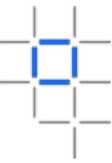


# Blockchain – Build a Supply-Chain Ecosystem



*Walter Stiers*

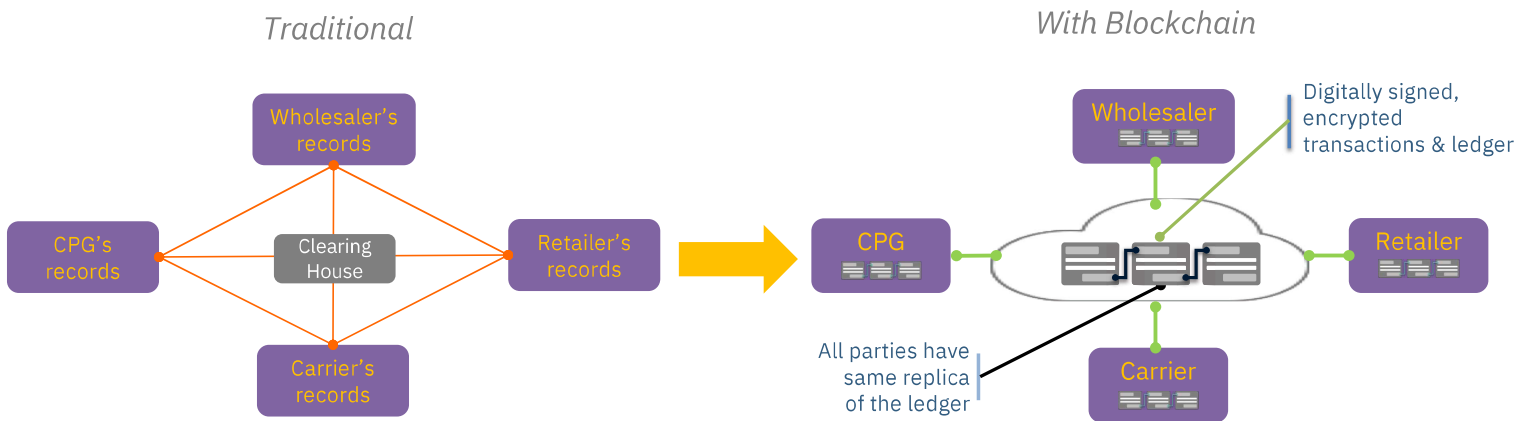
Walter\_Stiers@be.ibm.com



**IBM Blockchain**



# Blockchain will fundamentally change business processes



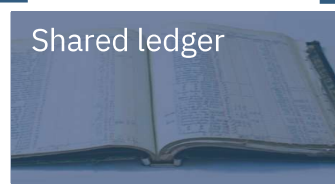
... Inefficient, expensive, vulnerable

... Consensus, provenance, immutability, finality

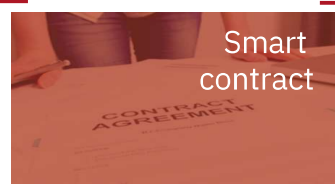
## Blockchain for business...4 key elements

Append-only  
distributed system of  
record shared across  
business network

Shared ledger



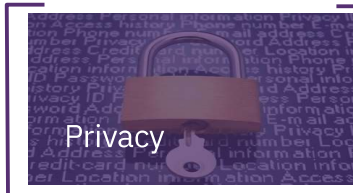
Smart  
contract



Business terms  
embedded in  
transaction database  
& executed with  
transactions

Ensuring appropriate  
visibility; transactions are  
secure, authenticated  
& verifiable

Privacy



Consensus



All parties agree to  
network verified  
transaction

... Broader participation, lower cost, increased efficiency

# IBM Blockchain Strategy

Drive the development of **applications** for specific business use-cases, to be deployed to active **blockchain networks**



## Services

Collaborate with services teams from ideation all the way to production



## Ecosystem

Tap into our diverse ecosystem to develop strategic partnerships and create your competitive advantage



## Solutions

Solve critical industry challenges by building and joining new business networks and applications



## Platform

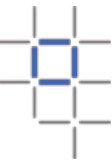
Develop, govern and operate enterprise blockchain networks with speed and security



## HYPERLEDGER

A founding, premier member of Hyperledger, IBM is committed to open source, standards & governance

## What lessons have we learned during this journey?



Blockchain is fundamentally different from other technology enablers because it requires a network or ecosystem to provide value

*To drive true transformation it is critical to address:*

### Business model



Ensure that there is shared business value across all participants in the ecosystem

### Governance model



Ensure the right rules for:

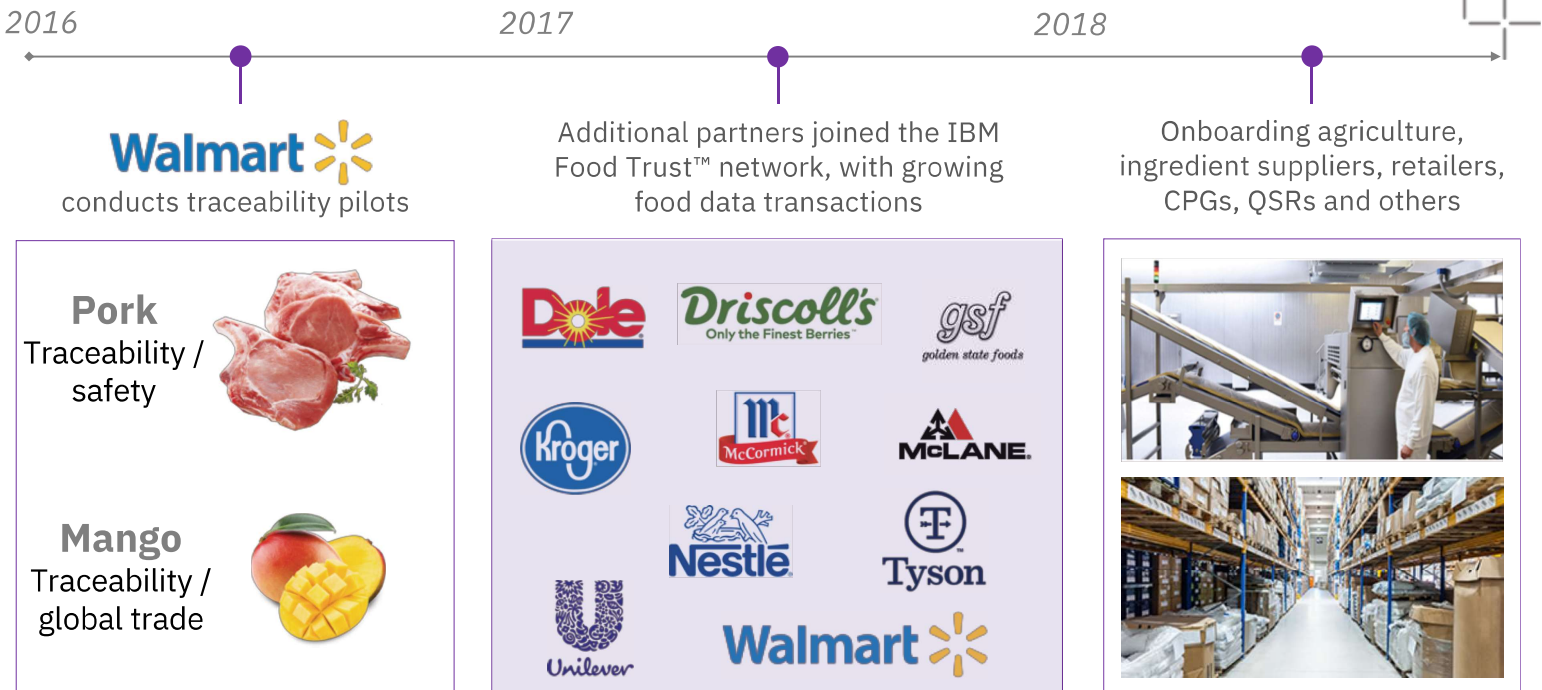
- i. membership in the network
- ii. data ownership, access and usage rights
- iii. lifecycle management of business logic and smart contracts on the network
- iv. clients/3<sup>rd</sup> parties to deliver value added services to the ecosystem

### Trust model



Ensure that the solution provides the right trust guarantees to all participants

# The IBM Food Trust eco-system journey



IBM **Blockchain**



# Walmart, Sam's Club Start Mandating Suppliers Use IBM Blockchain

## Food Traceability Initiative Fresh Leafy Greens



September 24, 2018

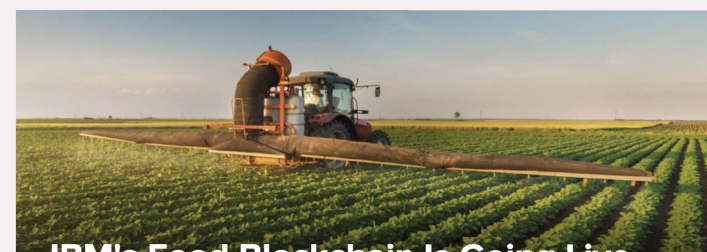
Dear Leafy Greens Supplier,

At Walmart, we are committed to providing our customers with safe, affordable foods. As food safety is a shared responsibility, one way in which we achieve this is through collaboration with our suppliers.

That's why Walmart is today announcing a new, blockchain-enabled [Walmart Food Traceability Initiative](#) that will increase transparency in the food system and create shared value for the entire leafy green farm to table continuum.

- Walmart will require all fresh, leafy greens suppliers to implement digital, end-to-end traceability of their products using blockchain by September of next year.
- IBM, which began testing its blockchain services with Walmart, Kroger and other food companies last year, will provide the software and support for suppliers.





## IBM's Food Blockchain Is Going Live With a Supermarket Giant on Board

194 f g+ in 1



Ian Allison Oct 8, 2018 at 11:30 UTC | Updated Oct 8, 2018 at 12:25 UTC

IBM is taking its food-tracking blockchain into production, making it one of the largest projects to achieve that milestone, and has signed European supermarket giant Carrefour.

Announced Monday, the commercial launch of IBM Food Trust means that large players, small and medium-size enterprises (SMEs) in the food industry supply chain, can now join the network for a subscription fee ranging from \$100 to \$10,000 a month.

And many SMEs may have a stronger incentive to participate now that Carrefour, which operates 12,000 stores in 33 countries, is on board. The retailer will track and trace its own branded products in France, Spain and Brazil, before expanding to other countries by 2022.

"For us, it's a matter of sense for the consumer," Emmanuel Delerm, blockchain program director at Carrefour told CoinDesk. "It's really this that will push us to say to our producers or partners or suppliers, will they come on the platform? It's really consumer-orientated; it's really for them that we are doing this."

Yet Carrefour is only the latest food company with supply chain clout to sign up for IBM Food Trust. Others include Nestle, Dole Food, Tyson Foods, Kroger, Unilever – and not least of all the U.S. big-box behemoth Walmart. Notably, Walmart has already flexed its muscle, telling leafy-greens suppliers last month that they must integrate with the network by September 2019 and citing an E. coli outbreak as an urgent reason to improve transparency.

08 Oct 2018 07:35PM  
(Updated: 08 Oct 2018 07:55PM)

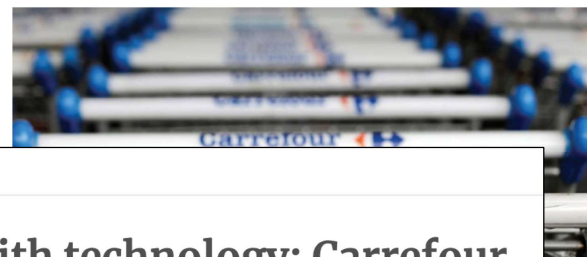


Bookmark



Technology

## Chickens and eggs: Retailer Carrefour adopts blockchain to track fresh produce



Monday 8 October 2018 2:28pm

## Playing chicken with technology: Carrefour jumps on blockchain bandwagon in effort to secure supply lines

Share



## Traçabilité alimentaire : Carrefour rejoint IBM Food Trust

CLOTILDE CHENEVOY | SOLUTIONS & TECHNO, SUPPLY CHAIN, ENTREPRISES

PUBLIÉ LE 08/10/2018

TWITTER FACEBOOK LINKEDIN GOOGLE+ EMAIL IMPRIMER

**Carrefour rejoint la plate-forme collaborative IBM Food Trust qui fédère plusieurs industriels et distributeurs américains afin de mettre en place un standard mondial de traçabilité alimentaire grâce à la blockchain.**



# IBM Food Trust: Overview



**1 out of 10**  
people get sick each year, and  
**420,000** die from foodborne illness



**80%**  
of CPGs say their business is partially  
or entirely paper-based, resulting in  
inefficiencies and unnecessary costs

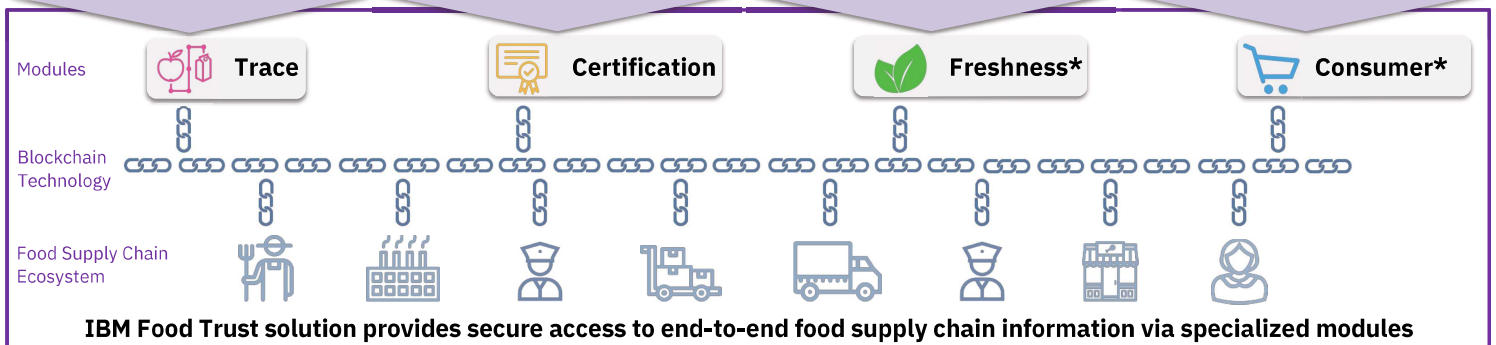


**1 / 3**  
of global fresh fruits and vegetables  
are thrown away because their quality  
has dropped to unacceptable



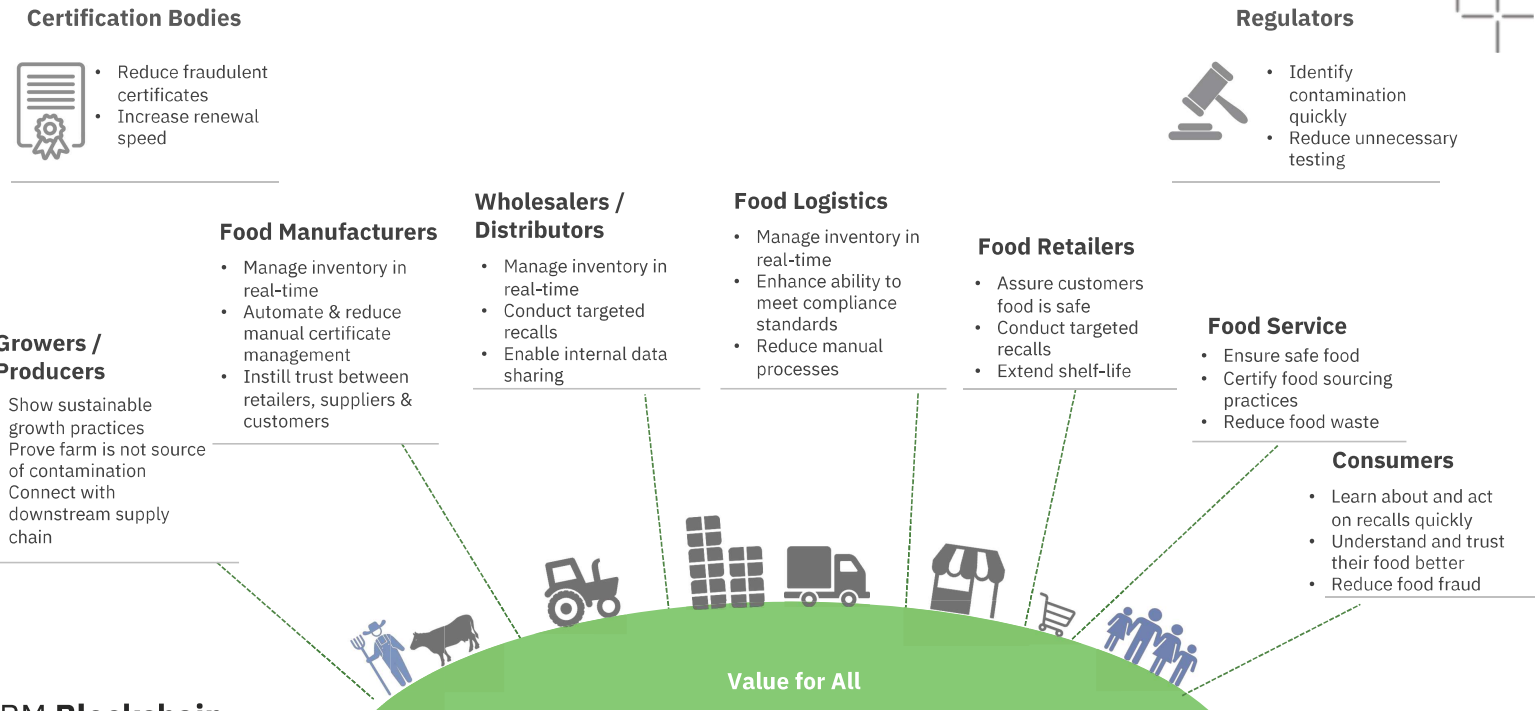
**Only 1 in 4**  
consumers trust today's food system.  
**94%** say they'd be more loyal to  
brands that offers transparency

IBM Food Trust



**Early Adopters**

# IBM Food Trust provides value to the entire food system

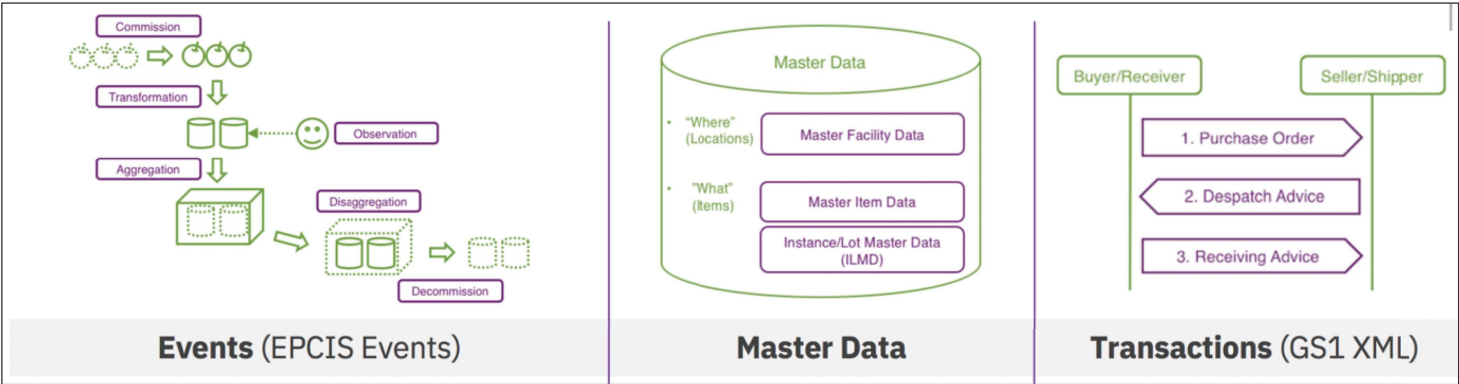


# IBM Food Trust: Integration

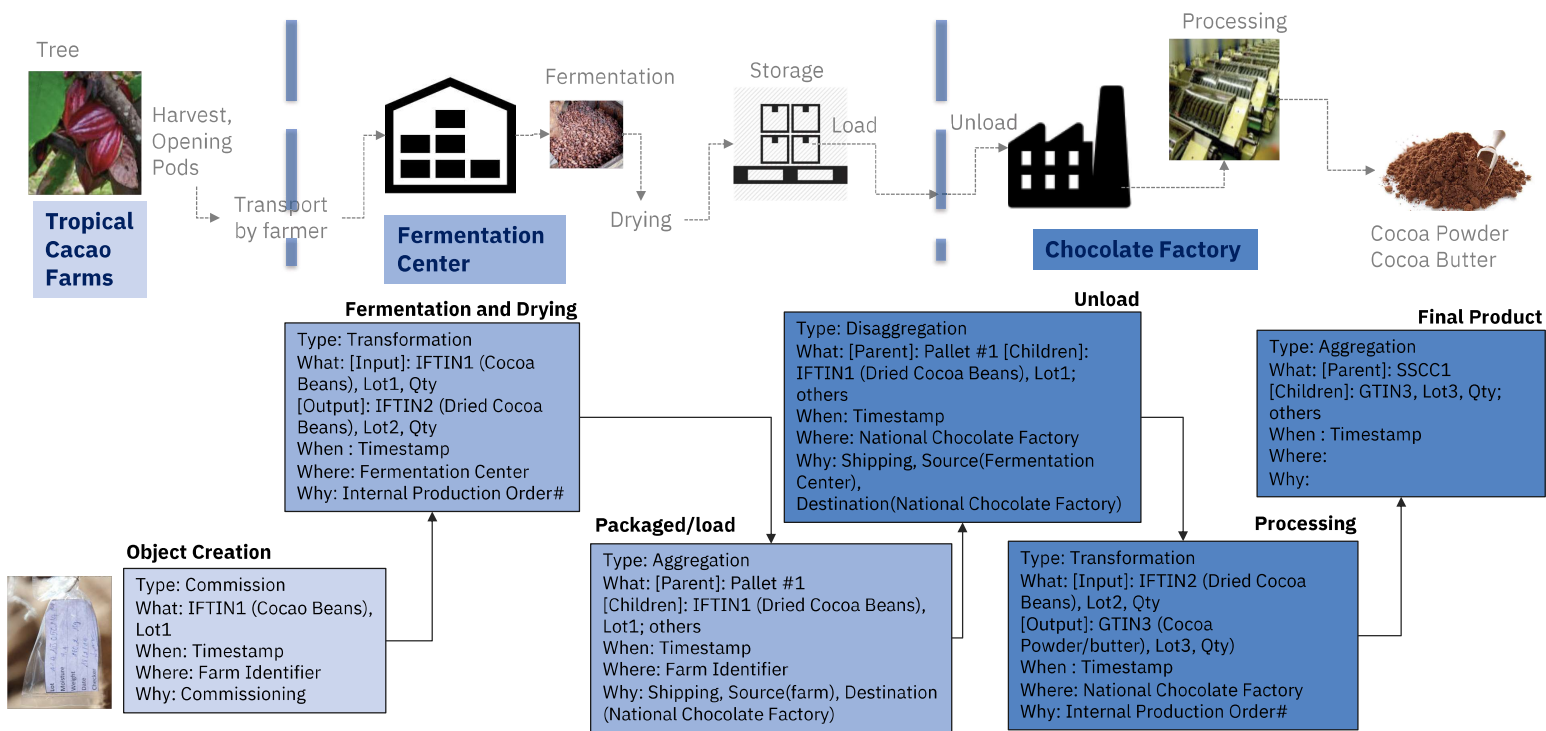


- At its core, IFT relies on the GS1 data standard, in particular:
- ✓ EPCICS events
  - ✓ GS1 XML
  - ✓ GTIN/LGTIN/SGTI master data
  - ✓ GL locations

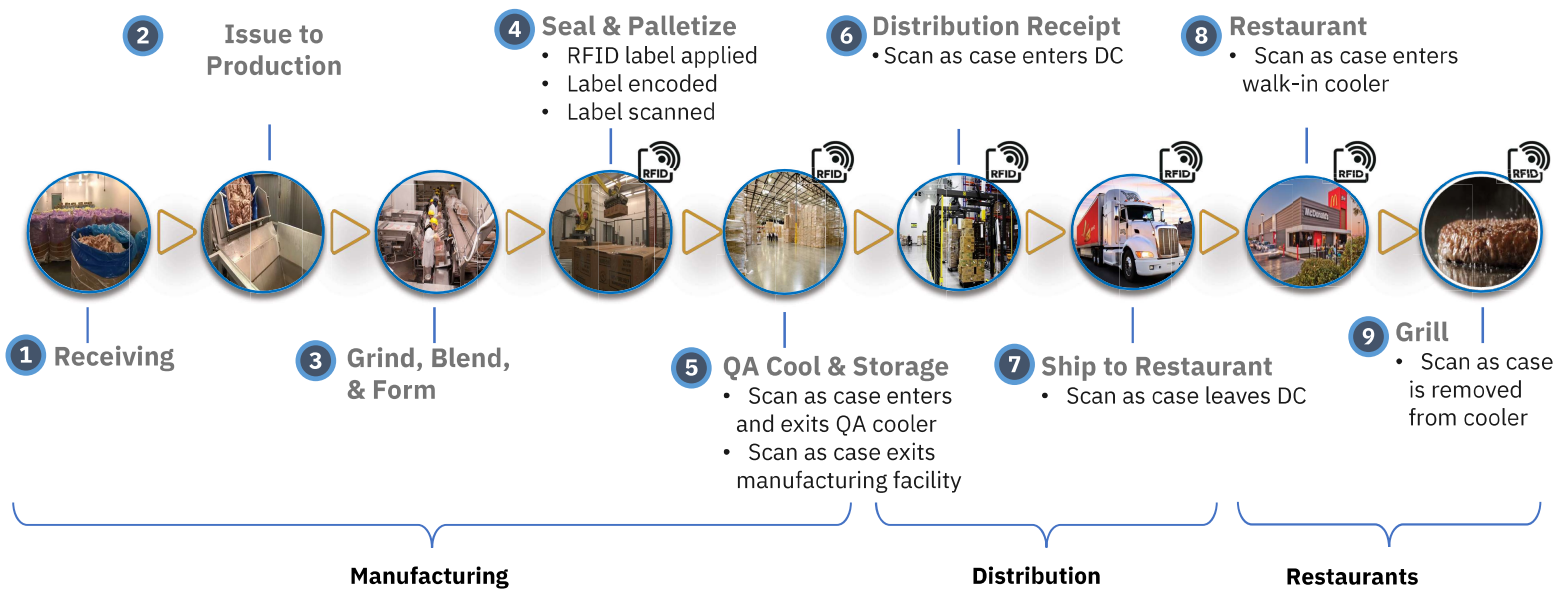
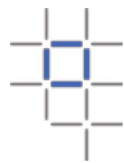
An essential part of the discovery and onboarding phases is to transform and map data from existing systems to be compatible with these data standards.



# Cacao Flow Example



# Freshness: Blockchain + IoT + Analytics



IBM Blockchain

# How is IFT leveraged today?



Integrating IOT capabilities to address temperature and product quality requirements



End-to-end traceability and provenance





Produce traceability from farm to store



Traceability and certificate management for multi-ingredient products



Capture, manage, and optimize large data sets collected during audits and certifications



Traceability and transparency for quality label chicken



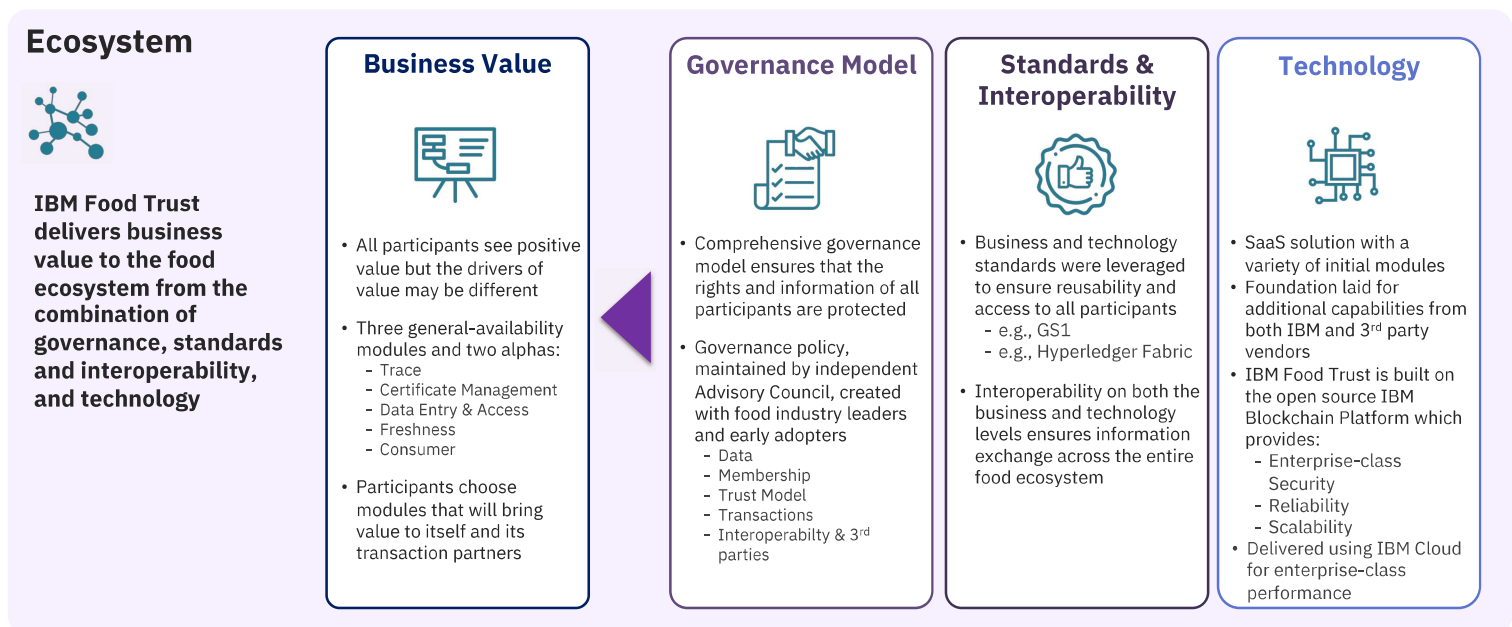
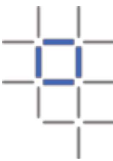




A GLOBAL FARM-TO-FORK TRACK & TRACE VISION POWERED BY IBM WATSON COGNITIVE ANALYTICS, INTERNET-OF-THINGS, CLOUD AND BLOCKCHAIN



# Blockchain solves business problems by enabling the ecosystem to share information in a trusted manner





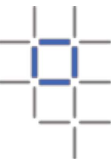
Vision  
for a  
food  
system  
that is...



safer

smarter

more  
sustainable.

# Thank you



 [ibm.com/food](https://ibm.com/food)  
 [@IBMBlockchain](https://twitter.com/IBMBlockchain)  
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 [IBM Blockchain](https://youtube.com/IBMBlockchain)

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