

Revolutionizing the Food Supply with IBM Blockchain

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Three trends are challenging today's supply chains. With the right ingredient, these challenges can become key **drivers for business success...**



Growing Demand



Unsustainable practices are reducing the growth potential from existing land



Farmers need to produce more with fewer resources



Population and consumption growth is driving demand up



Competition



Heightened price competition has reduced economic profit by 50% in the grocery sector



Companies face major overhead collecting supplier data and maintaining records



It's no longer enough to compete on the basis of cheap land or labor



Consumer demand



Brands can differentiate their products by building trust through transparency



63% of consumers are willing to pay up to 36% more for products that are transparently sourced and responsibly made.



94% of customers would be more loyal to a brand that offers complete transparency

Supply chains

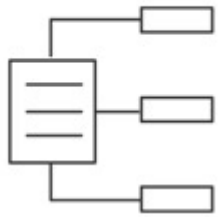


Revolutionizing the Food
Supply Chain

What is blockchain?

Blockchain is a shared, immutable ledger for recording transactions, tracking assets and building trust.

Key elements of a blockchain:



Distributed ledger technology

All network participants have access to the distributed ledger and its immutable record of transactions. With this shared ledger, transactions are recorded only once, eliminating the duplication of effort that's typical of traditional business networks.



Records are immutable

No participant can change or tamper with a transaction after it's been recorded to the shared ledger. If a transaction record includes an error, a new transaction must be added to reverse the error, and both transactions are then visible.

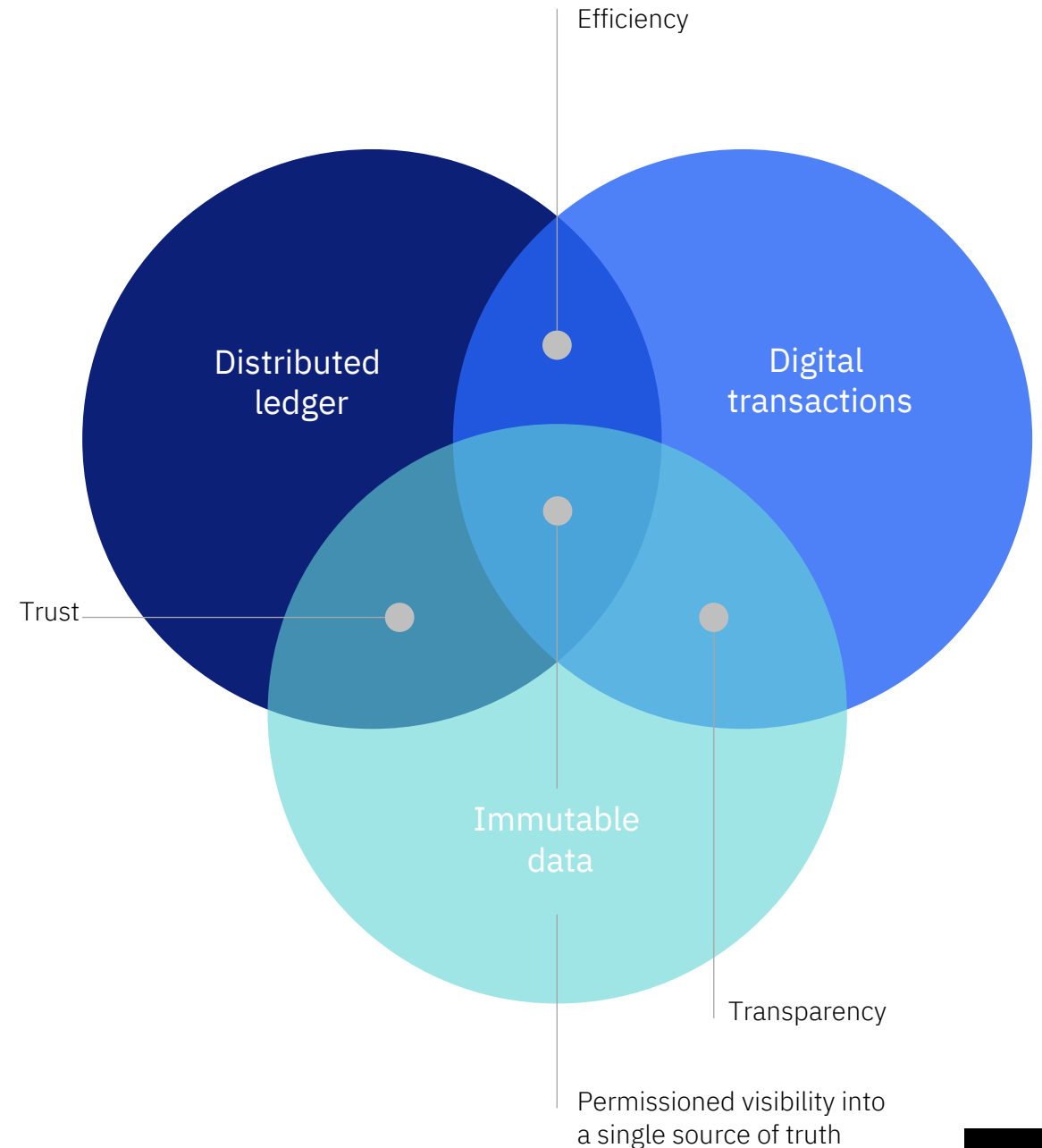


Smart contracts

To speed transactions, a set of rules – called a smart contract – is stored on the blockchain and executed automatically. A smart contract can define conditions for corporate bond transfers, include terms for travel insurance to be paid and much more.

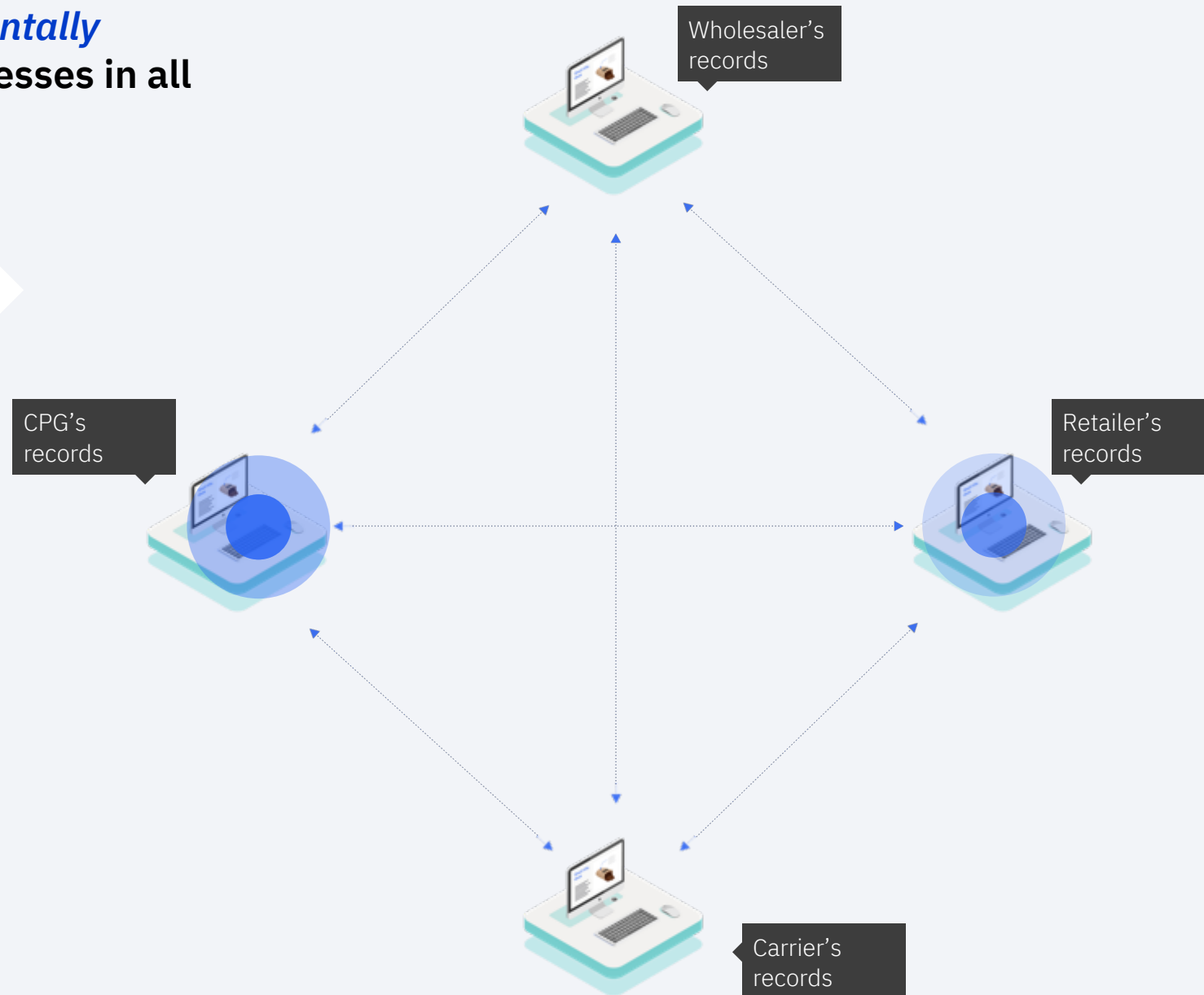
Blockchain creates unprecedented supply chain visibility because of its unique set of properties

- Making blockchain a more **trusted platform for sharing data** across a range of different companies
- When a range of companies trust and use the data-sharing platform, we can build unprecedented **visibility and connectivity** across the supply chain data
- Allows for greater **speed to data** and near real-time insights
- As a result, **companies can collaborate** around disruptive new business models and leverage new drivers of value



Blockchain will *fundamentally transform* business processes in all industries

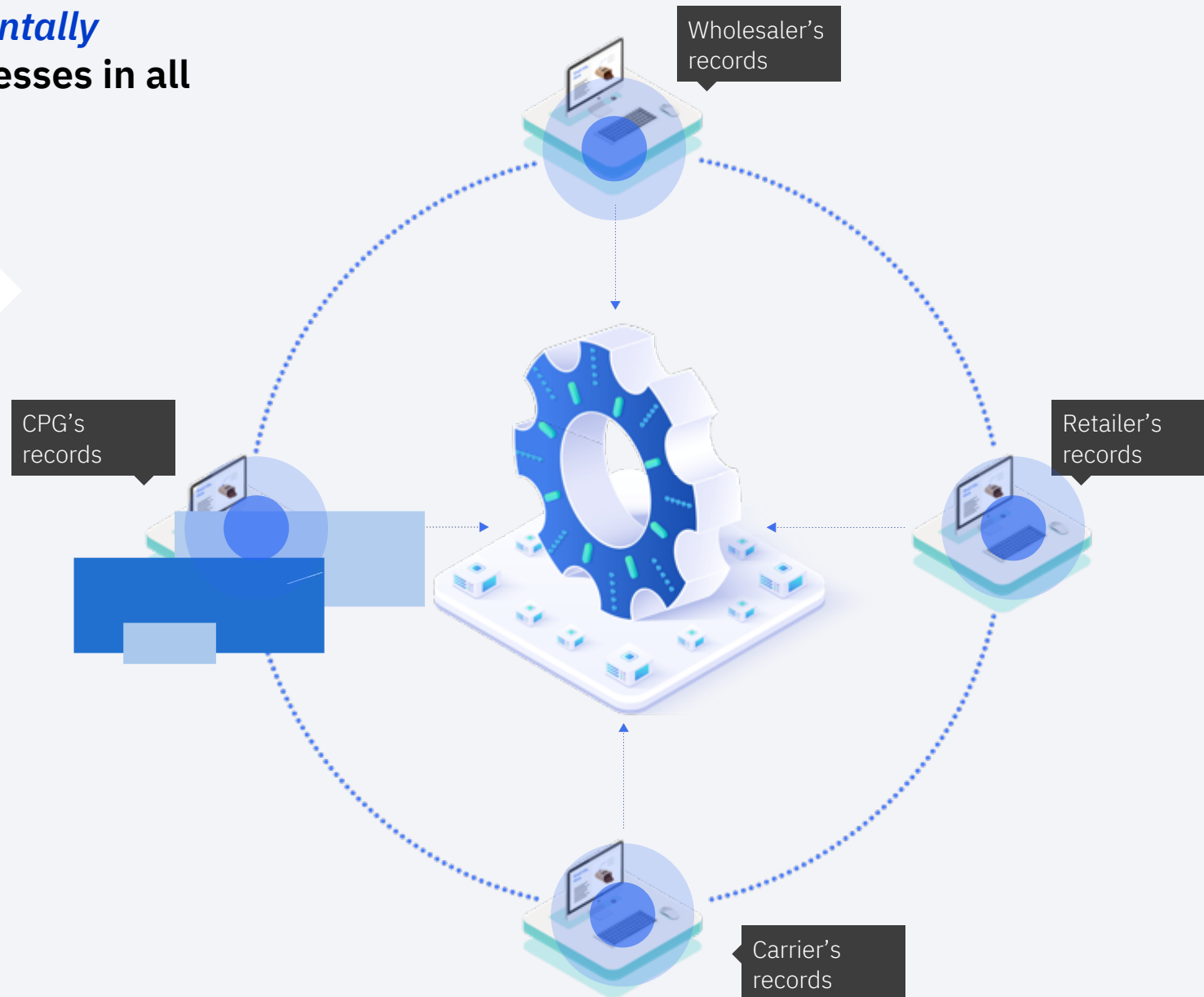
The traditional process



Blockchain will *fundamentally transform* business processes in all industries

With blockchain technology

- Digitally signed, encrypted transactions and ledger
- All parties have same replica of the ledger



With blockchain, supply chains can do things that before were not possible

Track the physical flow of goods from end-to-end



Traditionally, supply chains track perpetual inventory which is derived from documentation.

Tracking the actual physical inventory is not only more accurate, but also introduces unprecedented speed to insights.

Combine data on flow of goods & financial transactions



Typically records on the flow of goods are separate from the records on the flow of financial transactions.

Stitching these together opens new and more efficient methods for payments, invoicing and dispute resolution.

Automate processes across companies



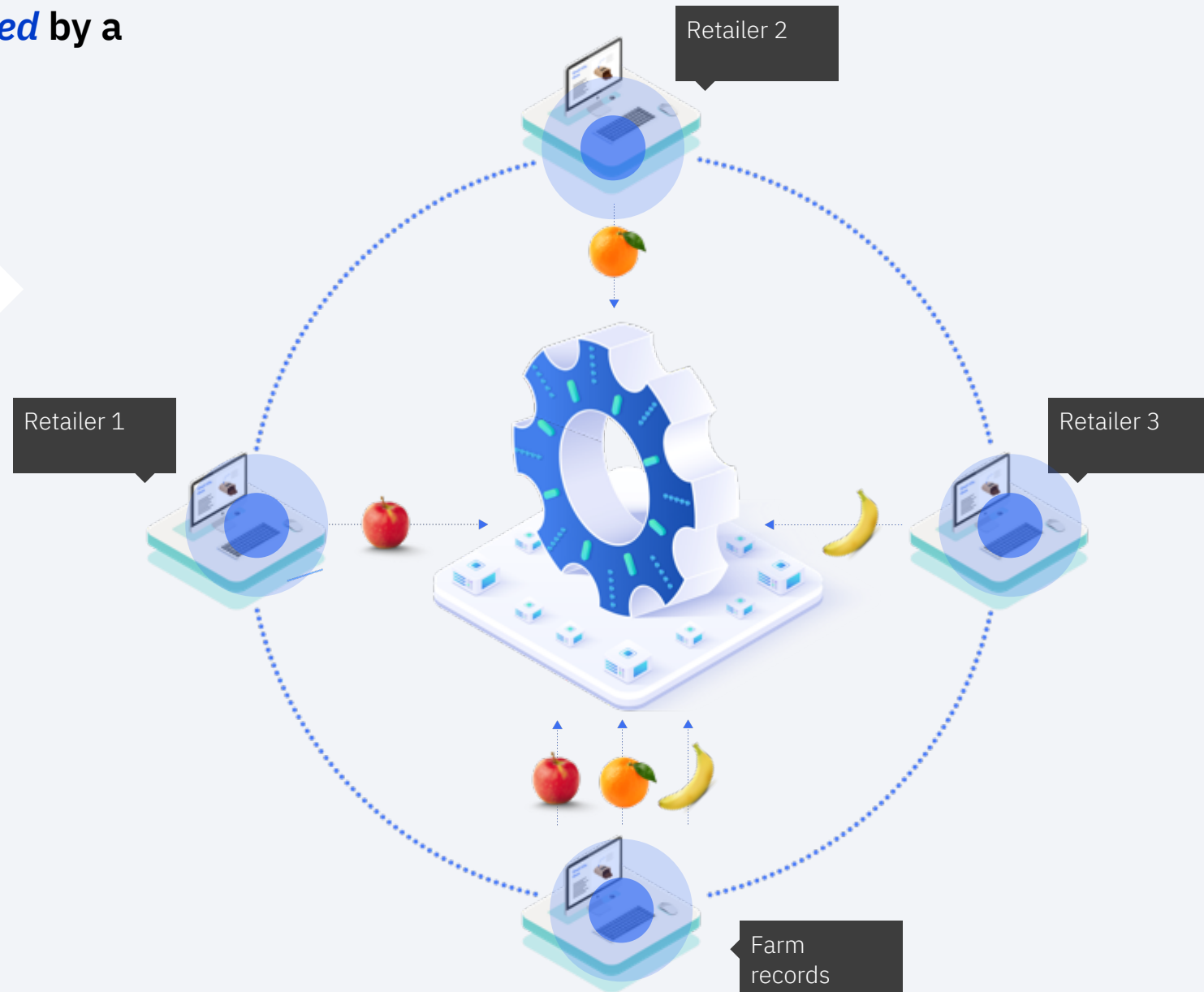
While automation within individual companies is gaining traction, automation that spans across companies is new ground.

Automating intra-company processes creates next-generation supply chain efficiency, responsiveness and agility.

Data *governed and secured* by a provenance engine

Encrypted data is entitled to partners for every product

- Linked visibility to products is provided only to members that participate in the supply chain of that product
- Blockchain allows competitors to collaborate



Transparent Supply empowers your supply chain to drive growth and profitability

Transform your business model to reduce waste



Leverage the supply chain visibility created by blockchain to change how you do business.

- Manage recall scenarios quickly and with precision
- Digitize document sharing across companies
- Provide transparency to build consumer trust

Reduce complexity and operating cost



Reduce error and costs by leveraging blockchain + IoT + AI to:

- Improve predictions and forecasting with real-time data
- Optimize inventory dynamically
- Automate supply chain responsiveness with smart contracts

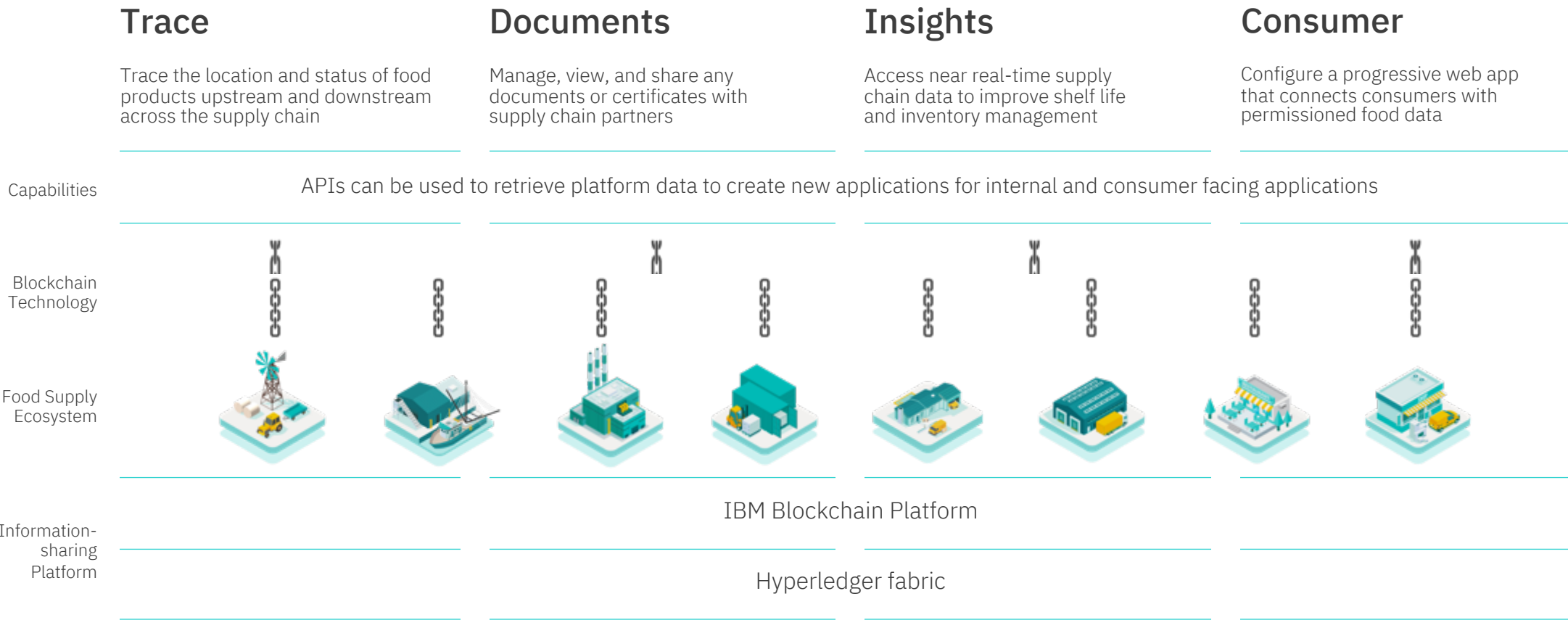
Drive buyer engagement to grow your market



Leverage blockchain to engage and empower buyers and consumers in new ways, including to:

- Understand how a product was made
- Support ethical and sustainable production
- Trust a product's quality and safety

IBM Food Trust offers industry-specific functionality targeted at key pain points

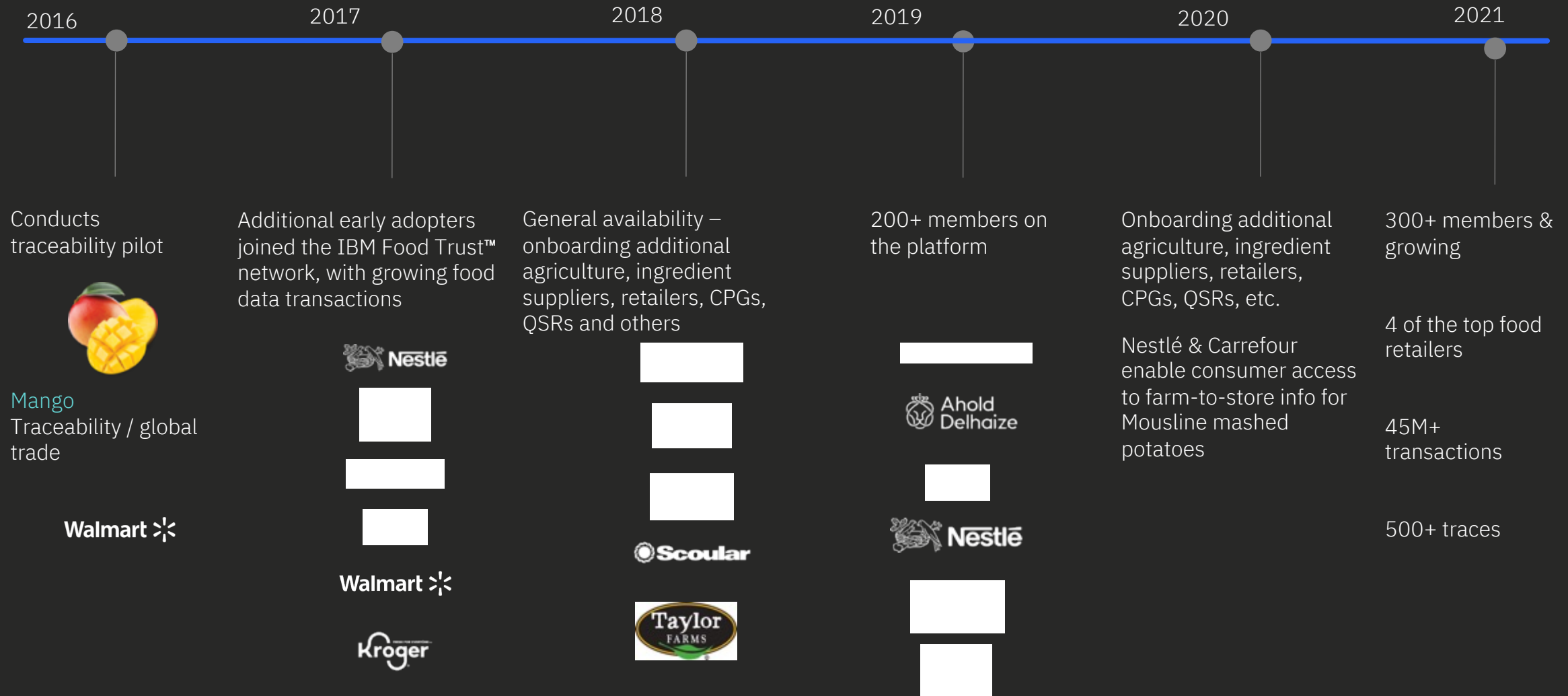


Real opportunities to improve supply chain performance

And empower consumers...

Food Safety	Inefficiency	Food Waste	Food Fraud	Consumer
	80%			75%
10% of people get sick each year, and 420,000 die from foodborne related illnesses	Food retail businesses are partially or entirely paper-based	30% of fresh food is thrown out as it's considered unacceptable	Fraud causes significant consumer distrust e.g. 20% of seafood is mislabeled	Consumers do not trust the food ecosystem
The industry needs to work across growers, processors, distributors, retailers and consumers to answer a wide range of supply chain challenges, beginning with <i>how do I...</i>				
<i>...reduce the number of food recalls, improve brand trust, give the consumer the insights they need to make buying decisions?</i>	<i>...automate my food supply chain to improve transparency and performance?</i>	<i>...ensure that food reaches the consumer in the best condition and reduce wastage?</i>	<i>...improve the traceability of my food, and its ingredients, from farm to table?</i>	<i>...know the product is what it says it is? (organic, sustainable, gluten free, nut free..)</i>

IBM Food Trust journey



IBM Industry Networks for Agriculture & Food Supply Chain

Corporate Convened

IBM Food Trust

VinAssure™

Wine
Network

Norwegian
Seafood Trust AS

Seafood
Network

FARMER CONNECT

Coffee
Network

Ahold
Delhaize

CALIFORNIA
GIANT
BERRY FARMS®

Albertsons

Walmart
Save money. Live better.

Dole

Taylor
FARMS

BRIGHT FARMS
LOCALLY GROWN

PRODUCERS
MARKET

RAWSEAFOODS

THOMAS FOODS
INTERNATIONAL

Drakes

Carrefour

[CHO]
GROUP

Nestlé

KVARØY
ARCTIC™

BioMar

GRIGI

ANTICA MASSERIA
Caroli

AGRI MAX
SHAPING THE FUTURE OF AG

gsf
golden state foods

Matines

El Ordeño

TERRA DELVIA

LABEYRIE
FINE FOODS

Colli del Garda
Italian Gourmet

Gerber

Smithfield
Good food. Responsibly.

SSP

Common Data
Standards - GSI

APIs & Data
Access

Trust Model

Interoperability

Permissioned

Data Ownership
Security

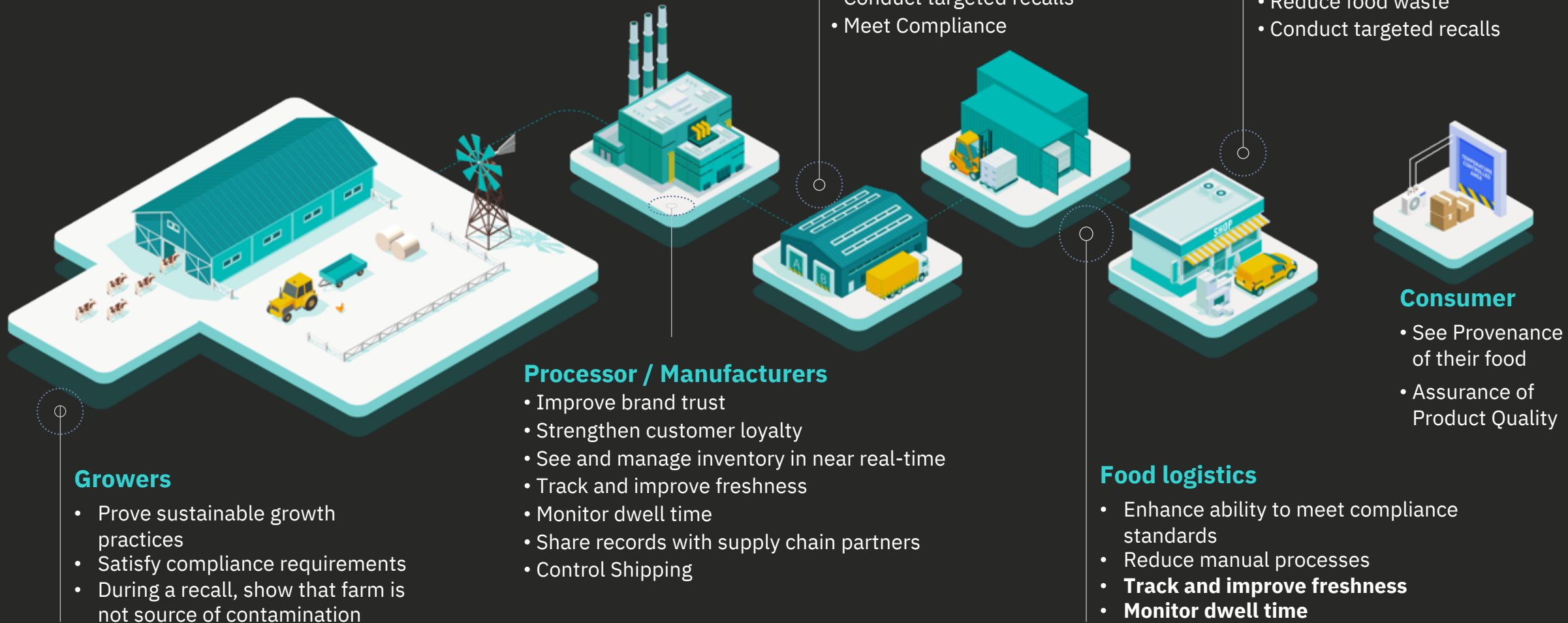
Smart
Contracts

IOT
Integration

Federated
Identity

Industry Supply Chain Networks

Create value for all – Food



IBM Food Industry Supply Chain Network use cases



Challenges

Focus On...

- ▶ Food Safety
- ▶ Sustainability
- ▶ Food freshness
- ▶ Food waste
- ▶ Food fraud
- ▶ Brand trust
- ▶ Supply chain efficiencies

Initiatives & Case Studies

Food traceability for safety
Supply chain visibility and food recalls



Food provenance for transparency
Documentation & Trace for Fraud, QR Code, Logistics,
Increased Value of Product



Brand enhancement
Visibility to Journey & Provenance of Product
Traceability of Product for Quality



Supply chain visibility, insights & leveraging IOT DATA
For quality, freshness, waste reduction and monitoring



Circular economy & support of small farmer
For connecting consumers to farmers and farming c
communities to raise : Trace, Payments



The Visibility you can Achieve

Live Demo of Folgers 1850 Brand Coffee

*Scan code with your
phone camera to see
Journey and purchase
options*



farmer
connect



SL: Who's behind your cup of coffee? vs Connecting you with our coffee farms
PH: We're proud to partner with Farmer Connect.

WHERE TO BUY

1850 COFFEE + FARMER CONNECT

1850 is proud to partner with Farmer Connect to provide visibility into where our coffee comes from and create ways to support coffee farms.

WHAT IS OUR FARMER CONNECT PARTNERSHIP?

Track the journey of your 1850 100% Colombian Coffee to learn about the farms from which the beans came from, and support charitable foundations in the farm's country of origin.

EASILY TRACE YOUR COFFEE

Scan the QR code on an 1850 100% Colombian Coffee bag to see where those specific beans were grown.

BUY NOW

FIND MORE 1850

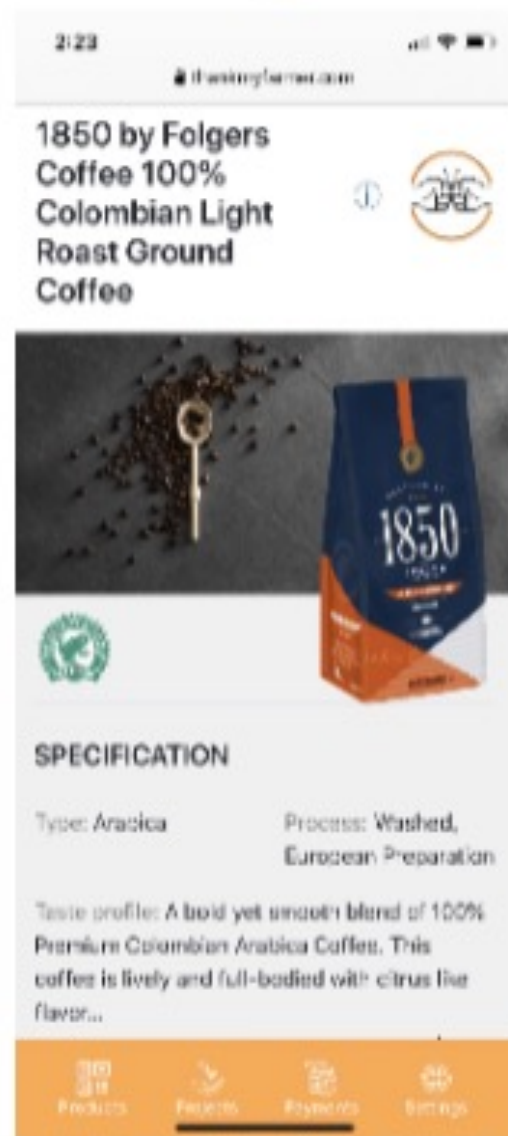
Discover a variety of 1850 products near you.

WHERE TO BUY

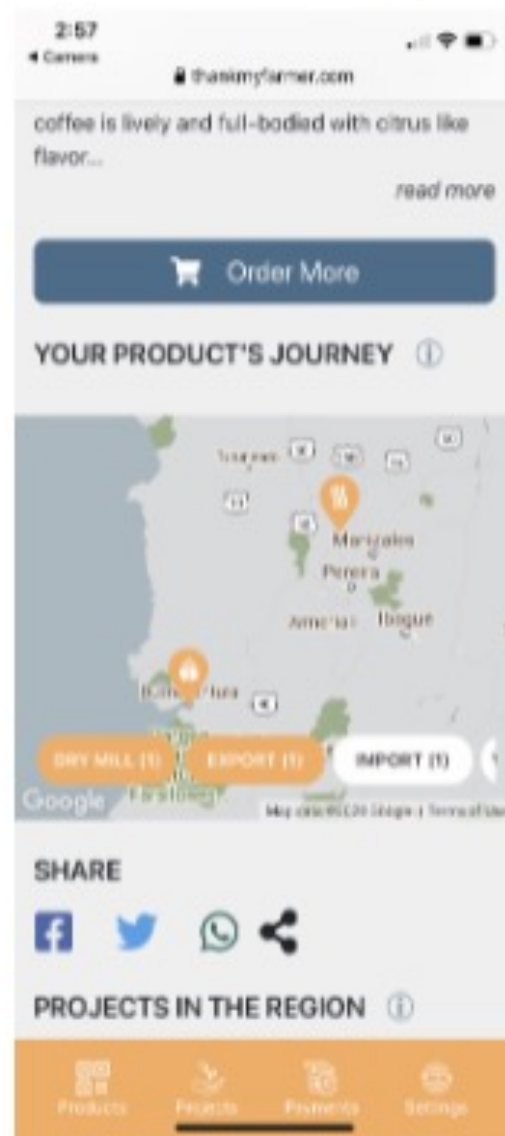
CONNECT WITH US

This email was sent by:
The Folgers Coffee Company
1 Strawberry Lane, Orville, OH 44667-0200
©TMC The Folgers Coffee Company

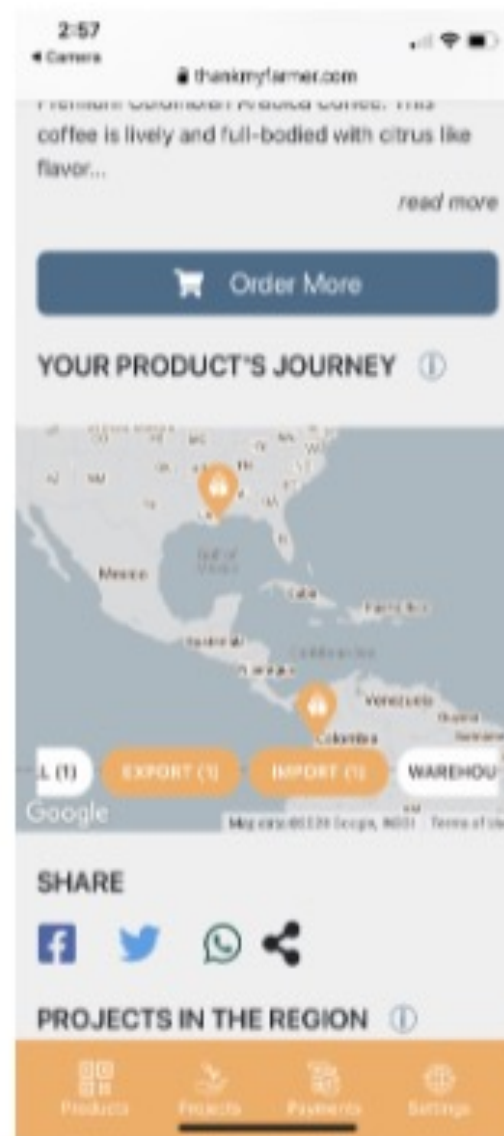
Contact Us | Unsubscribe | Privacy Policy



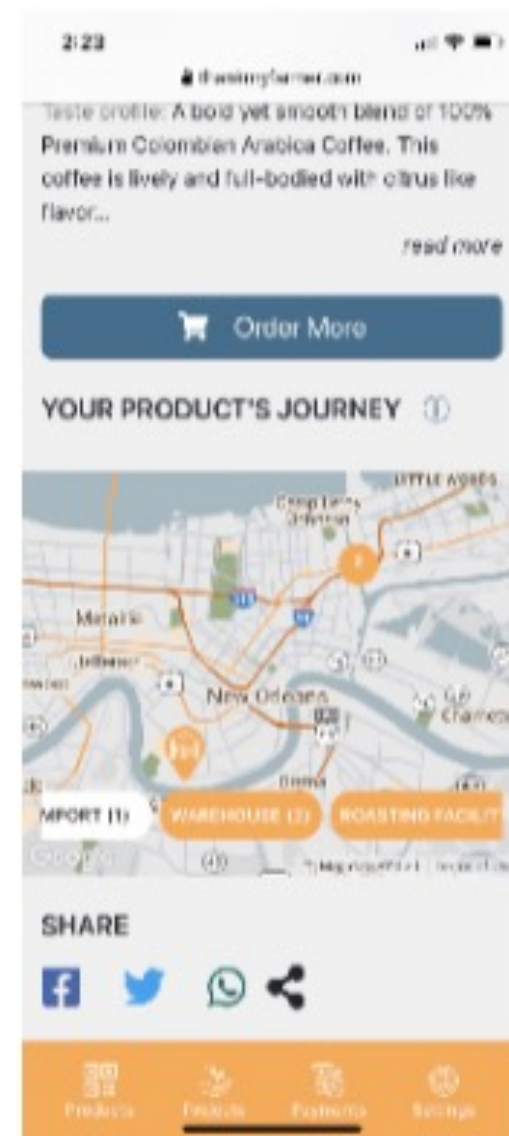
Product Info



Processing to Shipping



Export to Import



Warehouse to Roasting

Golden State Foods (GSF)

Combining the power of blockchain, IoT, and analytics

<https://youtu.be/8WVGQt8EoJ8>

The Challenge

Today cold chains are not fully optimized to preserve food quality and extend shelf life because of challenges with sharing data across partners in real time

Restaurants are increasingly competing on freshness

The Solution

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

The Results

Precise product movement and temperature data captured 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



VinAssure™

The problem

- Wine requires careful handling and a temperature-controlled supply chain; dispute resolution in the case of poor quality is difficult to resolve
- Consumers want to know more about wine's origin and quality

The solution

- A Wine Industry Network that brings together vineyards, wine distributors, shippers, insurers, and retailers in order to improve provenance, quality, and authenticity within the wine industry.



Vineyard



Winery



Freight



Insurer



Shipper



Consolidation



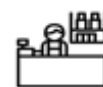
Trucker



Importer



Distributor



Retailer

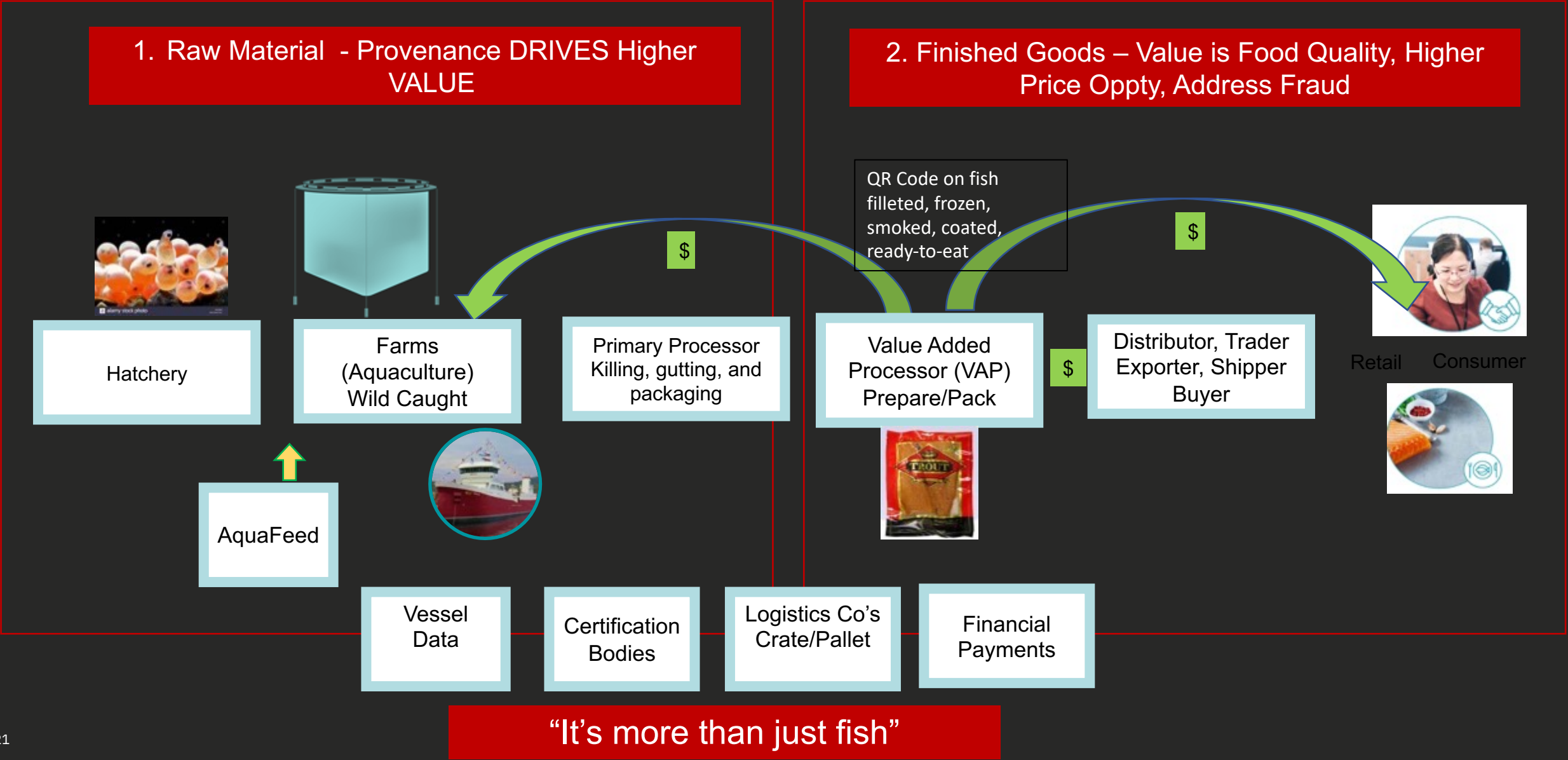


Consumer

Sensor ID,
Terroir, Varietals,
Harvest, etc.

Consumer
access to Wine
Data

From Fish Farm to Retail



Carrefour

Connecting consumers with information about their food



The Challenge

Consumers demand more information on food than ever before

Retailers lack easy access to this information and ways to share it with consumers



The Solution

Carrefour partnered with IBM Food Trust to trace select products and leverage QR codes on packaging that consumers scan for information about source and quality

For example, consumers can scan select brands of chicken to learn information about origin, feed, and antibiotic use



The Results

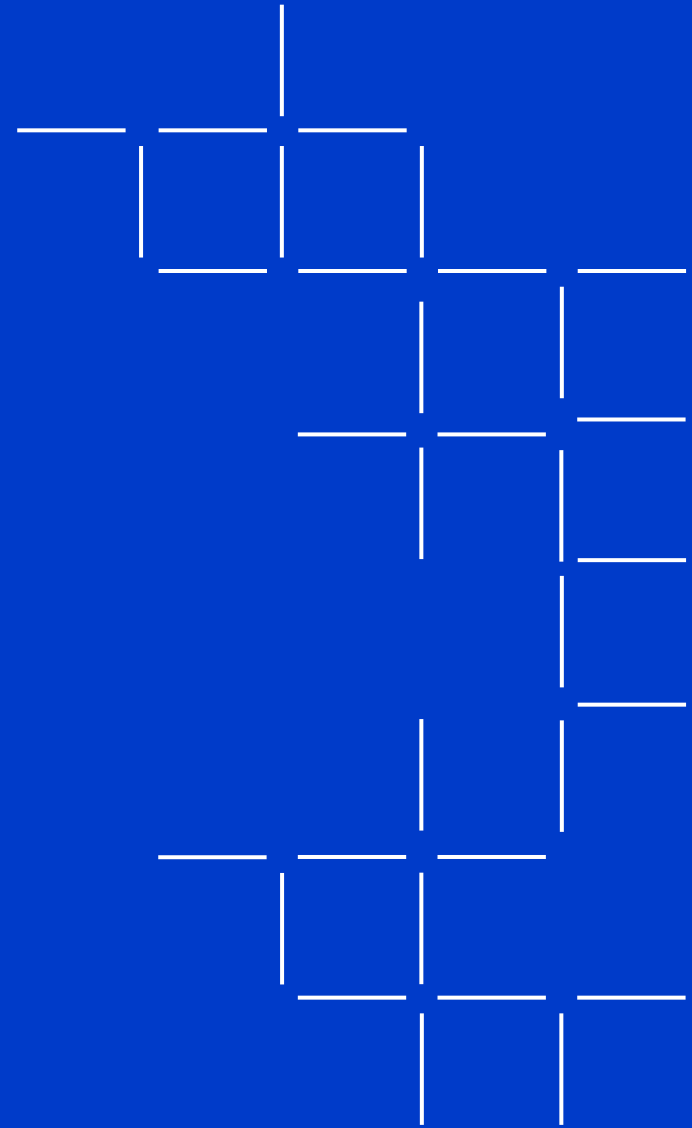
Carrefour announced increased revenues in response to this transparency initiative

The retailer also observed improved brand trust and stronger relationships with consumers creating a halo effect for other products

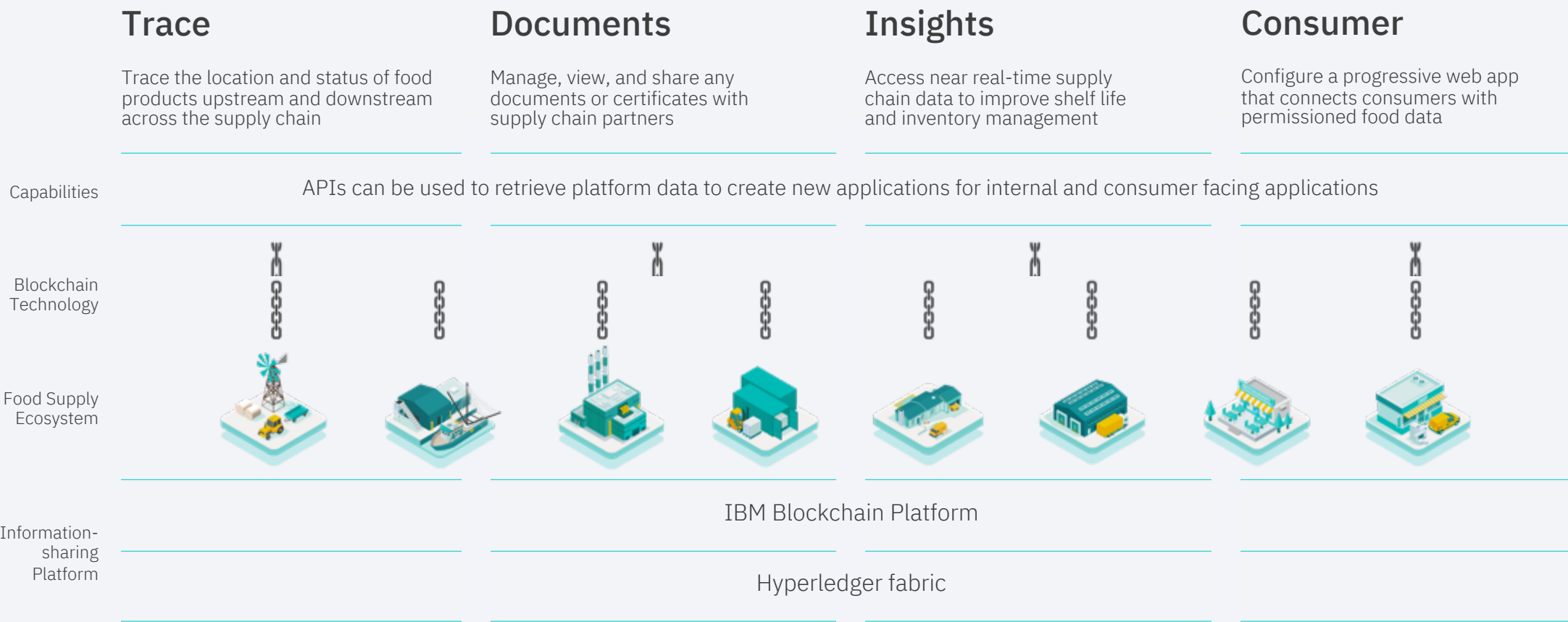
“The pomelo sold faster than the year before due to blockchain,” Delerm said. “We had a positive impact on the chicken versus the non-blockchain chicken.”



See IBM Food Trust in action

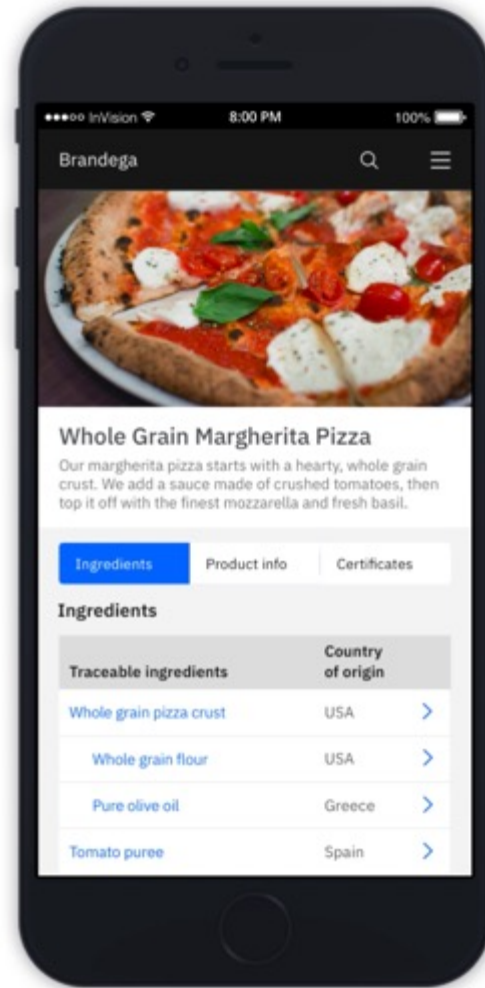
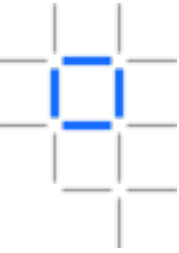


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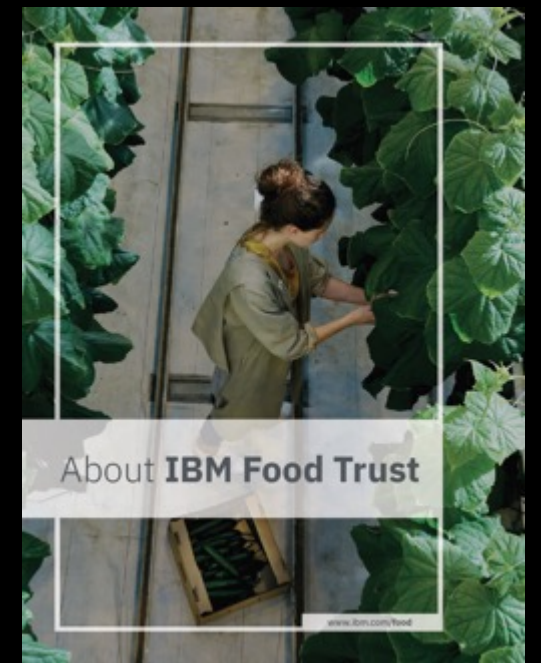
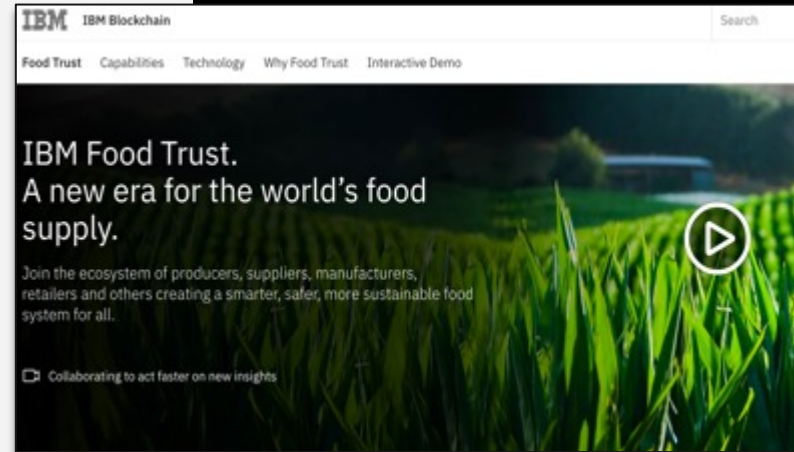
Connecting with Consumers

Share product specific information directly from blockchain
with consumers

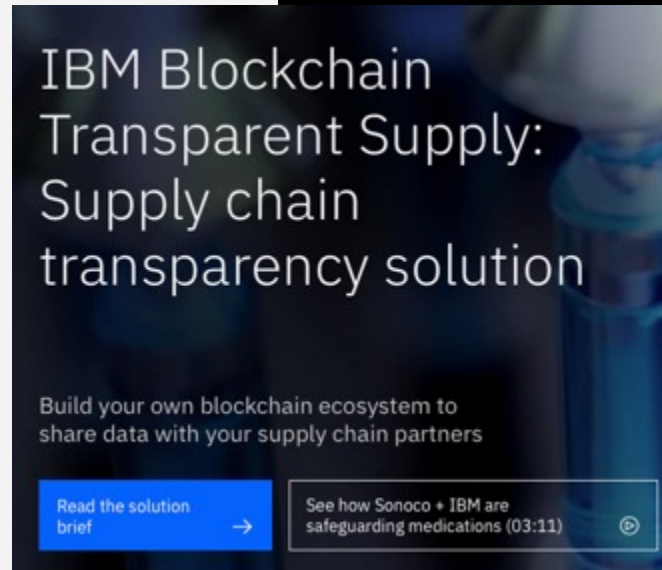


Want to Know More?

Web site: www.ibm.com/food

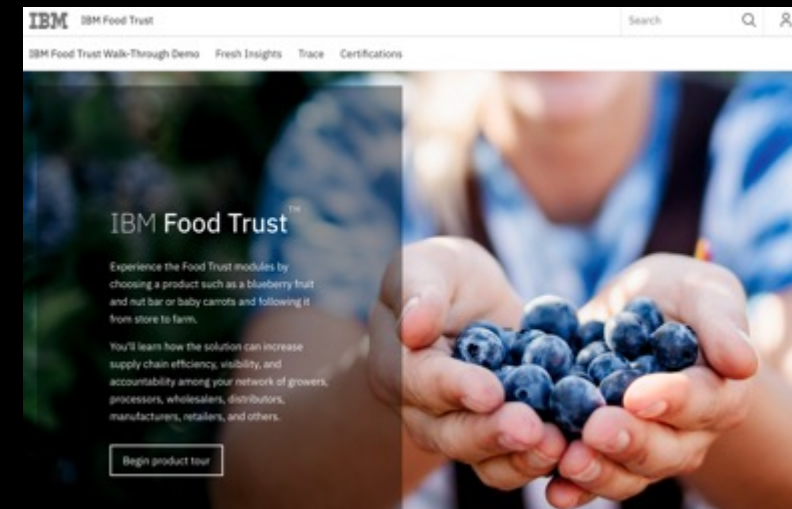


Solution Brief



Web site:
ibm.com/blockchain/solutions/transparent-supply

**Convene your own
Network**



Interactive Demo

