CSCMP hottopics

Transforming business ecosystems with blockchain

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BLOCKCHAIN CAN BUILD UNPRECEDENTED SUPPLY CHAIN VISIBILITY AND EFFICIENCY

Supply chains today are increasingly complex and subject to unforeseen disruptions and growing costs. Visibility is limited as goods move from the supplier's supplier to the customer's customer, and transactions are often still paper based.

Blockchain is uniquely suited to address collaboration, data sharing, and visibility across a supply chain ecosystem. It works by connecting vetted and approved participants to a shared, distributed ledger that provides a single source of truth about goods as they travel across the supply chain.

78% of companies surveyed say that increased visibility into end-to-end product movement is a major benefit of blockchain

Participants add their data and supporting documents, like certifications, to the ledger. Once added to a blockchain ledger, data cannot be manipulated, changed or deleted. It is protected with the highest level of commercially-available, tamper-resistant encryption. Blockchain also allows participants to access the same information at the same time to improve efficiency, build trust and remove friction. These properties make blockchain a trusted platform for sharing data across different companies while helping prevent fraud.

A private, permissioned blockchain allows companies to decide who to share data with and what their partners are permissioned to see based on their role in the supply chain ecosystem. Additionally, these types of blockchain networks offer the scale and speed to handle millions of transactions. This allows for near real-time insights that enable greater resilience and agility.

As more business partners join the blockchain platform, they build unprecedented visibility and connectivity across the supply chain, enabling new business models and drivers of value. In virtually any industry, blockchain can improve the supply chain by providing a trusted and controlled way to share data for near real-time visibility.

With blockchain, supply chains can do things that before were either not possible or very difficult. For example, with blockchain, companies can:

- **Track the physical flow of goods from end-to-end**
  Traditionally, supply chains track perpetual inventory which is derived from documentation. Tracking the actual physical inventory is not only more accurate, but also introduces unprecedented speed to insights.

- **Combine data on flow of goods & financial transactions**
  Typically records on the flow of goods are separate from the records on the flow of financial transactions. Stitching these together opens new and more efficient methods for payments, invoicing and dispute resolution.

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• **Automate processes across companies**
While automation within individual companies is gaining traction, automation that spans across companies is new ground. Automating intra-company processes creates next-generation supply chain efficiency, responsiveness and agility.

BLOCKCHAIN IS ADDRESSING DEEP-ROOTED BUSINESS PAIN POINTS ACROSS INDUSTRIES

Companies in various industries are implementing blockchain to help resolve challenges innate to their operations. A few industries where the technology is quickly gaining momentum include consumer goods, manufacturing, and pharmaceuticals.

CONSUMER GOODS

Industry challenges:

• **Fast-moving and volatile demand**
The speed and unpredictability of consumption make timely and accurate demand signals essential.

• **Brand differentiation**
Steep competition and rising consumer expectations mean brands must stand out and engage consumers.

• **Complex last mile distribution**
This makes the "cost to serve" a key metric to optimize with business process automation.

Blockchain use cases:

• Consumer engagement
• Provenance tracking
• Freshness management
• Diversion tracking
• Inventory optimization
• Product authentication

MANUFACTURING

Industry challenges:

• **Global, diversified supply chain**
Multi-plant sourcing from around the world raises both complexity and supply chain management costs.

• **Greater variety and shorter lead time**
Customers want faster and more unique fulfillments, made more challenging by fluctuating demand.

• **Quality and product recalls**
Social media and online consumer reviews make quality and avoiding recalls more important than ever.

Use cases:

• Environmental regulation
• Compliance
• Reusable asset management

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- Lot lineage and provenance
- Counterfeit and fraud detection
- Reduction prevention
- Quality control

PHARMACEUTICALS

Industry challenges:

- **Supply chain integrity**
  Damage, contamination and temperature control can affect quality.

- **Supply disruptions**
  Theft, fraud and integrity issues can cause gaps in pharmaceutical supply.

- **Regulation**
  Regulation creates additional requirements and costs around compliance.

Use cases:

- Drug tracking
- Fraud detection
- Cold chain monitoring
- Provenance authentication
- Transaction settlements
- Chargeback reconciliation

Businesses in these industries and others that have transformed their supply chain with blockchain are creating value in a variety of ways, including:

- **Driving buyer engagement to grow the market**
  Engage and empower buyers in new ways and build trust in your brand by showing how a product was made and demonstrating support for ethical and sustainable production.

- **Transforming business models to optimize revenue**
  Leverage supply chain visibility to improve predictions and forecasting with real-time data and optimize inventory dynamically. Use smart contracts to automate responsiveness up and down the chain.

- **Reducing supply chain complexity, errors and cost**
  Combine blockchain, IoT and AI to automate digitization of supply chain data, handle dispute resolution proactively and share digital documents across companies.

Today, supply chains are playing an increasingly central role in the creation of competitive and disruptive business strategies. Blockchain offers unique opportunities for supply chain reinvention that transforms entire business ecosystems. Leveraging the trust and transparency of blockchain, supply chain partners are collaborating in unprecedented ways to grow the market, build new revenue streams, and automate across companies. The result is supply systems that are faster, more nimble, and more responsive to ever-shifting demand.

Learn how companies from a range of sectors are reimagining their supply chains and business models with IBM Blockchain Transparent Supply.

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