DE HOORN

GS1 – Café Leuven

1517

1968

# Consumer Behaviour: Did it change?



## From

- Lowest Price
- Always Available
- No "out-of-stock"

▼

**ABUNDANCE**

## To

**TRUST**

▲

- Health/ Ethical
- "Enough"
- Reasonable Quality

## Needs



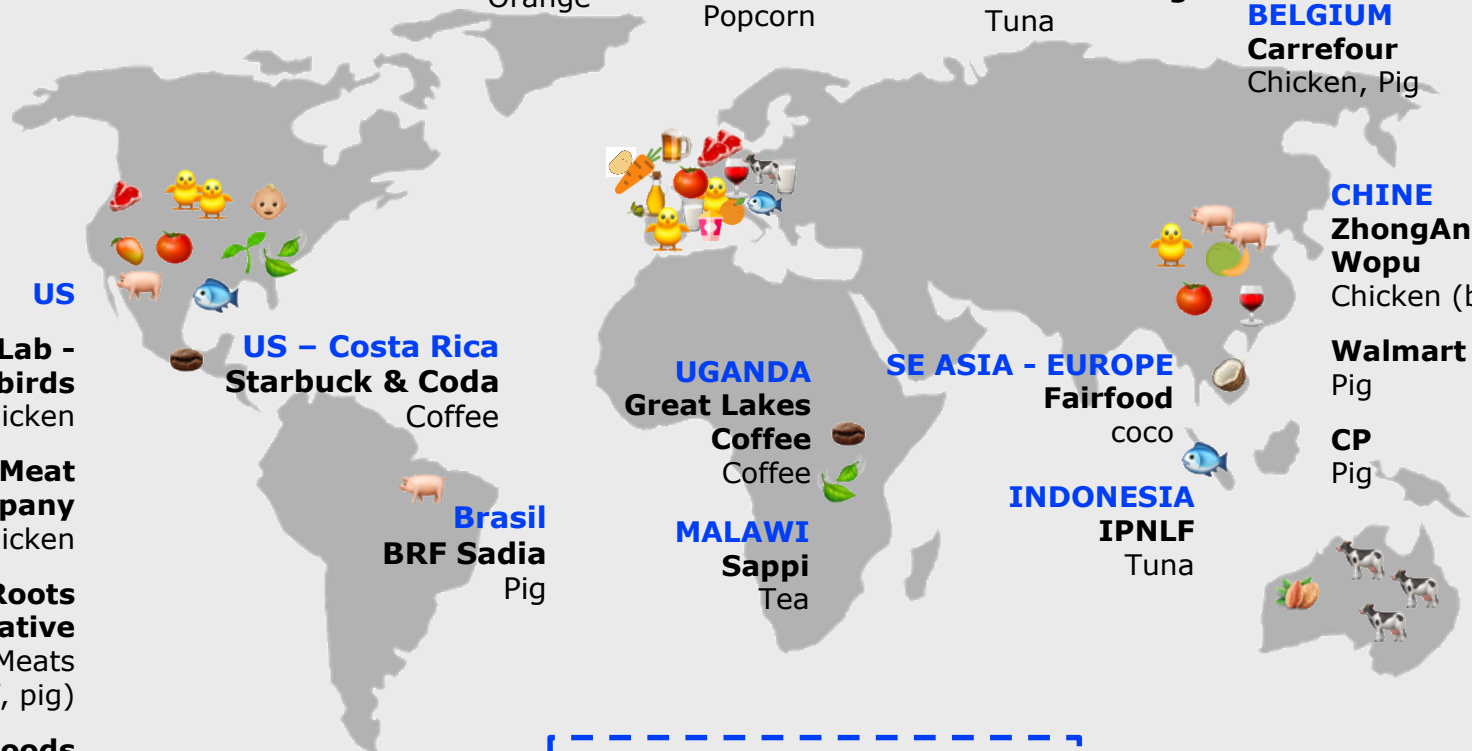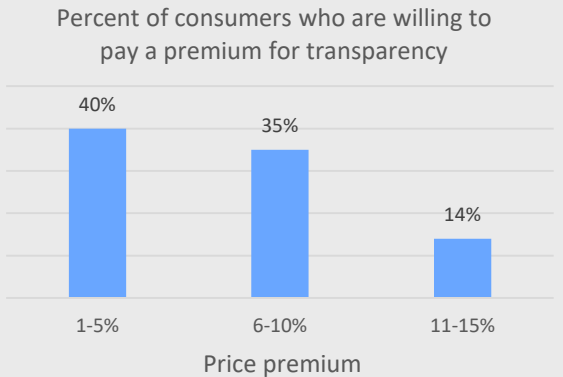ALLERGENS

VEGETARIAN

## Values



LOCAL

ETHICS

ORGANIC

SUSTAINABLE

# Blockchain & Food Traceability

90% of consumers would **buy more** food if they can trace it.
89% are willing to **pay more** for it:

### Percent of consumers who are willing to pay a premium for transparency

Price premium: 1-5% = 40%, 6-10% = 35%, 11-15% = 14%

**EUROPE**
**Ambrosus**
Olive Oil

**IRELAND**
**Arc-Net & E-Spark**
Beer

**SPAIN**
**Carrefour**
Chicken, Orange

**FRANCE**
**Carrefour**
Chicken, Milk, Eggs, Tomato,

**Auchan**
Carots, Potatoes

**Juste et Vendeen**
Milk

**Nataïs**
Popcorn

**SLOVAKIA**
**Zelene Doline**
Milk based

**ITALY**
**Dartess**
Wine

**Carrefour**
Chicken

**Switzerland**
**Gustav Gerig**
Tuna

**UK**
**Halal Trail**
Halal

**Soil Association**
Meats

**Adelphi**
Whisky

**Food Standards Agency**
Beef

**BELGIUM**
**Carrefour**
Chicken, Pig

**WW**
**Process2wine**
Wine
**My Story**
Wine

**US**

**Ward's berry farm**
Tomato

**Walmart**
Mango, Spinach, leafy greens

**Coca-Cola**
sugar (cane)

**Amazon**
Infant care

**National Pork Board**
Pig

**Alpha Food Lab - Blockbirds**
Chicken

**Golden Gate Meat Company**
Chicken

**Grass Roots Cooperative**
Meats (Chicken, beef, pig)

**Bumble Bee Foods**
Tuna

**US – Costa Rica**
**Starbuck & Coda**
Coffee

**Brasil**
**BRF Sadia**
Pig

**UGANDA**
**Great Lakes Coffee**
Coffee

**MALAWI**
**Sappi**
Tea

**SE ASIA - EUROPE**
**Fairfood**
coco

**INDONESIA**
**IPNLF**
Tuna

**CHINE**
**ZhongAn & Wopu**
Chicken (bio)

**Walmart**
Pig

**CP**
Pig

**Coop**
PFT

**Direct Imported Goods**
Wine

**Carrefour**
Pomelo

**AUSTRALIA**
**Drakes & Thomas Foods**
Beef

**Beefledger Limited**
Beef

**INTERAGRI**
Beef

**Commonwealth Bank of Australia**
Almond

**Key data**
**50 initiativs** identified
**+61%** in 6 months (+ 19)
**30%** based on IBM Food Trust

**Globally Diverse Ecosystem**

GS1

Albertsons Companies

Nestlé

Carrefour

Dole

Driscoll's — Only the Finest Berries™

gsf

Walmart

HYPERLEDGER FABRIC

**Efficiency**

**Distributed ledger**

**Digital transactions**

**Trust**

**Immutable data**

**Transparency**
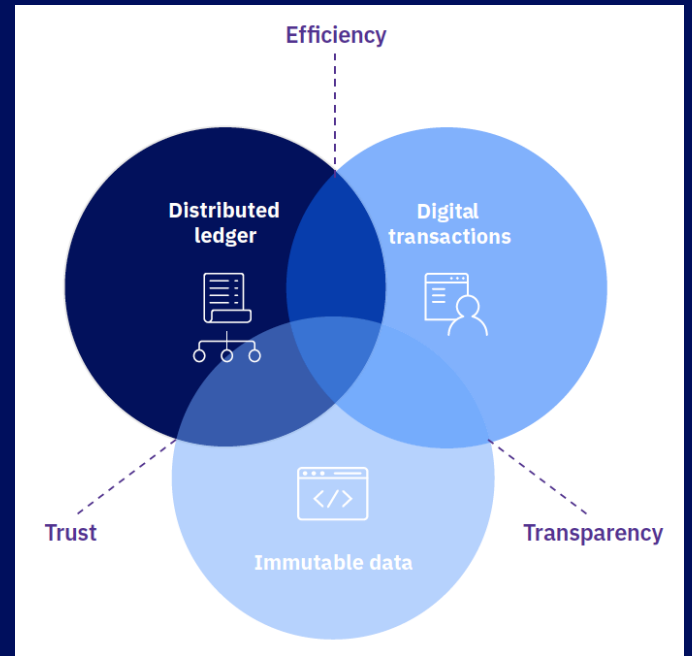
**2H 2018**

Food Trust generally available

FDA encourages latest technology for trace

**1H 2019**

Walmart leafy green suppliers join

Carrefour increases brand affinity with Food Trust

Food Trust releases Fresh Insights

Albertsons traces romaine lettuce

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

**IFT**

Data on the blockchain is replicated, shared and synchronized among parties on a **distributed ledger** without the need for a central administrator.

Once data is entered, it cannot be deleted (unlike data in a database). Edits can be made only by appending new or updated information. With blockchain, you have a permanent record or audit trail of all data entered and edited.

Blockchain's characteristics come together to create a more trusted, transparent and efficient data-sharing platform.

And that can make for a smarter, safer, more sustainable food supply for us all.

# IFT Data

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

"I really had an "aha" moment once I deeply understood the technology. I had been hesitant about creating yet another traceability system – the ones we had tried in the past never scaled. Now I understand that was because they were centralized databases. Blockchain, with its decentralized, shared ledger felt like it was made for the food system!"

– Frank Yannis, former Vice President of Food Safety, Walmart



**Events** (EPCIS Events) | **Master Data** | **Transactions** (GS1 XML)
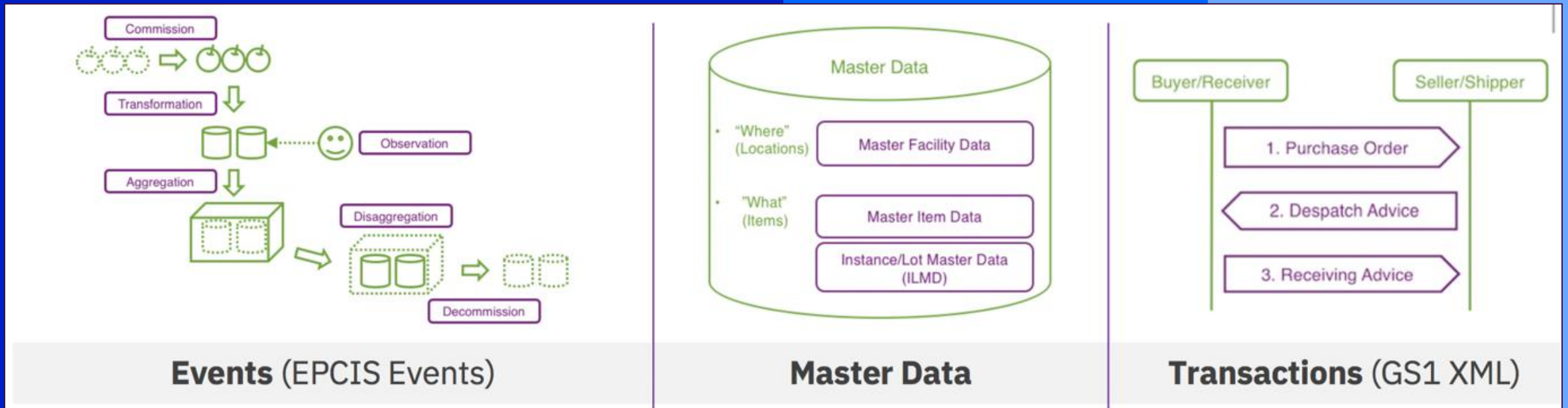
# Value of the Food Trust network

**Certification Bodies**
- Reduce fraudulent certificates
- Increase renewal speed

**Regulators**
- Identify contamination quickly
- Reduce unnecessary testing

**Food Manufacturers**
- Build loyalty and engagement
- Manage inventory in real-time
- Automate & reduce manual certificate management
- Instill trust between retailers, suppliers & customers

**Wholesalers / Distributors**
- Manage inventory in real-time
- Conduct targeted recalls
- Enable internal data sharing

**Food Logistics**
- Manage inventory in real-time
- Enhance ability to meet compliance standards
- Reduce manual processes

**Food Retailers**
- Strengthens consumer relationship and increase brand loyalty
- Assure customers food is safe
- Conduct targeted recalls
- Extend shelf-life

**Consumers**
- Understand and trust their food better
- Learn about and act on recalls quickly
- Reduce food fraud victimization

**Growers**
- Prove sustainable growth practices
- Satisfy compliance requirements and connect with consumers
- During a recall, show that farm is not source of contamination
- Ease of connectivity to the downstream supply chain

**Food Service**
- Certify food sourcing practices
- Ensure safe food
- Reduce food waste

**Fundamental value from farm to fork**
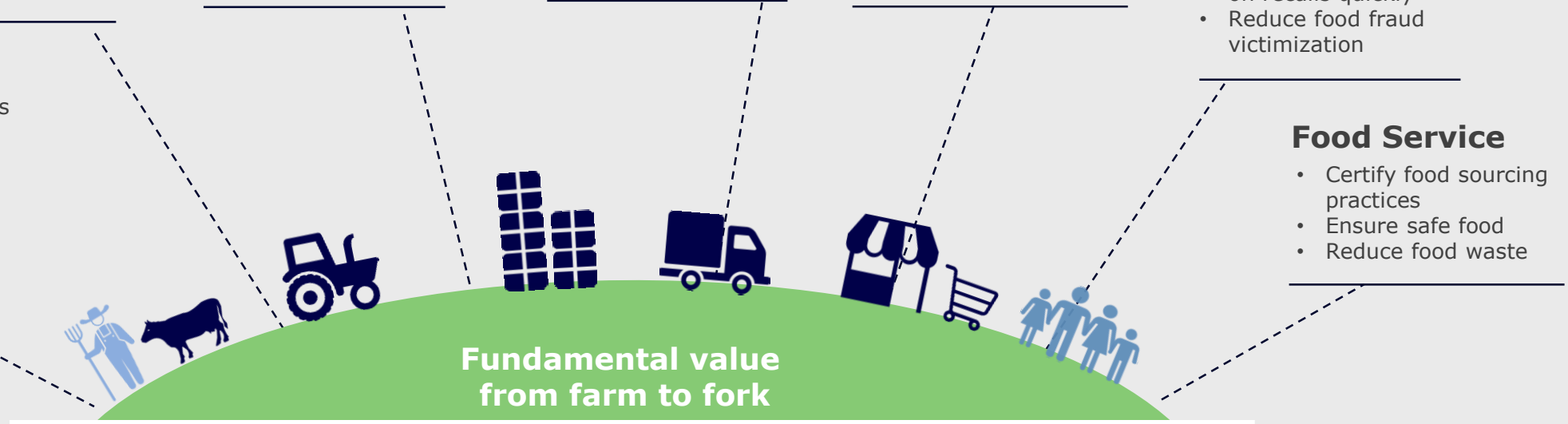
- Consumers demand more information on food than ever before
- Retailers lack easy access to this information and ways to share it with consumers

Results & Implications

- Improved brand trust and stronger relationships with consumers
- Plans to roll out to all quality brands globally by 2022

- *"Complicating this investigation, the majority of the records collected were either paper or handwritten."*
FDA Commissioner on 2018 romaine lettuce E. Coli outbreak
- Large amounts of data are collected during audits but never used because they are not documented and shared

Results & Implications

- Audit data was digitized, secured, permissioned, and shared via blockchain
- Opportunities for new analytics and insights on compliance data

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

Results & Implications

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

- Data needs to be at right level of granularity for particular insights (e.g. surgical recalls require data by lot)
- Harvest data is hard to capture and incorporate into the supply chain

Results & Implications

- Strawberry harvest data was captured at the lot level
- Store-level data was shared back to farm/supplier at the lot level for the first time
- Opportunities for new data analytics and insights

# Nestlé & Carrefour announce consumer access to Mousline (April 15, 2019)

## New QR code
## + smartphone scan
## + blockchain data

**Journey of the product from the Nestlé factory north of France to Carrefour stores**

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**Découvrez la traçabilité de votre produit**

**Renseigner votre numéro de lot**

9 ___ 0836A _

**Je découvre**

Trouver le numéro de lot

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Purée MOUSLINE

**Agriculteur partenaire**

**Jean-Luc,** installé à **28 km** de l'usine

Cet agriculteur fait partie de nos 165 agriculteurs partenaires. Il a livré l'usine de Rosières-en-Santerre au cours du mois précédant la production de votre lot. Un lot est composé à partir de la livraison de plusieurs agriculteurs.

**En savoir plus**

**Fabrication du produit**

Conditionnement le **19/03/2019**
Usine de **Rosières-en-Santerre**

Votre produit a été conditionné sur la **ligne de production A** et mis dans son étui en carton recyclé fourni par **GPI**.

**Processus de fabrication**

**Contrôle qualité**

Validation de la conformité du lot le **27/03/2019**
Par **Laura**

Cette purée est passée par 4 étapes de contrôle :
1 / A la réception des pommes de terre
2 / Au cours de la fabrication du flocon
3 / Au cours du conditionnement
4 / En laboratoire (goût, couleur)

**Stockage et distribution**

Réception dans les entrepôts Nestlé à partir du **29/03/2019**
Envoi vers les entrepôts Carrefour à partir du **08/04/2019**
Entrepôt **Nestlé**

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**Pommes de terre**

Pommes de terre **100%** Origine France

**PRÉFÉRENCE**

**En savoir plus sur notre filière**

**Variétés de pomme de terre livrées le mois précédent la production**

Autres variétés 37.7%
Asterix 34.4%
Fontane 13.7%
Bintje 14.3%

Le mélange de ces différentes variétés dans chaque sachet garantit une purée au bon goût de pomme de terre et à la qualité optimale.

**En savoir plus sur nos pommes de terre**

Découvrez en image la récolte des pommes de terre

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# CARREFOUR ET NESTLÉ LA TRANSPARENCE ÇA SE CULTIVE !

**La blockchain une solution innovante pour plus de transparence sur la traçabilité alimentaire.**
Base de données numériques qui regroupe toutes les informations et les interventions effectuées par l'ensemble des acteurs de la filière. Carrefour et Nestlé sont membres d'IBM Food Trust et collaborent ensemble sur la traçabilité alimentaire.

## D'où vient cette purée MOUSLINE®* ?

En scannant le QR code présent sur l'emballage de la purée MOUSLINE®, le consommateur accède en toute transparence à une interface lui permettant d'obtenir des informations sur toute la chaîne de production du produit.

**DANS LES CHAMPS**

Les pommes de terre sont cultivées majoritairement dans la Somme par 165 agriculteurs partenaires affiliés à Nestlé.

**Infos disponibles**
• Variétés de pommes de terre
• Agriculteur partenaire

**DANS L'USINE DE PRODUCTION MOUSLINE®**

Les pommes de terre sont transformées et conditionnées dans l'usine de production MOUSLINE®, à Rosières-en-Santerre, dans la Somme, à proximité de leur lieu de récolte pour la majorité.

**Infos disponibles**
• Fabrication
• Contrôle qualité

**EN MAGASIN**

**DANS L'ENTREPÔT NESTLÉ**

Les produits sont ensuite stockés, dans les 2 entrepôts Nestlé, situés à Fontenay-Trésigny et Saint-Georges-d'Espéranche, avant d'être livrés chez les distributeurs.

**DANS L'ENTREPÔT CARREFOUR**

Les produits arrivent dans les 25 entrepôts Carrefour. Ils y sont stockés avant d'être livrés dans les différents magasins.

Good Food, Good Life
IBM Food Trust™

"MOUSLINE" Nature 520g

# IBM Food Trust has a rich set of APIs to deepen the ecosystem and grow its value for our clients and partners



## Primary Client
### Use Cases

- Consumer engagement
- Supply chain management
- Inventory management
- Freshness and shelf life extension
- Operational efficiency
- Dispute resolution

## Third-Party
### Integrations

- Smart contracts
- Consumer apps
- Supply chain management apps
- Temperature monitoring
- Industry group applications

– Today, cold chains are not fully optimized to preserve food quality and extend shelf life

– Restaurants are increasingly competing on freshness

Results & Implications

– Increased efficiency

– Stronger inventory oversight and improved quality management

– Instant traceability and more precise recalls

"Food fraud is on the rise. With complex supply systems, and a global lack of transparency we are seeing too many examples of mislabeling and poor quality products entering the marketplace,"

Retailers around the world will be able to see this data and trace it in every stage so that they can ensure the quality of the shrimp, including confirmation it is zero antibiotic approved and certified to the Aquaculture Stewardship Council (ASC) Standard, and with neutral impact on local water quality.

Willingness to create a sustainable coffee industry by addressing fair wages to farmers and personalized consumer engagement to the brands.

Results

Production-ready circular economy platform. Blockchain knitting together the physical, document, and transaction layers.

The consumer APP provides access the point of origin of the coffee's supply chain & allows the consumers to "tip" the farmer or donate to the local village for schools, clean water, solar panels, and other programs.

## Food safety

Trace food instantly – with end-to-end supply chain data visibility – to help ensure food safety and regulatory compliance.

PDF  Learn more (919KB)

## Supply chain efficiencies

Access a shared and immutable digital ledger in real time – rather than ink on paper – to find choke points and uncover opportunities to speed your supply chain.

PDF  Learn more (825KB)

## Food freshness

Gain instant and efficient food tracing from source to consumer to more accurately judge peak freshness and remaining shelf life – and reduce product loss.

PDF  Learn more (322KB)

## Sustainability

Rely on shared data and an immutable ledger to help ensure the promised quality of products and that food comes from a sustainable source.
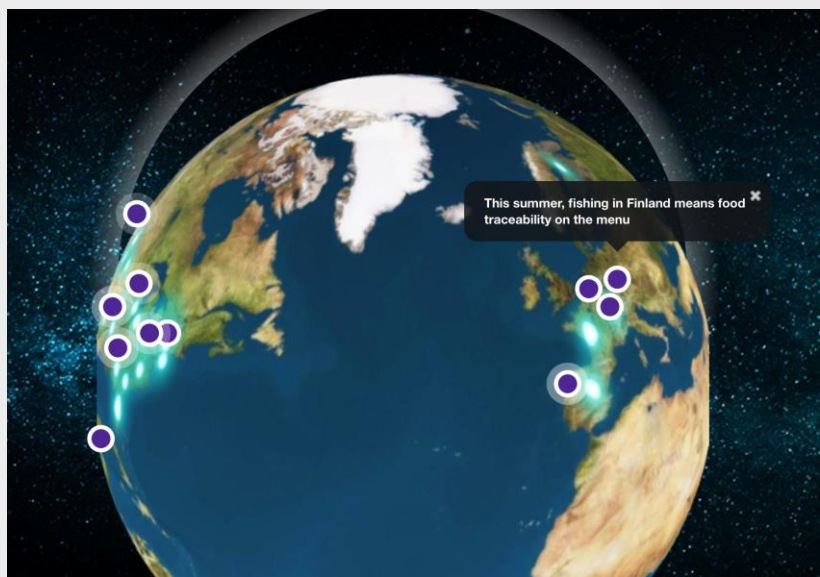
PDF  Learn more (754KB)
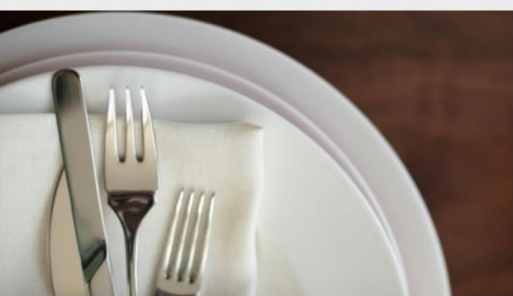
## Brand trust

Gain a competitive advantage as you add transparency and specificity about the sourcing of your food products. Build trust in the safety and quality of your brand.

## Food waste

Identify waste hot spots and speed responsiveness using better visibility into your food supply chain. Reduce costly food waste and boost your bottom line.

## Food fraud

Data-sharing across the food supply helps eliminate chances for fraud and errors – and can help preserve the integrity of raw materials, products, and packaging.

This summer, fishing in Finland means food traceability on the menu