THE BLOCKCHAIN ADVANTAGE

Benefits along the food value chain

February 13, 2019
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Director

- Been doing ERP application implementations for over 15 years in both the United States and Europe
- Industry focus on Food & Beverage
“Only 12 percent of middle market food and beverage chief financial officers (CFOs) indicated they are currently using blockchain; however, 95 percent said they viewed blockchain as important, with 28 percent planning to use it within the next 12 months and another 53 percent planning to deploy it within the next 13 to 36 months.”

RSM’s Digital Transformation Report
Agenda

• RSM in the industry
• Blockchain 101
• Blockchain for the Food & Beverage industry
• What is next in Blockchain for the industry
RSM IN THE INDUSTRY
Food and Beverage micro verticals we serve

Produce

Dairy

Meat and Poultry

Seafood

Grocery Manufacturer

Private Label

Ready-to-eat
RSM in the industry

• Industry associations
  • RSM is more than just an association member – we are involved and contribute to thought leadership
    • Events, publications, mentorships
  • United Fresh
    • Member of the Food Safety and Technology Committee
      • Involved in advocacy and legislative issues around PTI and FSMA
  • Produce Marketing Association
    • Member of the Science and Technology Committee
    • Member of the Blockchain taskforce committee
  • International Dairy Foods Association
    • Winner of multiple innovation awards
BLOCKCHAIN 101

A brief overview
What is Blockchain?

- Shared source of truth, referred to as “state”
  - Data is decentralized and distributed

- It's all about consensus
  - All or the majority of participants (also called “peers” or “nodes”) must agree to the same state

- Data is immutable
  - You cannot delete, data is append only

- Can be combined with the use smart contracts

- Also referred to as Distributed Ledger Technology (DLT)
  - Blockchain is a DLT but **not** every DLT is a Blockchain
Public vs. Private Blockchain

• In a public block chain…
  … anyone can participate.
  … data is visible to everyone.
  … no identity verification is done.

These types of blockchains were not designed for enterprises due to them being slow and no governance existing.

Examples are Bitcoin or Ethereum.

• In a private block chain…
  … only invited parties can participate.
  … permission can be set for participants on data visibility.

These types of blockchains were designed with business process scenarios in mind and are much faster.

Examples are Hyperledger Fabric or Hyperledger Sawtooth.
When to use Blockchain

• Multiple participants are involved in a "business relationship"
• There is a need for a shared common database
• The parties involved with the process have conflicting incentives, or do not have trust among participants
• There are currently trusted third parties involved in the process that facilitate interactions between multiple parties who must trust the third party. This could include escrow services, data feed providers, licensing authorities, or a notary public
When to use Blockchain (continued)

- Cryptography is currently being used or should be used. Cryptography facilitates data confidentiality, data integrity, authentication, and non-repudiation
- There are uniform rules governing participants in the system
- Decision making of the parties is transparent, rather than confidential
- There is a need for an objective, immutable history or log of facts for parties’ reference
- Transaction frequency does not exceed 10,000 transactions per second
When **NOT** to use Blockchain

- The process stores a lot of static data, or the data is quite large
- High transaction volume
  - High volume financial trading
- Rules of transactions change frequently
- Potential bad/unreliable external data actors
  - A Blockchain is only as good as the input
BLOCKCHAIN FOR THE FOOD & BEVERAGE INDUSTRY
The future is here…

- Blockchain will transform the way businesses communicate
- Disrupts existing business processes by reducing friction and costs
- Major catalyst for digital transformation
- Potential to unlock new business models through smart contracts
Why is food traceability so important?

• Public health and safety
• Cost and waste for product recalls (entire category not just product)
• Provenance of data
  • Organic, non-GMO, fair trade, gluten-free, nut-free, COO?, etc.
• Consumers are now developing affinity to brands that share their ethos
• Regulatory compliance – it’s only going to get more stringent
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RSM’s CLEARthru

CLEARthru™

QR Code

Consumer/Restaurant

Retailer/Food service

GUID 5/GUID 6

Transport

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RSM's CLEARthru

Orange Navel FL 9ct/3#

Traceability

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Signup

Input your phone number to receive notifications on recalls and coupons!

Phone number

Subscribe
Product is unsafe to consume - recalled

Orange Navel FL 9ct/3#
WHAT IS NEXT IN BLOCKCHAIN FOR THE INDUSTRY
Walmart’s Food Traceability initiative

• Announced in September 2018 (had been piloting for over a year)
• Requires suppliers of leafy produce to capture digital traceability event information onto IBM Food Trust network (which is based on Hyperledger Fabric)
• Driven by salmonella and E-coli outbreaks linked to romaine lettuce
• Tier 1 and 2 suppliers must comply this year

• IMPORTANT: Walmart will then move to all fresh produce, then dairy and protein, and then all food products. Non-food items could then follow
IBM Food Trust vs. CLEARthru

**IBM Food Trust**
- Hyperledger Fabric based
- Data entry:
  - Desktop app (hand-key)
  - Excel upload tool
  - Mobile app (for growers)
- Designed to meet needs of larger retailers
- Recall / traceability scenarios
- Only a few super nodes

**CLEARthru**
- Support for multiple blockchain types (including Hyperledger Fabric) – defined at customer/vendor level
- Data entry:
  - Integration from ERP system to blockchain to one or more blockchain networks
- Designed to meet needs of producers & brand owners
- Recall / traceability scenarios
- “Consumer” focused (end-consumer, restaurant, distributor)
- Allows push notifications – recall, coupons, etc.
- Supports unlimited nodes
Are you prepared for Blockchain?

• Blockchain is only a platform
• Do you have the systems and process in place to track the required data?
• Do you trust the state of your current data?
• Competitor disruption – can you afford to be late to the table?
What can you do now?

• Assess current state of data, systems and process for support of Blockchain technologies and business scenarios

• Do you want to wait until you are forced to comply, or do you want to create additional value for your organization?

• Are there other opportunities that may exist in reducing cost and complexity of business transactions with trading partners?
THANK YOU FOR YOUR TIME AND ATTENTION
QUESTIONS
AND ANSWERS