Blockchain for Business – A Global Perspective

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IBM Blockchain
Problem …

… inefficient, expensive, vulnerable
Solution …

… A trusted, distributed, permissioned ledger
Blockchain for business …

Append-only distributed system of record shared across business network

Shared ledger

Shared business rules apply to transactions

Smart contract

Ensuring appropriate visibility; transactions are secure, authenticated & verifiable

Privacy

Participants are able to trust the contents of the ledger

Trust

… Broader participation, lower cost, increased efficiency
Blockchain benefits

**Saves time**
Transaction time from days to near instantaneous

**Removes cost**
Overheads and cost intermediaries

**Reduces risk**
Tampering, fraud & cyber crime

**Increases trust**
Through shared processes and recordkeeping
Blockchain@IBM – The 4 Pillars

**Technology**

- Linux Foundation
- Hyperledger Fabric
- Hyperledger Composer

**Platform Offerings - Hosting and Support**

- IBM Blockchain Platform
- IBM Bluemix
- docker

**Engagement Offerings - Making blockchain real for clients**

- Garages
- Engagement

**Solution Offerings – Improving existing workflows for clients**

- Global Trade Digitization
- Shared KYC
- Shared Ledgers

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APAC – Shared KYC
Know Your Customer (KYC) Pain Points – Corporate Clients Focus

KYC is a manual, expensive, repetitive, redundant and time consuming process for financial institutions.

**Financial Institution**

- **Expensive**
  - $60M-$350M in annual spend per bank
  - Avg of $600+ per KYC
  - Lost revenue opportunities

- **Time Consuming**
  - 5-100 documents per KYC
  - ~24 days to onboard a new client
  - KYC refresh takes ~20 days

- **Reputational & Regulatory Risk**
  - Risk of fines and potential regulatory shut down for non-compliance

**Corporate Clients**

- **Poor customer experience**
  - Data requirements for account opening
  - Long onboarding times (24 days+)

**Regulators / Auditors**

- **Lack of standardization**
- **Need for frequent audits**
  - Small events such as Director changes

Additionally, other ecosystem participants are challenged by the KYC process.

*Source: Thomson Reuters KYC Survey*
IBM Shared KYC Platform

The blockchain-based IBM Shared KYC Platform provides a secure, decentralized, and efficient mechanism for banks to collect, validate, store, share, and refresh trusted KYC information of customers.

- **Banks** can access reliable, validated customer information.
- **Customer experience** improves as corporates benefit from the harmonized standards for on-boarding and refreshes across banks.
- **Auditors** can use the Blockchain as the source of truth to verify CDD process performed by the banks.
Shared KYC on Blockchain Value Proposition

- **Customer Consent** driven Privacy through Secure Encryption
- **Standardized, Validated** information
- **Efficient** for banks to retrieve data and for customers to proactively update permissioned network
- **Flexibility** for accommodating additional requirements/regulatory regimes
- **Cheaper** – savings through network effect
- **Integrated** with current systems
- **A global solution to meet bank and corporate needs enabling economies of scale across markets for processes and technology**
IBM Differentiators as Platform Provider: *End-to-end Scalability*

- **End-to-end solution** with security, reliability and immutability of blockchain technology and cognitive analytics
- **Harmonized standards** with strong governance model
- Information vetted by **multiple validation agents** incl. signatories, government and third party data providers
- **Client Consent** Driven Model with **Double Blind Privacy**
- Immutable **audit trail** for all KYC checkpoints
- Neutral, trusted, **global provider** of technology and consulting with history of **enterprise scalability**
EMEA – Air Cargo
# Use Case – Air Cargo: Supply Chain Visibility & Workflow Digitization

<table>
<thead>
<tr>
<th>What</th>
<th>Documentation process being carried out in air cargo is manual and overly complex. No single participant in the supply chain has full visibility into the shipment life cycle. Information is exchanged bilaterally using non-standardized documentation. This causes longer transaction times, and potential for misaligned records even if the documents are transmitted digitally using EDI.</th>
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<tbody>
<tr>
<td>How</td>
<td>This Air Cargo Supply Chain Visibility Platform utilizes Blockchain technology to improve the end-to-end supply-chain process for air shipments, providing a secure and trusted way to exchange critical information in a digital format and to provide real-time information to all participants</td>
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</tbody>
</table>
| Who | - Airlines, Airports and Airport Authorities  
- Shippers & Freight Forwarders  
- Ground Transporters & Handlers  
- Authorities (Customers etc.) |

## Overall benefit
- Eliminate process/data redundancies and improve data quality and accuracy  
- Distributed solution removing need for point-to-point communication  
- Provide detailed and accurate visibility allowing for quick responses to supply chain incidents  
- Improved inventory management and planning  
- Better capacity planning, broader set of participants, and efficiency in the system  
- Early validation against regulatory and customs requirements  
- Avoidance of / faster dispute resolutions  
- Faster invoicing, settlement, and cash collection
Sharing a single trusted view of events & associated documents with Blockchain

Air Cargo Supply Chain Visibility

Trade Lane Information Pipeline

1. Create Purchase Order
2. Submit Export Documents
3. Submit Flight Documents
4. Record Cargo Pickup
5. Record Export Declaration
6. Submit LPO
7. Submit IGW
8. Submit EGM
9. Submit Flight Dept. Time
10. Record Flight Arrv. Time
11. Submit IGM
12. Submit IGW
13. Submit EGM
14. Record Flight Arrv. Time
15. Submit Bill of Entry
16. Submit Delivery Slip
17. Delivery Confirmation

Not exhaustive set of documents processed by the platform

Paperless Trade Blockchain Network

- Packing List
- AWB
- Export Declaration
- Customs Declaration
- Commercial Invoice
- Certificate of Origin
- Inspection Certificate
- ISF
- Phytosanitary Certificate
- Dangerous Goods Declaration
- Customs Clearance
- Container Arrival Notice
## Key Benefits Across the Supply Chain

<table>
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<tr>
<th>Hard Benefits</th>
<th>Soft Benefits</th>
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</table>
| **Exporter/Shipper** | • Tracking information and transparency  
• Proactive exception tracking  
• More efficient quote requests | • Increased connectivity  
• Improved visibility and logistics planning capabilities  
• Faster time to resolve disputes |
| **Freight Forwarder** | • Improved customer satisfaction  
• Potential increase in port volume due to faster container turnaround times | • Improved reporting  
• Faster time to resolve disputes  
• Opportunity to expand upstream |
| **Ground Handler** | • Improved load utilization  
• Reduced Processing Errors  
• Reduced handling and costs  
• Faster turnaround times  
• More effective multi-modal operations  
• Increased service quality  
• Increased headcount efficiency / productivity | • Better risk management  
• Improved throughput of legitimate trade  
• Facilitates Single-Window implementations  
• Tracking information and transparency  
• Improved reporting  
• Diversify supply chain with confidence  
• More efficient quote requests |
| **Air Cargo Carrier** | • Increased target selection  
• Maximize tax collections (true value of goods)  
• Reduced Delays in customs inspections  
• Early cargo validation / Improve acceptance speed | • Reduced Processing Errors  
• Increased booking options and promotions  
• Fewer Delays, Losses, Different Transport Costs  
• Reduced Delays  |
| **Customs Authority** | • Reduced Processing Errors  
• Reduced handling and costs  
• Faster turnaround times  
• More effective multi-modal operations  
• Increased service quality  
• Increased headcount efficiency / productivity | • Reduced Processing Errors  
• Improved target selection  
• Maximize tax collections (true value of goods)  
• Reduced Delays in customs inspections  
• Early cargo validation / Improve acceptance speed |
| **Importer/Consignee** | • Improved target selection  
• Maximize tax collections (true value of goods)  
• Reduced Delays in customs inspections  
• Early cargo validation / Improve acceptance speed | • Reduced Processing Errors  
• Increased booking options and promotions  
• Fewer Delays, Losses, Different Transport Costs  
• Reduced Delays  |
| **Consumer** | • Higher speed and reliability  
• Better end-to-end visibility | • Increased trust in air mode  
• Keep better track of where your good is |
North America/Global – Supply Chain Platform
IBM is positioned to help clients succeed in the Supply Chain Market

- Shared, immutable secure record of events with privacy as desired
- Trusted single source of the truth
- Assets and insights from developing supply chain pilots for Emirates, etc
- Smart contracts to enforce terms as needed

Frictionless trading partner connectivity
Industry’s 2nd largest business network with
Operations center for end to end supply chain visibility, analytics and smart alerts

Watson Supply Chain + IBM Blockchain + Watson IoT

= Enhanced Business Value

Connecting the digital and physical worlds
Enhanced shipment tracking

IBM Blockchain Services
Today’s supply chain: Delivering on the brand promise
Even “advanced” Supply chain interactions today have their challenges

Messages are point-to-point, one way communications

Each party has unique and limited visibility

Each party has their own version of the truth

Network documents only tell part of the story
**Without Blockchain**

- Messages are point to point, one way communications
- Each party has unique and limited visibility
- Each party has their own version of the truth

**With Blockchain**

- Selected messages are shared among all parties
- All permissioned parties have broader visibility
- Shared, singular, immutable version of events
What else can you achieve with an Enterprise Blockchain

Append-only distributed system of record shared across business network

Tamperproof transaction records (immutability)
Asset trail (provenance)

Shared ledger

Smart contract

Ensuring appropriate visibility for different participants even on the shared ledger

Trust

Privacy

Shared business rules apply to transactions

… Broader participation, lower cost, increased efficiency
Use Case 1: Pharmaceutical Cargo Transportation

**Business Challenges:**
- End to end shipment visibility and capacity planning, tracking lost and damaged goods, and solving invoice disputes for high value, perishable cargo

**Benefits:**
- Pin-pointing the source of loss/damage
- Shared visibility
- Invoice Dispute Resolution
- Greater insight and longer "heads-up" leads to better capacity planning and cargo handling
Use Case 2: Logistics company and CPG Shipment Visibility

Existing customers of IBM Supply Chain Business Network (SCBN)

Business Challenges:
• CPG requires shared version of shipment status and milestones
• Logistic company requires immutable record of shipment milestones to monitor their performance

Benefits:
• Leverages existing business networks and business rules
• Leverages existing data formats
• Quick onboarding of non-SCBN partner
• Share status with all parties in real time and eliminate disputes
Shared Ledger Project

Leverages existing systems & networks while quickly realizing benefits of blockchain.

Solutions

Applications

Platform

Integration

Digitization & Connectivity

Supply Chain Blockchain Platform

Integration Layer

Shared Ledger

Solution 1

Solution 2

Solution 3

App 1

App 2

App 3

App 4

App 5

App 6

Business Documents from SCBN

IoT Data

Documents posted using APIs
Questions