IBM Blockchain **Transparent Supply**

Solution Brief

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What is IBM Blockchain Transparent Supply?

Supply chains today are increasingly complex and fragile, 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.

In virtually any industry, blockchain can transform the supply chain by providing a trusted and controlled way to share data for near real-time visibility. IBM Blockchain Transparent Supply allows companies to build their own blockchain-enabled collaboration and data-sharing ecosystem with their supply chain partners–to the benefit of all.

With Transparent Supply, visionary companies are putting blockchain to work on the most challenging problems facing their business, industry and even the world.

What makes us different from, and complementary to, other supply chain solutions? The platform enables goods-specific transparency across multiple supply chain partners, enabling analytics by company, location, product movement and condition.

With Transparent Supply, you decide on the use case, build the business model, convene the network and craft the rules of engagement. We'll provide the technology and help you build and run it securely and at scale.

78%

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

37%

of companies surveyed have a blockchain solution in development, pilot or production

Source: APQC and Supply Chain Management Review
www.scmr.com/article/infographic_current_state_of_blockchain_adoption_in_2020

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Build a better supply chain

Blockchain for business is ideally 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.

Participants add their data and supporting documents like certifications to the ledger and control who is allowed to see what. Once added to the ledger, data cannot be manipulated, changed or deleted. These properties make blockchain a trusted platform for sharing data across different companies while helping prevent fraud. Participants can track materials and products from source to end customer and, ultimately, the consumer.

When companies upload their data to the blockchain, they decide who to share it with and what each permissioned party can see.

All data is stored on blockchain ledgers, protected with the highest level of commercially-available, tamper-resistant encryption. Blockchain allows participants to access the same information at the same time to improve efficiency, build trust and remove friction. A private, permissioned blockchain like Transparent Supply offers 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.

With blockchain, you can:

- Track the physical flow of goods across companies for new speed to insight
- Combine data that is typically siloed to leverage new business drivers
- Automate processes across companies to reach next-generation supply chain efficiency

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Create new value with Transparent Supply

You can unleash the full power of data and end-to-end visibility to empower all supply chain participants and create new business value.

- **Drive buyer engagement to grow your 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.

- **Transform your business model 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.

- **Reduce 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.
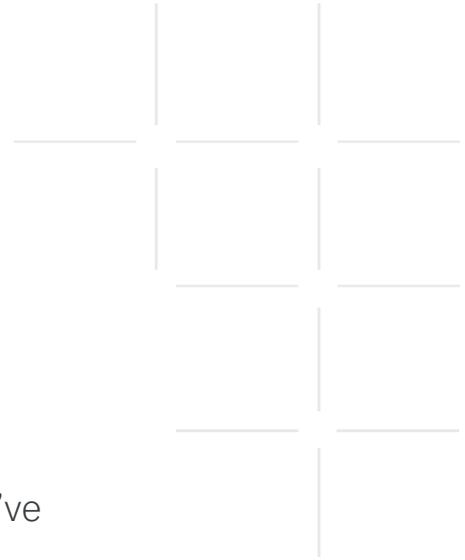
4 billion

salable units enter the drug supply chain every year in the US, translating into 33-55 million supply chain transactions a day

Source: Harvard Business Review *hbr.org/2020/05/building-a-transparent-supply-chain*

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Explore industry scenarios

With Transparent Supply, you can meet the supply chain challenges of your industry while satisfying consumer demand for transparency and accountability. To showcase these capabilities, we've highlighted use cases in three different sectors.

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.

Use cases

- Consumer engagement

- Provenance tracking

- Freshness management

- Diversion tracking

- Inventory optimization

- Product authentication

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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

- Lot lineage and provenance

- Counterfeit and fraud detection

- Reduction prevention and 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

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Customize your solution

Transparent Supply comes with a core set of modules, APIs, capabilities and services that allow you to build and customize your blockchain data-sharing platform. Add-on capabilities are available to extend business value. The solution itself can be white labeled so you can establish a unique brand and style for the ecosystem you are building.

Core modules

Core capabilities and services

Add-on components

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Core modules

Trace module
Trace the location and status of materials and products up- and downstream across your supply chain.

Documents module
Digitize, manage and share any certification or document with the supply chain partner of your choice.

Data module
Upload, download and view your company's data.

Data subscription module
Receive data packages for in-house analysis or input to your ERP and inventory control systems.

Core capabilities and services

Onboarding and membership management
Join the blockchain and provide your company information, view and change your module subscription, authorize users and assign roles.

White-label UI and product documentation
Apply your own branding to the user interface and documentation for your blockchain solution.

Technical support services
Receive IBM Level 2 and Level 3 support to resolve technical issues.

Advanced technology services
Leverage IBM services for technical education, planning and customization add-ons.

Add-on components

Consumer module
Connect end consumers with permissioned data about a product's origin or standard of quality during production via QR codes and a mobile app.

Insights module
Access real-time information about supply chain events and transactions to identify key business opportunities.

Custom smart contracts
Establish off-chain connections and use smart contracts to automate a business process, enabling it to execute when certain criteria—tracked on the blockchain—are met.

Custom apps and integration
Integrate custom capabilities or APIs developed for your ecosystem by your IT organization, IBM or a third-party partner.

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Why Transparent Supply?

Transparent Supply is an interoperable and flexible technology solution that keeps implementation costs low, avoids lock-in and ensures scalability.

Standards and data interoperability
Transparent Supply is committed to global standards, including GS1, to help ensure interoperability of data across supply chain participants. Data access and API capabilities provide interoperability with your existing databases, helping reduce infrastructure investment and enable business process integration.

Blockchain interoperability
IBM Blockchain is committed to maintaining interoperability with future blockchain solutions. What's more, federated identity capabilities allow organizations to join multiple Transparent Supply ecosystems with a single sign-on.
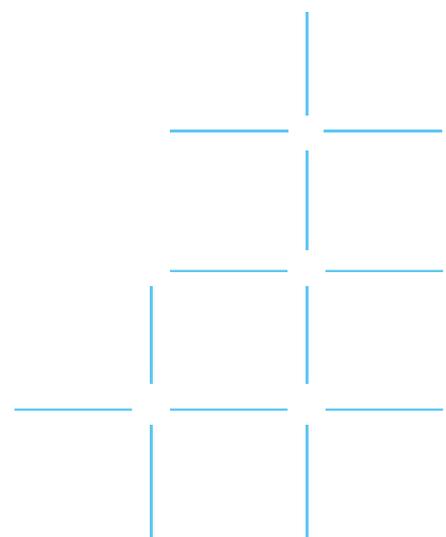
Security
Organizations rely on IBM Blockchain technology and our industry-leading hardware-based encryption for data residing in the cloud to provide consistent, reliable and secure access to data and insights.

Flexibility
Transparent Supply blockchain solutions can be deployed on any cloud, helping to prevent lock-in and provide flexible deployment options.

Scalability
Designed for business, Transparent Supply networks can process the many millions of transactions that take place daily across today's supply chains, providing near real-time views of what is happening.

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Build with us and build on our best practices

Our experience building IBM Food Trust and other supply chain networks on the Transparent Supply platform can help you as you build out your own viable and sustainable ecosystem. Learn from our best practices on convening partners and designing business and governance models that align value across the ecosystem.

Governance model

Organizations adopting the technology should be defining how it works for them and be comfortable using the solution. The governance model guides the use of the solution by defining policy around data ownership and usage, security and data integrity, platform membership, transactions, interoperability and more.

Ecosystem

The value created by a blockchain-enabled network grows with increased membership and participation, making it important for network leaders to strategically grow the ecosystem.

Business value

Successful blockchain platforms ensure that every network member benefits from participation. Achieving this requires aligning value and incentives across the ecosystem in a way that makes sense for its members. How it's done will vary from network to network, depending on industry pain points and business models.

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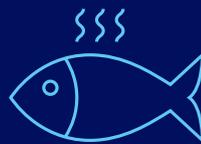
Networks built on Transparent Supply

IBM Food Trust

Over 200 companies in the food ecosystem are sharing data and tracing food's journey through the value chain.

Atea's Seafood Provenance Network

This blockchain network supports improved transparency, sustainability and food integrity for the seafood industry.

PharmaPortal

This industry-wide collaboration will ensure the safety and effectiveness of temperature-controlled drugs with end-to-end traceability across the cold chain.

Farmer Connect

Built for the coffee industry, this blockchain platform connects farmers to consumers and back, in a way that builds shared value and is transforming the industry.

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Our clients are visionaries who are putting blockchain to work on the most challenging problems facing their business, industry and even the world.

With Transparent Supply, you decide on the use case, build the business model, convene the network, and craft the rules of engagement. We'll provide the technology and help you build.

Whether you are looking to build a blockchain network for your ecosystem's unique challenges and opportunities, or whether you are looking to join a network that has launched, talk to us.

Book a free consultation at **www.ibm.com/blockchain/solutions/transparent-supply.**

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