and significantly improved order delivery and quality.

“What you just saw AI do in seconds typically takes me hours for each query ... huge time savings opportunity.”

Data Analytics Leader, Fortune 500 Industrial Automation Company

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## *Blockchain Drives Big Pharma Company’s Collaboration with Partners*

A global pharmaceutical company had limited visibility across their partner ecosystem, which led to inefficiencies in meeting customer demand. They interacted and worked with at least 20 intermediaries to obtain and transport supplies and products to meet customer demand. Even though blockchain is in its infancy, the company began exploring how to apply the technology to keep trading partners on the same page and drive collaboration. They established a shared ledger for all permissioned trading partners to provide access to transactional data in real time. They also plan to leverage IoT-based shipment tracking data to allow partners to monitor the location and condition of shipments. With a blockchain network, the pharmaceutical company and its trading partners can establish a shared, single version of the truth – from order inception through final delivery. The company expects this to improve collaboration and eliminate blind spots, uncertainty and inefficiencies across their partner network and supply chain.



## *Master Lock Unlocks Business Transaction Intelligence with AI*

Master Lock, a company that develops and manufactures security products, wanted to provide its internal business users with self-service access to real-time data about transactions to better support customers, suppliers and finance projects. The company partnered with IBM to implement an AI-powered, Business Transaction Intelligence solution combined with their IBM Sterling Supply Chain Business Network. Ultimately, Master Lock not only achieved the expected results of enabling users to more easily find and track business transactions, they were also able to quickly identify and rectify inefficiencies in technical EDI processing with partners.

“Business Transaction Intelligence will allow our Customer Service and Finance teams to easily track an order from inception to cash. It will allow them to perform their duties in a much more efficient manner.”

– Connie Rekau, EDI Manager, The Master Lock Company

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## *Lenovo Leverages AI and Blockchain for Supply Chain Transformation*

Lenovo, a global technology and manufacturing leader, wanted to establish greater visibility across systems and data sources to minimize disruptions and improve customer order management. They wanted to use AI to connect disparate sources of data and gain greater insights into top customers – and to correlate data from other systems with their order management systems to improve delivery and customer satisfaction. In just six weeks, IBM demonstrated a proof of concept for AI application using their own data – and started down the road to greater visibility and reducing disruptions.

“IBM Supply Chain Insights helps organizations leverage the power of Artificial Intelligence to gain greater visibility and predictive insights across the supply chain. Ultimately, that visibility and insight can help drive action, efficiency and incremental revenue.”

– Bobby Bernard, Global Procurement and Supply Chain Executive, Lenovo



## *Automotive Manufacturer Focuses on Cost Reductions*

A major automotive manufacturer wanted to reduce inventory costs caused by high safety stock levels. To achieve their goal, they needed greater data accuracy and better insight into what's happening during transport. By leveraging AI and IoT data in shipping containers, they can now predict late arrivals based on route performance, trends, carrier performance, and weather. They also used AI to effectively manage data overload and generate smart alerts based on sensitivity thresholds. With AI, they optimized inventory down to the shipping container level, realized faster resolution of events impacting time delivery of parts, improved prediction of delays, and significantly reduced need for safety stocks.

“We are spending hundreds of millions on unnecessary inventory and see AI as the best path to generate the insights to create a seamless process to eliminate waste.”

Senior Supply Chain Executive, Major Automotive Manufacturer

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## **IBM Sterling Supply Chain Solutions to Drive Visibility and Manage Disruption**

Our solutions leverage the power of AI and blockchain to help organizations architect for the future and build a smarter supply chain that's more resilient, agile and customer-centric.

### **IBM Sterling Supply Chain Insights with Watson**

IBM Sterling Supply Chain Insights with Watson (SCI) leverages AI that learns and understands supply chain to provide monitoring, visibility and insights across your supply chain. With SCI, organizations can be proactively alerted to, and better assess and mitigate, disruptions and risks.

SCI Operations Center with Smart Alerts proactively monitors and governs operations with speed and agility – and provides configurable alerts to cut through data overload and predict potential disruptions. SCI Resolution Rooms with Ask Watson recommends the right team members to help resolve specific

disruptions, and then provides that team with the relevant information, updates and insights needed to mitigate the event. Digital Playbooks are an organized body of knowledge and best practices built over time based on your past activity curated by Watson. This knowledge base will help you tackle recurring supply chain challenges with greater efficiency.

### **Sterling Supply Chain Business Network**

Streamline collaboration across your supply chain and deliver AI-powered B2B transaction visibility to business users with IBM Sterling Supply Chain Business Network (SCBN). A single, cloud-based, digital business network, SCBN enhances collaboration with your customers, suppliers and trading partners by digitizing and automating B2B transactions, while accommodating specific business requirements, government regulations and technical capabilities.

SCBN provides business users with the insights needed to make faster and more informed decisions by leveraging AI to deliver deep search and visibility into B2B transaction life-cycles, visualize the entire life-cycle of a transaction in real-time and in context, or drill down to see the granular detail of specific documents.

### **IBM Sterling Delivery Transaction Intelligence**

IBM Sterling Delivery Transaction Intelligence is a portfolio of applications that brings blockchain to the Sterling Supply Chain Business Network. Sterling Delivery Transaction Intelligence gives you a single record of truth, complete with transparent immutability, data rights, an audit trail, permission and privacy, and a security-rich environment.

Sterling Delivery Transaction Intelligence ensures that all the participants in supply chain processes stay informed and connected on events and changes in business transactions from order to delivery without compromising security or confidentiality. With a single, shared view of events, partners can quickly and easily resolve issues and potential disputes.



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