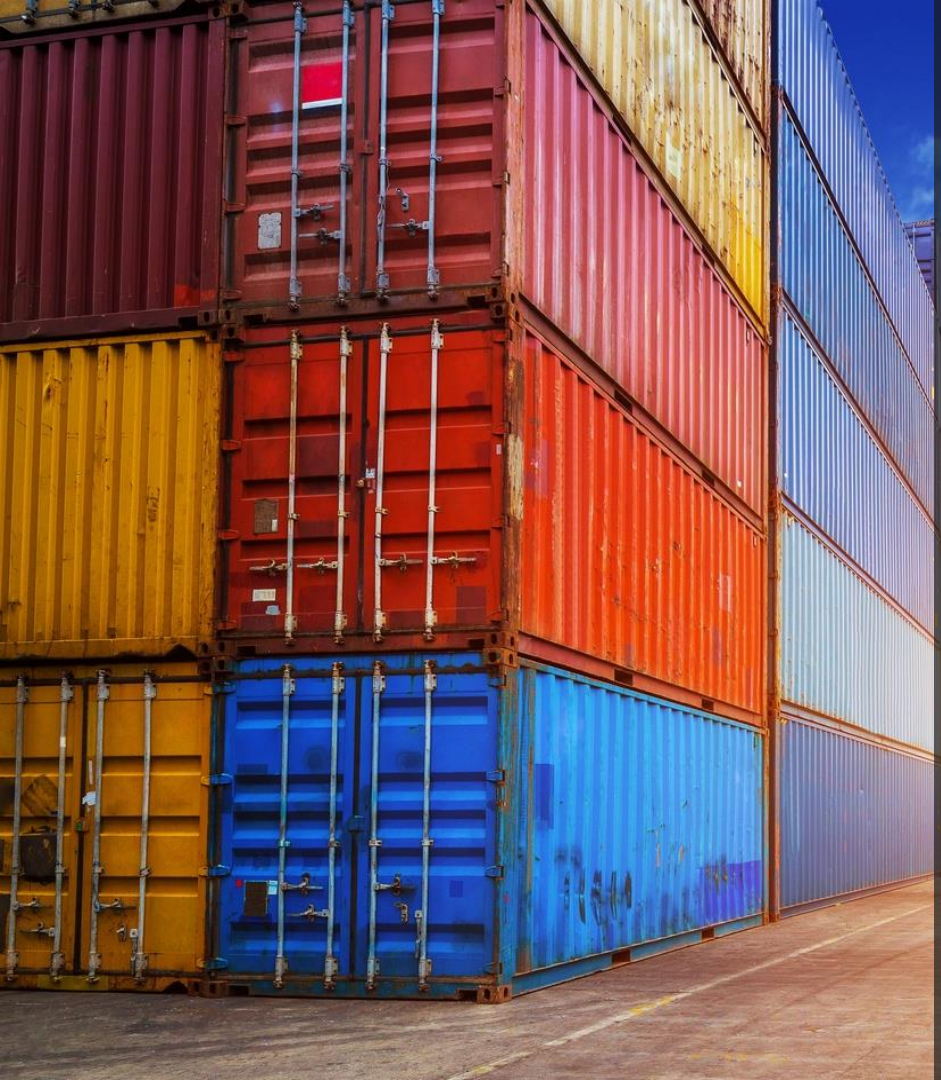

Blockchain :
Du buzz à la réalité, quels apports possibles pour la Supply Chain ?

Agora du Supply Chain Management

6 septembre 2018

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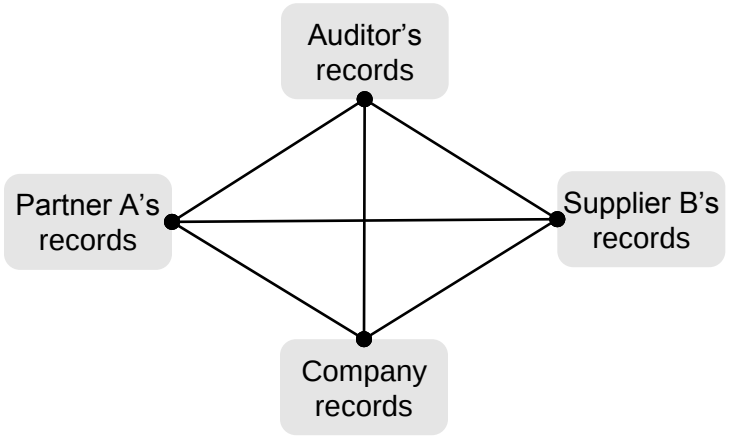
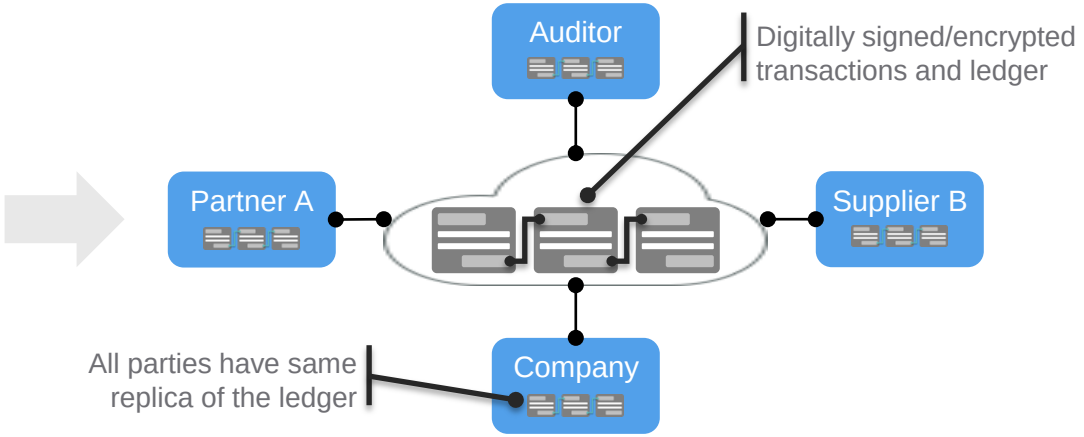
Pour s'assurer que nous parlons tous de la même chose…

Blockchain is a new platform for transaction services with the potential to radically transform multi-party business networks

*Enabling significantly **faster**, **less expensive**, **lower risk** transactions and **innovative new business models***



Inefficient, **expensive**, **potentially vulnerable**



Consensus, provenance, immutability, finality

Blockchain can be considered as the "single version of trust" for all the parties involved in a business network

Key Concepts and Benefits of Blockchain for Business

Append-only distributed system of record shared across business network

Shared Ledger

Privacy

Ensuring appropriate visibility; transactions are secure, authenticated & verifiable

Business terms embedded in transaction database & executed with transactions

Smart Contracts

Consensus

All parties agree to network verified transaction

Reduces Time

Transaction time from days to near instantaneous

Removes Cost

Overheads and cost intermediaries

Reduces Risk

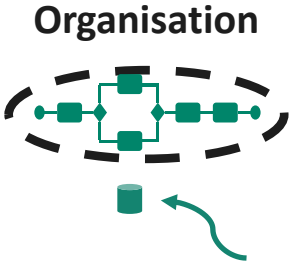
Tampering, fraud & cyber crime

Enables New Business Models

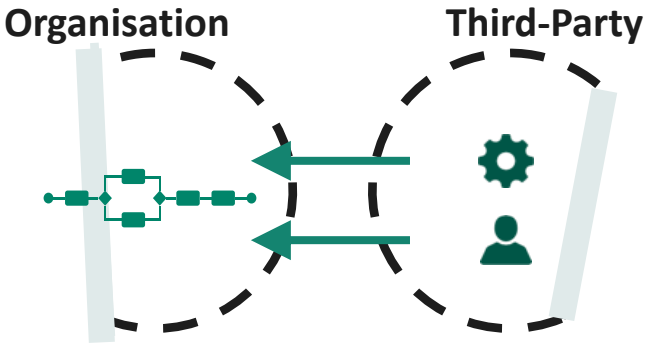
IoT Integration into supply chain

Business network interactions from a process perspective

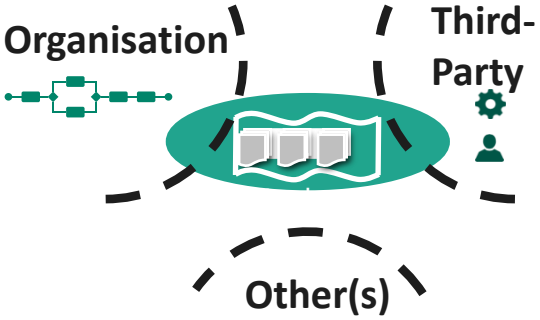
Private processes	Private process with external participants	Inter-organisation process



1. Centralised process automation platform
2. External interaction occurs through indirect channels

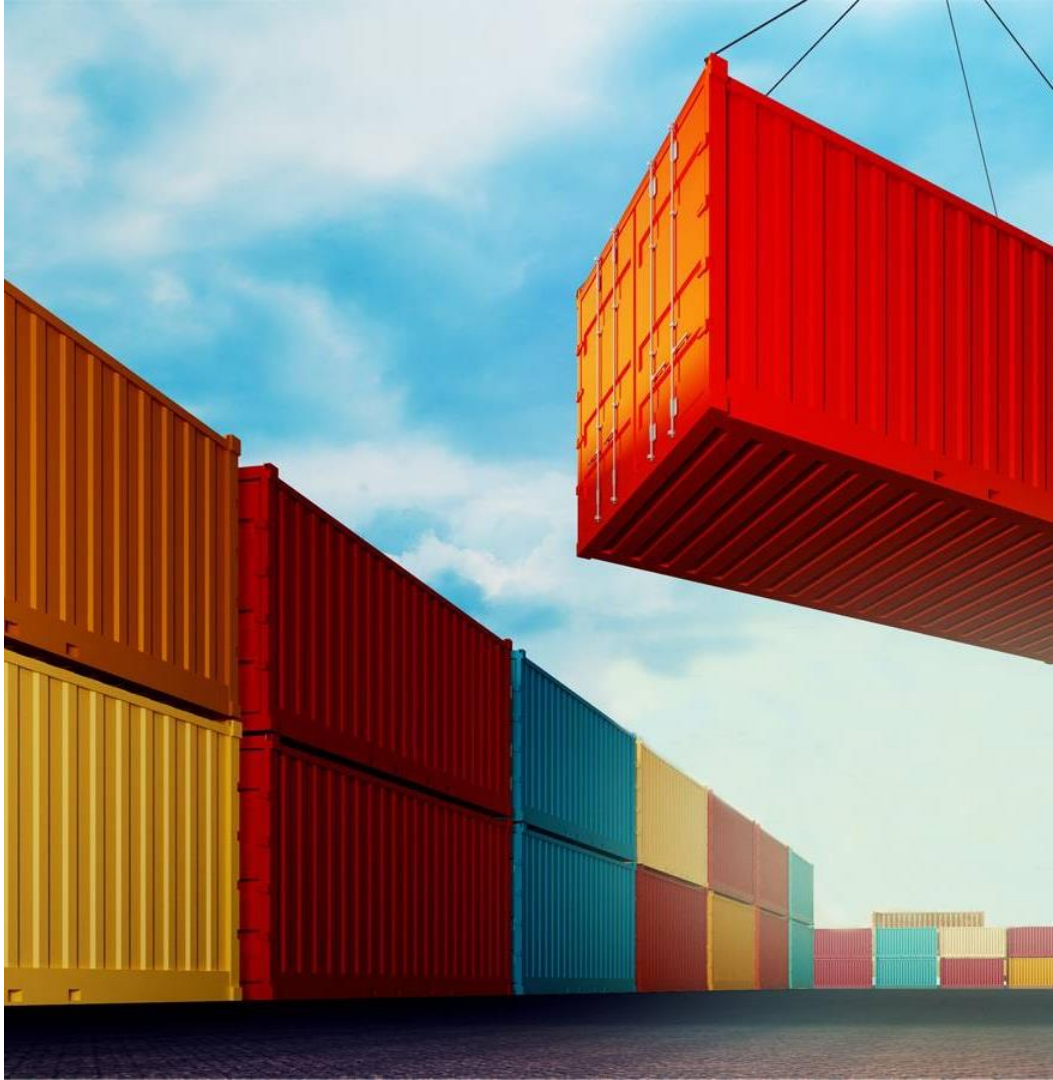


1. Centralised process automation platform
2. Direct external interaction occurs through agreed interfaces (API or Portal)



1. Process is coordinated across a decentralised network
2. Process conforms to agreed contract between network members that have a distributed ledger

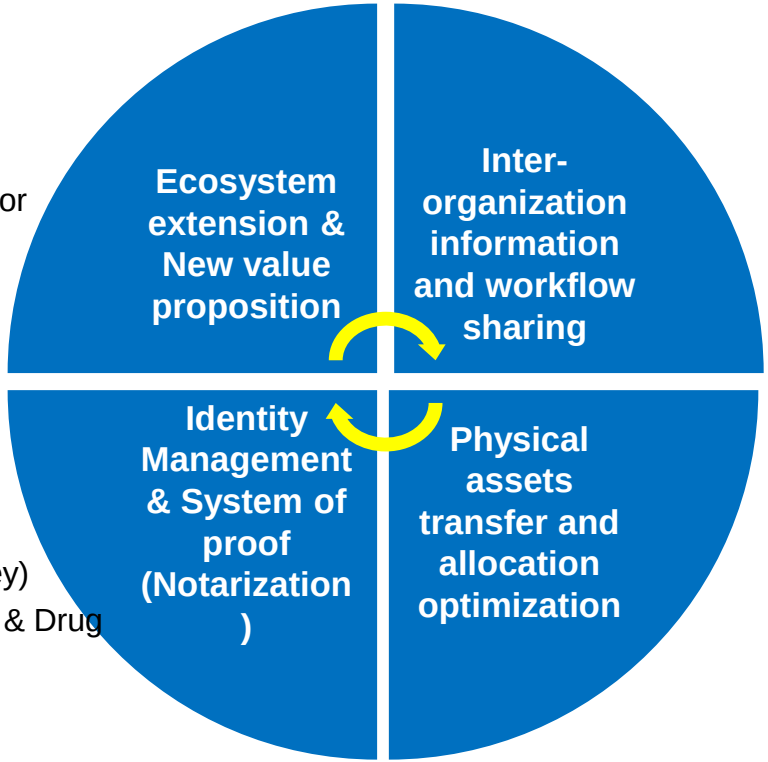
La blockchain
pour la Supply Chain
dans le monde réel



In a B2B or B2B2C environment,

most of the blockchain projects can be characterized according to 4 main categories

- Loyalty programs (Union Pay, French retailer)
- Creating new services or offerings (Multibrand e-wallet for electric car, Axa fizzy)
- Energy (SunChain)
- Vertical platform (Accounting)



- Global Trade Platform (Maersk, TradeLens)
- Billing & Disputes Management (IBM Global Financing)
- Trade Finance (we.trade, Batavia…)
- E-procurement

- KYC (Crédit Mutuel Arkéa)
- Diploma certification
- Banking Identities (SecureKey)
- Health data protection (Food & Drug Administration)

- Food Tracability (Walmart, Nestlé, Unilever, Carrefour…)
- High Value Item management (Everledger, De Beers)
- Supply Chain (Bosch, Airbus, Schneider Electric…)
- Logistics (DHL, Cloud Logistics, New York Shipping Exchange…)

Example 1 I ***Maersk: Global trade is hugely inefficient and burdened by paper-based processes***

A single shipment of avocados from Mombasa to Rotterdam **involves 30 actors, 100+ people, and 200 information exchanges**

Pilot shipments from Central Europe to the US resulted in containers being **delayed for 4 weeks** due to lack of transparency and delayed information exchange

A customer support agent for a freight forwarder may have to **make up to five calls to different parties** to answer a simple location question

KEY TAKEAWAYS

- **Data are siloed**
- **Business processes are manual and intensive**
- **Supply chain partners spend too much time chasing information**

The TradeLens Platform | *Digitizing the global supply chain*

Connects the ecosystem

Brings together all parties in the supply chain - including traders, freight forwarders, inland transportation, ports and terminals, ocean carriers, customs and other government authorities, and others - onto a Blockchain-based platform

Drives true information sharing

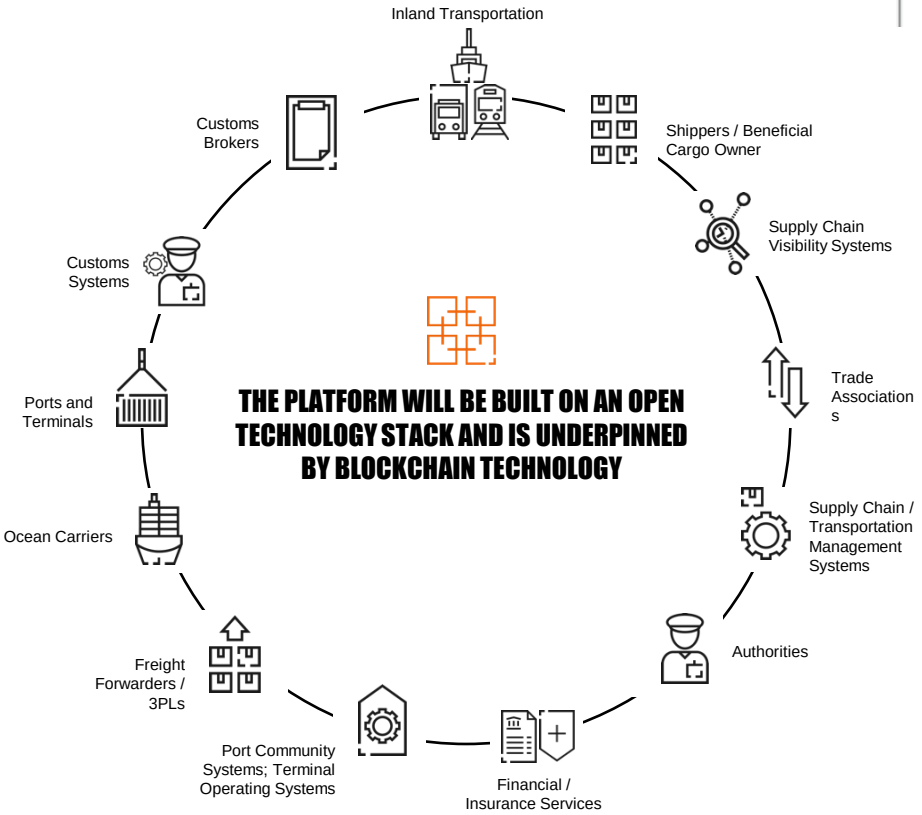
Provides for the seamless, secure sharing of real-time, actionable supply chain information across all parties to a trade - encompassing shipping milestones, cargo details, trade documents, the structured data embedded in trade documents, customs filings, sensor readings, and more

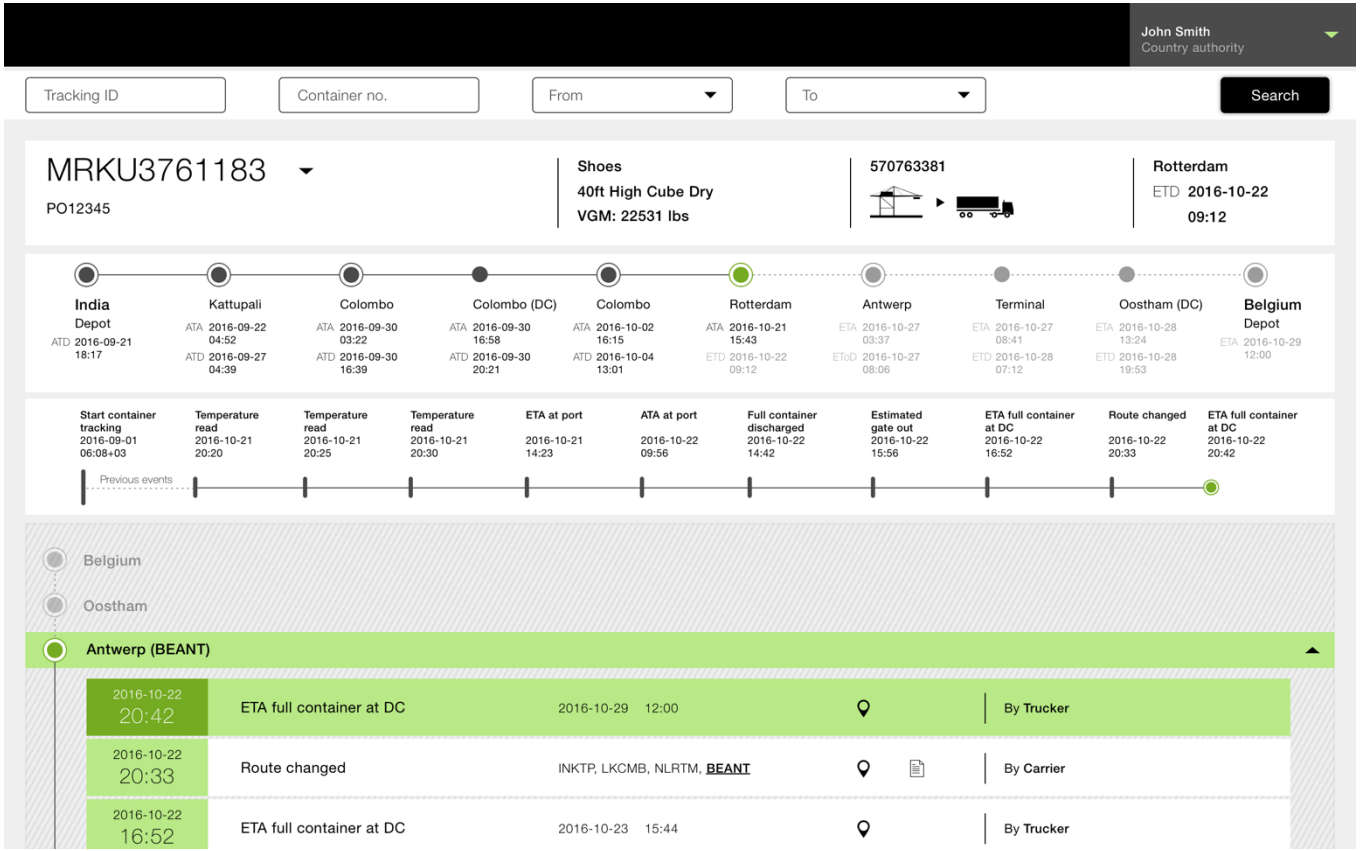
Fosters collaboration and trust

Enables the digitization and automation of the cross-organization business processes integral to global trade, including import and export clearance

Spurs innovation

Lays the foundation for ongoing improvement and innovation through an open, non-proprietary API, the use of standards and promotion of interoperability, and the launch of an Applications Marketplace



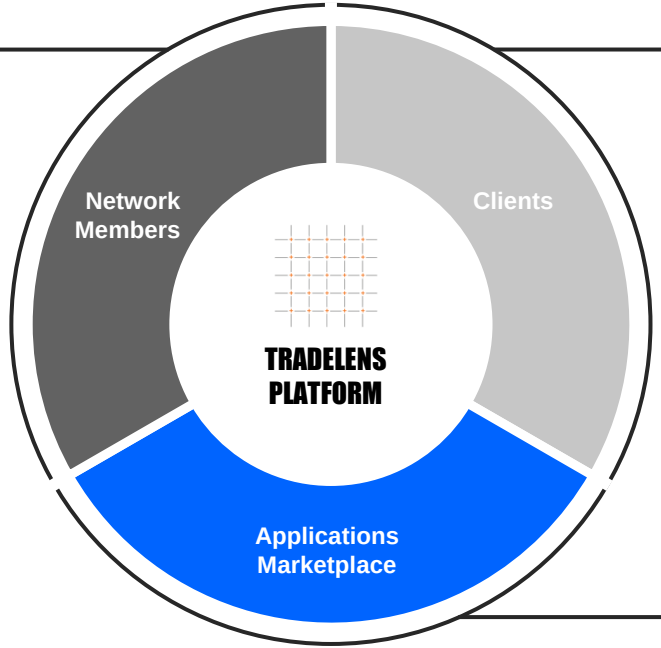


Real Time Access to Container Events

The TradeLens *ecosystem*

Provide and gain access to end-to-end supply chain information

- Ocean carriers
- Ports and terminals
- Government authorities
- Inland transportation
- 3rd party data providers



Primary consumers and beneficiaries of the platform

- Shippers (BCOs, retailers, manufacturers, etc.)
- Freight forwarders, customs brokers, 3PL
- Network Members
- Financial institutions

Offer value added services to the ecosystem through a platform marketplace

- TradeLens offerings
- Offerings from third party ISVs
- Offerings from Network Members and Clients

Example 2 I **Everledger: Legitimize Diamonds during the whole lifecycle and fighting fraud**

everledger

What?

- Track diamonds across supply chain from mine to retail

How?

- Shared ledger for storing digital certification with supporting material

Benefits

1. Protect against the occurrence of fraud, theft, trafficking and black markets
2. Assist in the identification and reduction of synthetic stones being labelled as authentic
3. Increase speed of transparency for cross border transactions for insurance companies, banks and claimants

Making the Blockchain Data available
to Compliance Rules through Smart Contracts

Rule → Smart Contract → Blockchain Data → Compliance Analytics

Example 3 I **Walmart, Nestlé, Unilever and others**

End-to-end Food Traceability from a consortium perspective

What?

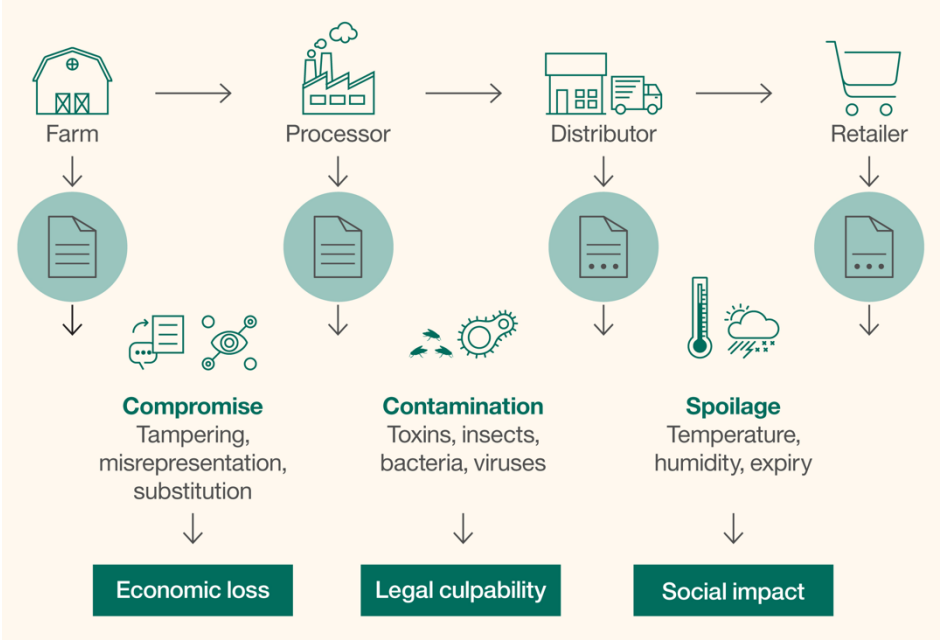
- Traceability of food from “producer to fork”

How?

- Blockchain holds history of food items processed through entire supply chain

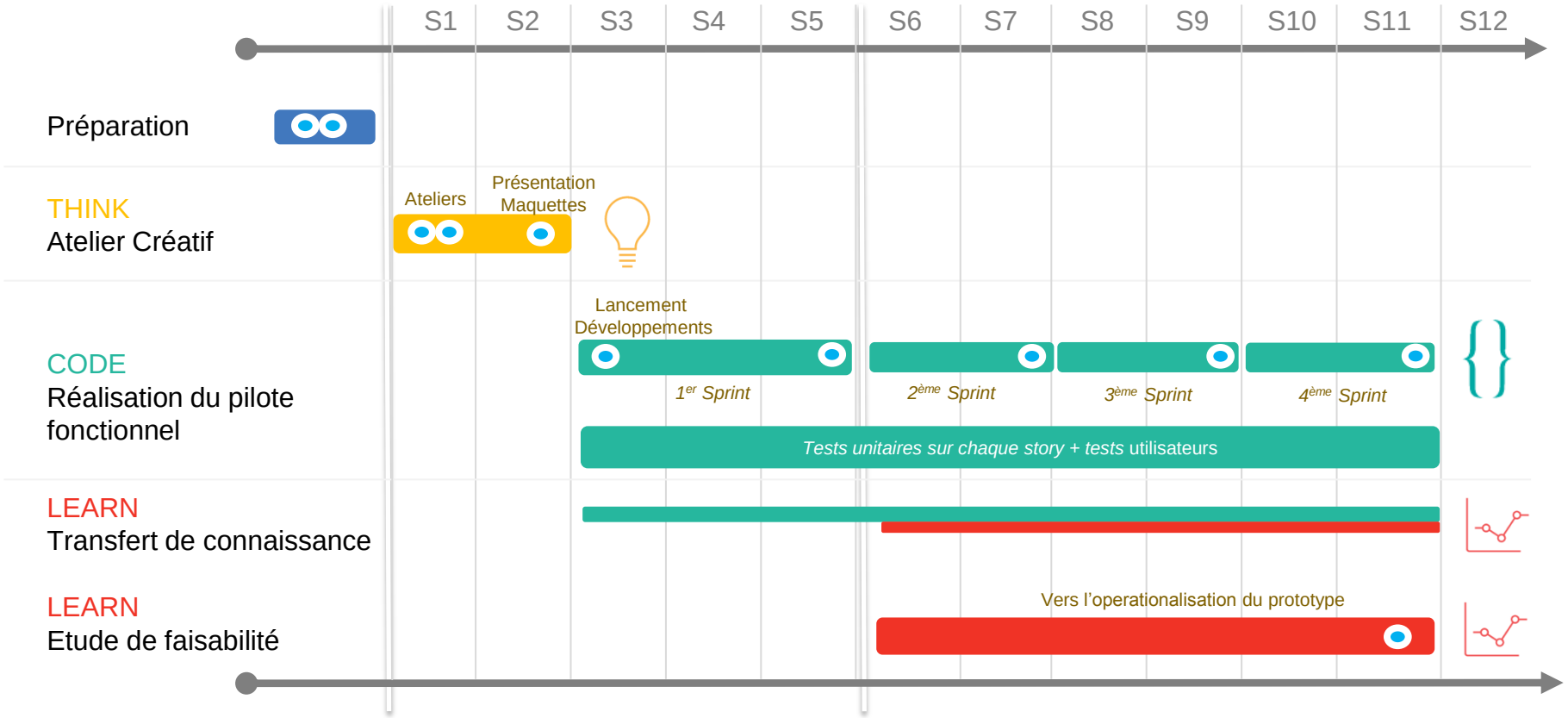
Benefits

1. Increased trust – multiplied by each participant in food supply chain
2. Pinpoint source of compromised food, reducing the unnecessarily broad recall
3. Improved co-ordination in food supply chain



Exemple d'un planning projet

POC réalisé au 2ème trimestre 2016 en France



Merci !

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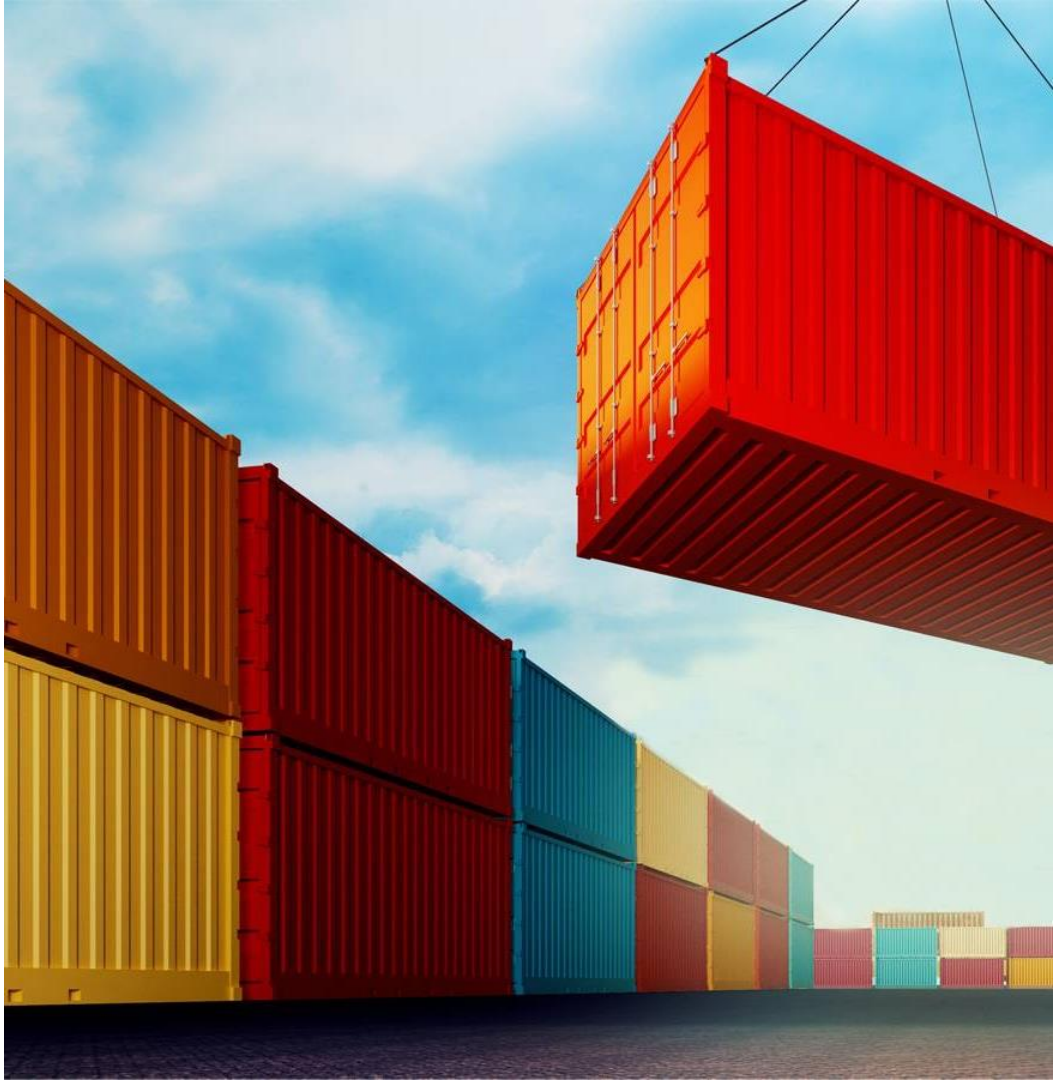
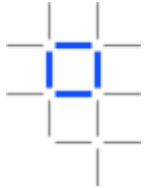


Industrial Blockchain I a Business Perspective



Private & Permissioned *(not public)*

- Private = known set of participants, known identity
- Permissioned = members need to fulfill criteria to join
- (Public = open set of participants, potentially unknown identity)

Appropriate Consensus

- Mechanism by which participants agree on state of shared ledger.
- Public needs heavyweight consensus for anonymous participants
- Known participants opens up other forms (e.g. participant bonds)

Privacy through Cryptography

- Transaction privacy
- Participant identity & trading privacy

Compliance & Audit

- Current spend can be vastly reduced
- Automated processes possible

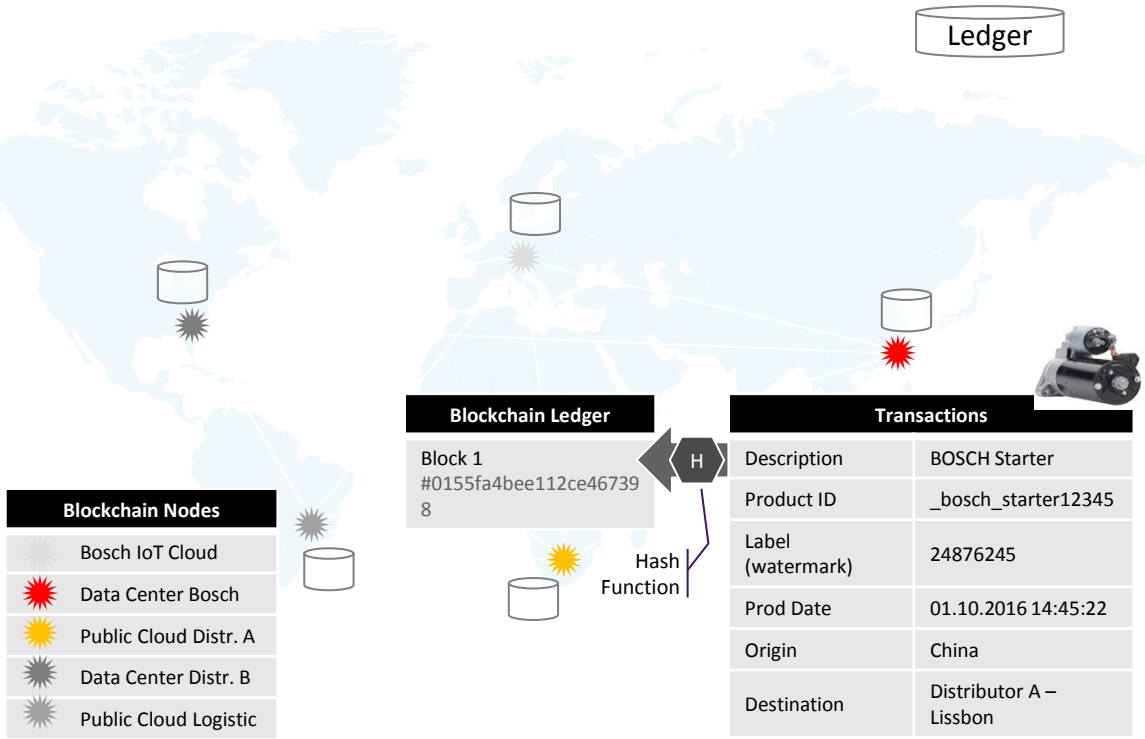
Example 2 I **Bosch: Fraud Detection in the Automotive Aftermarket**

Based on Linux Foundation's Hyperledger Fabric

- Open source and open standards-based
- Modular and scalable architecture
- Permissioned
- Performant
- Privacy & confidentiality assured

Advantages

- Transparency on product logistics
- Improved fake detection granularity
- Identification of gray market imports
- Potential cost savings
- Extensible to other business cases



Cognitive Blockchain: *Ingestion of just one 18 page pdf from The Kimberly Process showed 73 obligations have to be met in order to certify that a diamond is not a conflict diamond*

Example of a rule:

Any diamond from a participating country should have a Kimberly certificate