



Blockchain for the Food Industry: The Essential Primer

Speakers

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Mike Droke, Partner, Dorsey & Whitney, Moderator

Materials

Program PowerPoint Presentation

Food Risk Summit

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Your Experts

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Blockchain

The Problem

Image Omitted. Source: IBM Institute for Business Value analysis

The Promise

Image Omitted. Source: IBM Institute for Business Value analysis

| Network of Participants | Data – Movement and Verification | Speed and Trust |
|---|--|---|
| <ul style="list-style-type: none"> • Multiple Parties create data • Multiple Parties update data • Intermediaries exist to move data | <ul style="list-style-type: none"> • Multiple Ledgers (Copies) • Out of Sync. • Important data <i>may</i> not be collected • Data Security is at risk with conventional sharing mechanisms | <ul style="list-style-type: none"> • Data not synchronized in time' • Delay Costs money • Participant Transactions depend on each other • Verification is necessary |

Business Challenges of Implementing Blockchain?

Image Omitted. Source: IBM Institute for Business Value analysis

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| Network of Participants | Need to share data | In a Timely and Trusted Way |
|---|---|--|
| <ul style="list-style-type: none"> • Multiple Degrees of Separation, Too many copies • Multiple Complex systems, Legacy Processes • Technology and Process Maturity Varies | <ul style="list-style-type: none"> • Data not synchronized in time' • Important data <i>may</i> not be collected • Data Security is at risk with conventional sharing mechanisms | <ul style="list-style-type: none"> • Calcified Organizations resistant to change • Regulation resistance to change • New business models come with risk |

Conventional vs Blockchain

| Without Blockchain | With Blockchain | Feature |
|-----------------------------|--|--------------------------------|
| Many Separate Ledgers | Shared Distributed Ledger | Single, Shared Source of Truth |
| Disparate View of Truth | Consensus | Trust, Single Source |
| No view of Data Lifecycle | Consolidated view of the Data journey | Provenance |
| Data can be corrupted | Almost impossible to corrupt ledger data | Trust, Immutable |
| Flexible Privacy & Security | Secure, Administered | Security |
| Slow exchange of data | Near Instant Visibility | Speed |

Blockchain

- Encrypted, distributed ledger, which can only be changed upon network approval.
- Considered one of the safest methods for storing data and completing transactions.

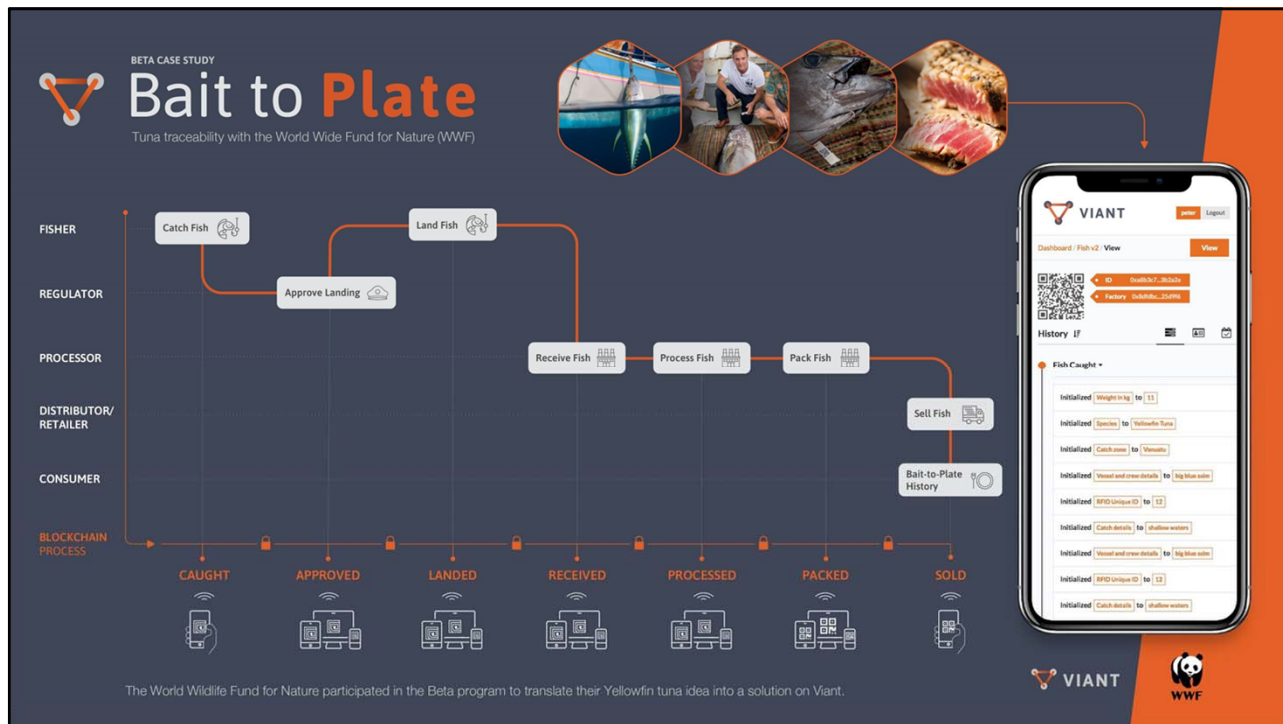
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Supply Chain Traceability

- **Consumers and businesses are increasingly requiring traceability of goods and services**
 - Food security
 - Country of origin
 - Organic status
 - Non-GMO
 - Identity-preservation (e.g., seeds)



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DORSEY
always ahead

Blockchain - Food Security - Benefits

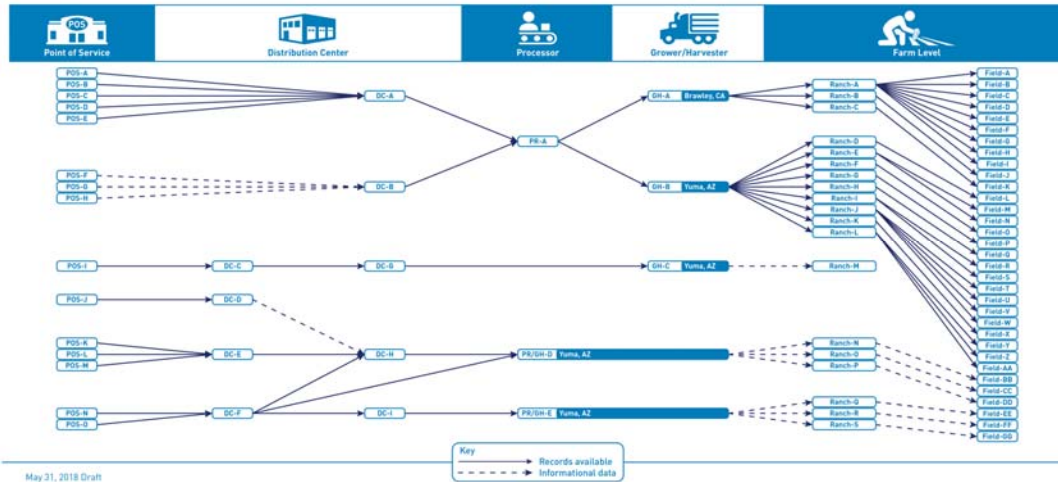
- **Food Safety**
- **Transparency**
- **Trust**
- **Reduce Waste**
- **Promote Discipline**
- **Reduce Tampering**

The effectiveness of the IBM Food Trust solution was demonstrated with a Walmart mango pilot.

Image Omitted. Source: IBM Blockchain

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Supply Chain Traceability- Food Security



May 31, 2018 Draft

Source FDA

Blockchain: Hype v. Reality



Why a Walmart VP had a 'religious conversion' to blockchain

Frank Yiannas, Walmart's vice president in charge of food safety, detailed the revolutionary benefits of the blockchain ledger technology at 100% Business of Blockchain conference.

The effectiveness of the IBM Food Trust solution was demonstrated with a Walmart mango pilot.
 Image Omitted. Source: IBM Blockchain

Blockchain Hype Overstates Reality, Says Steve Wozniak

When should you use a blockchain? Almost never.
 Karl Wüst and Arthur Gervais neatly summed up the point of a blockchain more elegantly than I ever could in *Do you need a blockchain?*:

Figure 1. Hype Cycle for Blockchain Business, 2018



Making Sense of Blockchain : Industries with Traceability

- Multiple Partners : Network
 - Complex Supply Chain
 - Assets Changing Hands
 - Traceability is Key
 - Trust is a Pre-requisite
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- Data Rich
 - Process Rich
 - High Regulation
 - Network is Digital (Mostly?)
 - Not Fast Enough?



Blockchain Applicability to Food Sectors Perspectives and Considerations

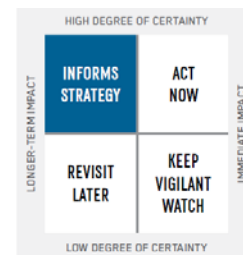
Industry Considerations

- Is the industry ripe for Decentralization?
- What is the acceptable granularity of traceability?
- Does the industry rely on high record keeping?
- Are asset ownership, transparency and trust important?
- How soon can network participants scale to be Digital?
- What consumer segment will pay a significant premium?

Technology Evolution

- “Promising Child” in Tech
- Verification, Storage and Cryptography models evolving
- Scale and Efficiency improvement before enterprise adoption
- Informs technology strategy
- Will manifest as Pilots for the next couple of years

- Baby Food
- Produce
- Bulk Grain
- Dairy
- Meat
- Packaged Goods
- Restaurants
- Fast Food



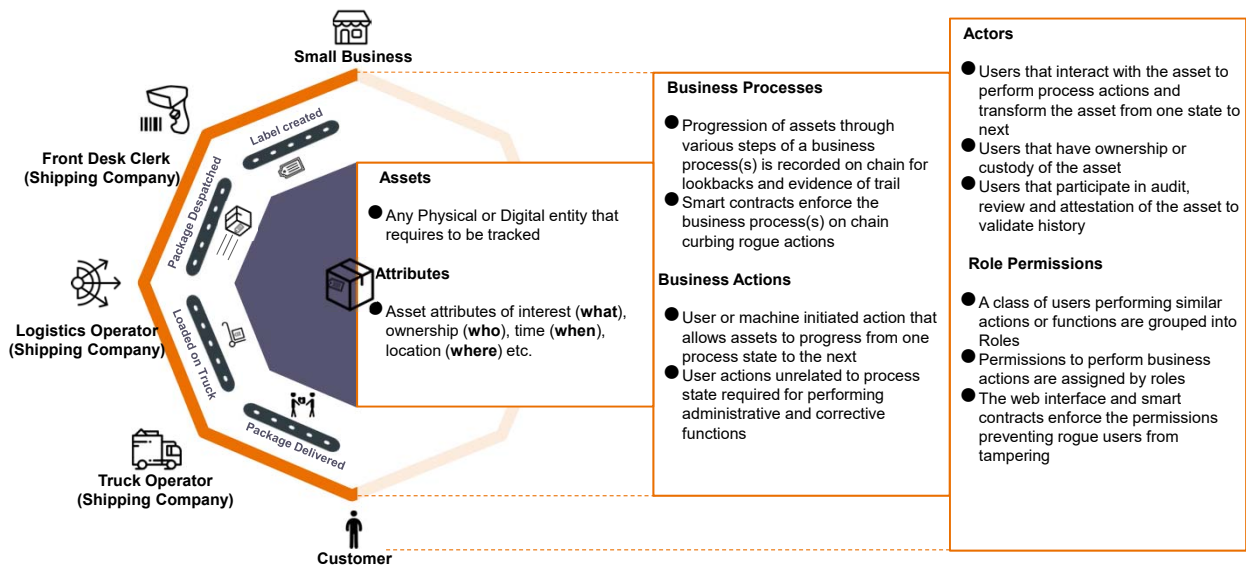
Source: FTI Trends 2018

What are the Business Challenges of Implementing Blockchain?



Source: Knight Foundation

Solution Levers



What are the Legal Challenges?

- Intellectual property
- Contracting and enforcement
- Cybersecurity issues
- Data privacy



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Blockchain - Patents

- **Blockchain Patent Filings**
 - US
 - Europe
 - China



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Questions?

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