



# IBM Food Trust: How Blockchain Digitally Transforms Food Chains

*Haris Linardakis*

*IBM Cloud Leader, Greece & Cyprus*

[haris.linardakis@gr.ibm.com](mailto:haris.linardakis@gr.ibm.com)

# Only 1 in 4 consumers trust today's food ecosystem.

Food Safety



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

Supply Chain Inefficiency



**80%**  
of CPGs business are partially or  
entirely paper-based

Food Waste



**1 / 3**  
of fresh food is thrown out  
because it is considered  
unacceptable

Food Fraud



**1 in 5**  
seafood samples is mislabeled  
worldwide  
  
(43% mislabeled in NYC)

**The root of these issues, and many others, are the lack of trust and transparency**

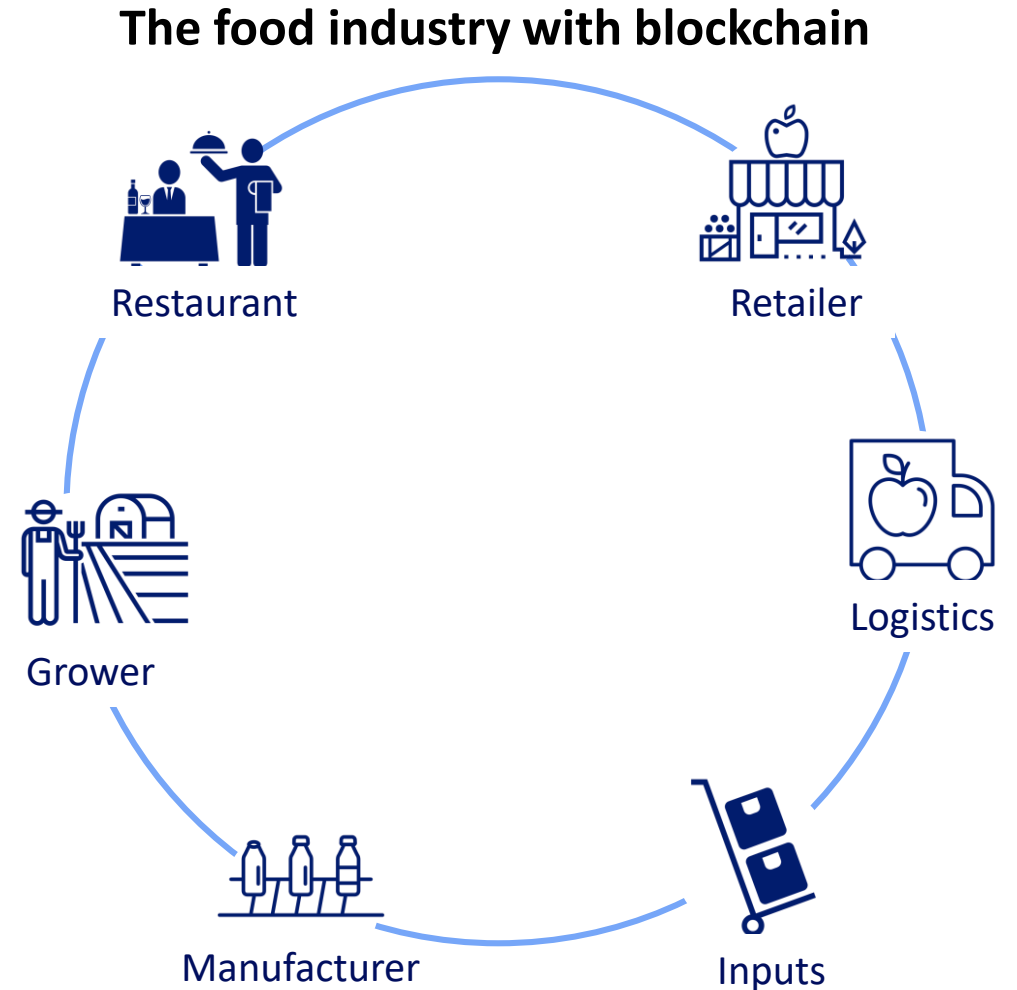
Sources: [World Health Organization](#), [Gravitas Study](#), [FAO of UN](#), [Oceana](#)



# Blockchain transforms systems with trust and transparency

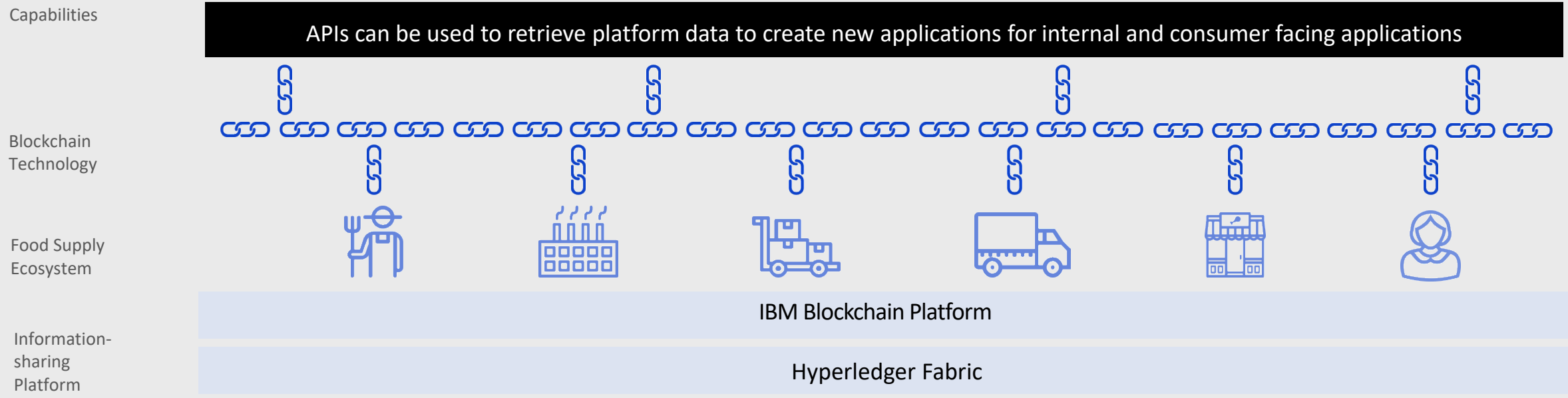
## The Solution:

- Because blockchain provides an **independent data-sharing platform**, participants **trust** it
- Once data is shared in a single data-sharing platform, everyone has **instant transparency** into the transactions they are authorized to view; no intermediation required
- **Data immutability** creates an auditable record of all transactions, disincentivizing fraudulent behavior
- **Dispute resolution** from the shared ledger can be automated saving time and resources

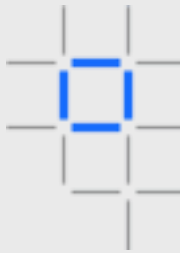


# Built on a blockchain platform, IBM Food Trust offers industry-specific functionality targeted at key pain points

<h3>Trace</h3> <p>Trace the location and status of food products upstream and downstream across the supply chain</p>	<h3>Certifications</h3> <p>Enable reliability and accountability with instant access to digitized records and documents</p>	<h3>Fresh Insights</h3> <p>Access real-time and aggregate supply chain data to extend product freshness and shelf life</p>	<h3>Third-party</h3> <p>Partner to expand functionalities and deliver new value across the food system through our APIs</p>
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# The effectiveness of the IBM Food Trust solution is already demonstrated

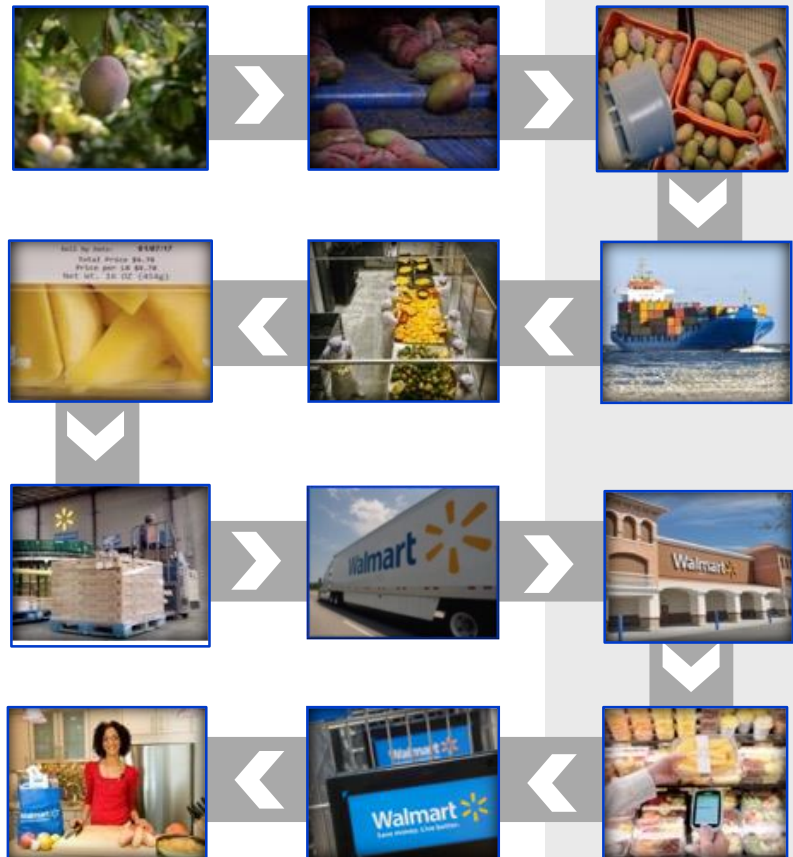


## Pilot Test Case

How long does it take to trace a package of sliced mangoes back to the farm?



## Supply Chain



## Results

Typical manual, mixed digital and paper-based method

**6 days**  
**18 hours**  
**26 minutes**

IBM Food Trust digital solution

**2.2 seconds**

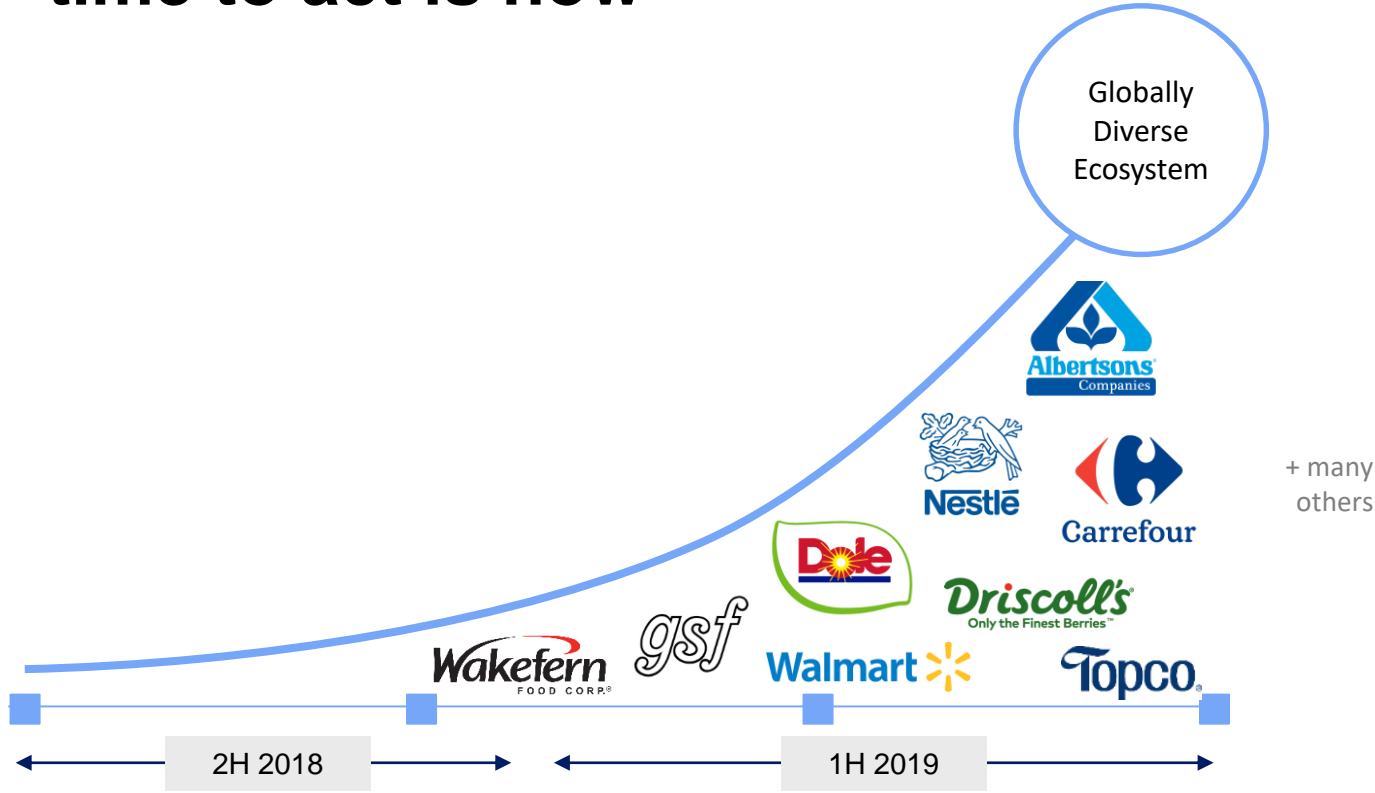
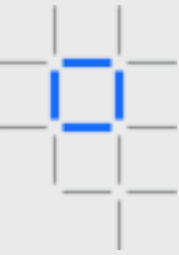
# IBM Food Trust is built to create value for all ecosystem actors

IBM Food Trust speeds time-to-value by:

- Adding **new modules** that address various food supply chain pain points
- Designing a business model where all clients, from small farm to large retailers, generate a **positive ROI** from the first few products and partners onboarded
- **Growing the ecosystem** with supply chain partners, competitors, third parties, and standard-setting bodies



# Momentum is growing and the time to act is now



Food Trust generally available

FDA encourages latest technology for trace

Walmart leafy green suppliers join

Onboarding additional agriculture, ingredient suppliers, retailers, CPGs, QSRs, etc.

Carrefour increases brand affinity with Food Trust

Albertsons traces romaine lettuce

Nestlé & Carrefour enable consumer access to farm-to-store info for Mousline mashed potatoes

Today, we are in full production with a growing ecosystem:

- Global, diverse and extensive member network on the Food Trust ecosystem
- 12M+ transactions representing over 8K products
- 6M+ food products on retail shelves
- 500K traces conducted to date
- Top 4 Food Retailers in US on platform



# Carrefour

## Problem

- Consumers demand more information on food than ever before
- Retailers lack easy access to this information and ways to share it with consumers

## Solution

- Carrefour partnered with IBM Food Trust to trace select Carrefour products. Together, we implemented QR codes with chicken products that consumers scan for information about source and quality

## Results & Implications

- Increased revenues, according to recent Carrefour [announcement](#)
- Improved brand trust and stronger relationships with consumers



Connecting consumers with information about their food



# Nestle: Gerber Foods

## Problem

- Product data replaces brand loyalty as primary driver of consumer decision making
- Full supply chain visibility is difficult because of food supply chain complexities

## Solution

- Nestlé partnered with IBM Food Trust to test tracing for Gerber Foods

## Results & Implications

- Fuller visibility into supply chain, especially across tiers, nations, suppliers, etc.
- Opportunities for supply chain optimization



Tracing back to source across supplier tiers, countries, and ingredients



# Walmart

## Problem

- Leafy greens can be a source of foodborne illness; Walmart wanted to take proactive action to ensure optimal response in the case of an outbreak

## Solution

- After conducting a pilot with Food Trust to demonstrate instant end-to-end traceability, Walmart launched an initiative to have all its suppliers of fresh, leafy greens on the blockchain solution within a year

## Results & Implications

- Walmart has been able to cut trace time down from weeks to seconds; this is accompanied by significant efficiency gains
- The initiative enabled Walmart to precede the FDA's recommendation for the adoption of the latest real-time tracing technology after the 2018 romaine lettuce E. Coli outbreak<sup>1</sup>



End-to-end  
traceability in 2.2.  
seconds



<sup>1</sup> Statement from FDA Commissioner Scott Gottlieb, M.D., on findings from the romaine lettuce E. coli O157:H7 outbreak investigation and FDA's efforts to prevent future outbreaks; <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm624867.htm>

# Golden State Foods (GSF)

## Problem

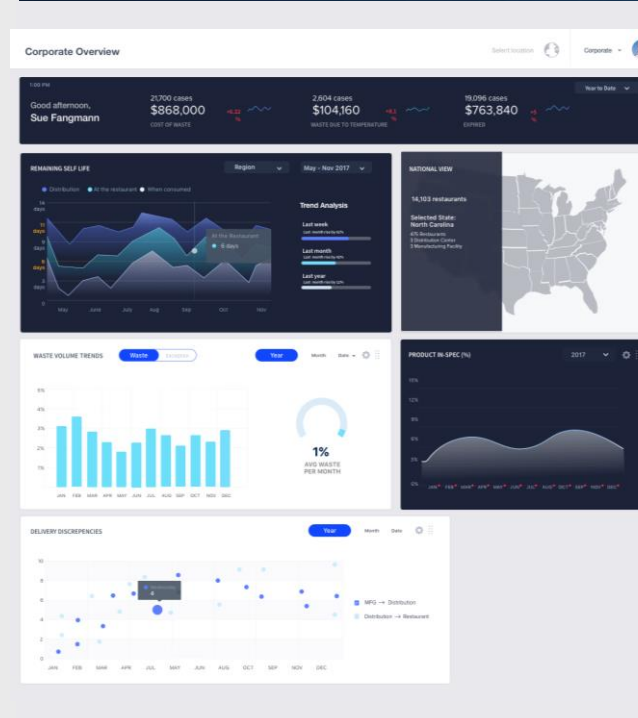
- Today, cold chains are not fully optimized to preserve food quality and extend shelf life
- Restaurants are increasingly competing on freshness

## Solution

- GSF partnered with Food Trust to create real-time, automated visibility into cold chain temperatures and product movement using RFID labeling and IoT sensors

## Results & Implications

- Precise product movement and temperature data capture at every node of the supply chain
- Dynamic shelf life prediction based on real-world environmental conditions not production date
- Granular inventory positions and optimal product rotation





Combining the power of blockchain, IoT, and analytics to improve the cold chain




# Thank you

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