

The background features a vibrant, multi-colored gradient. It starts with a dark blue on the left, transitions through purple and magenta, and then into bright orange and yellow towards the right. A diagonal line separates a darker blue area at the bottom from a lighter blue area at the top.

AWS  
re:Invent

I O T 2 1 6 - S

# The circular supply chain, and the drive for sustainability

## **Christine Leong**

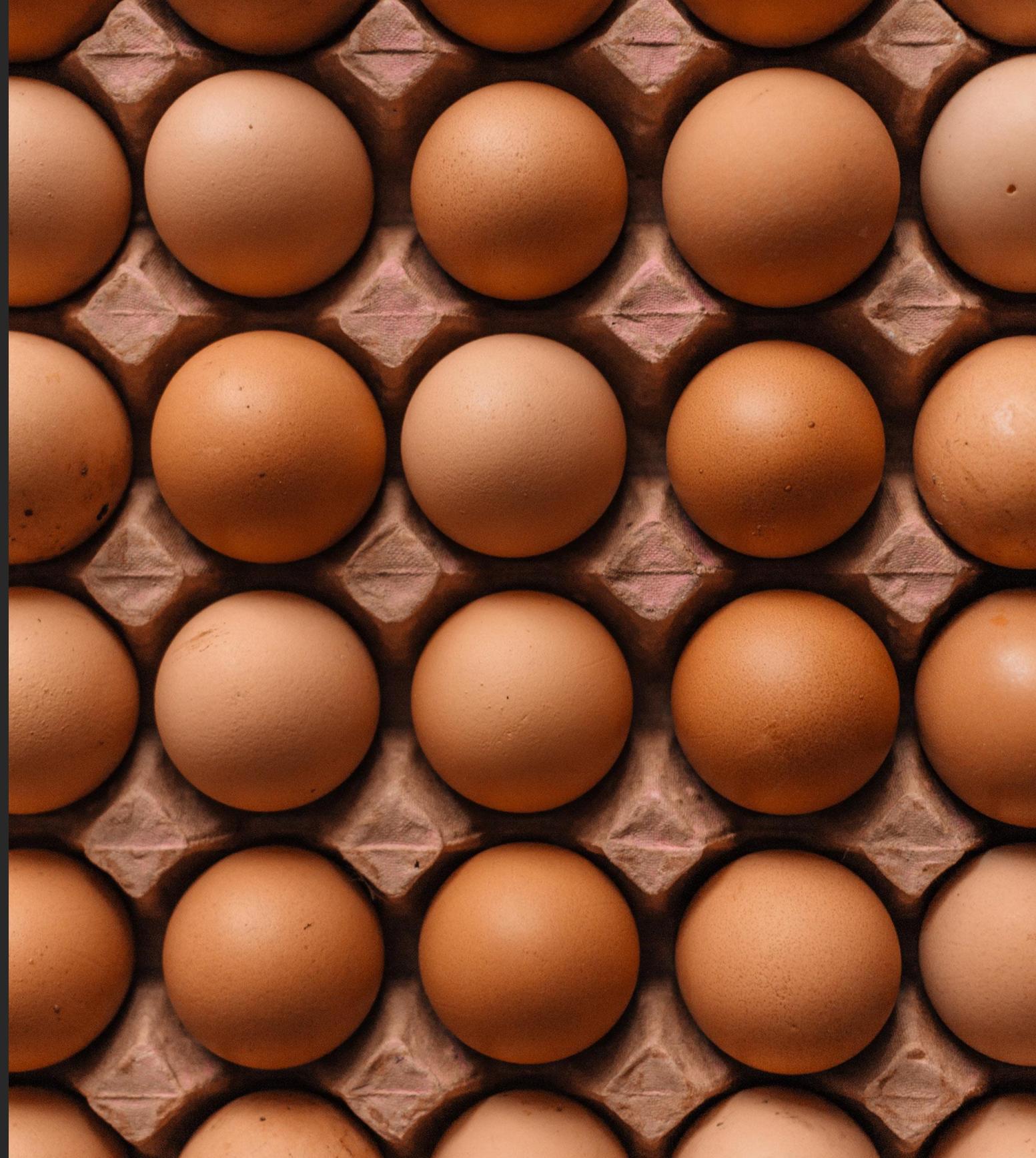
Managing Director,  
Accenture Security  
Blockchain & Biometrics

## **Leandro Nunes**

Vice President,  
Product Development  
Mastercard Labs

In Europe alone, 29 million tons of dairy products are lost or wasted every year. This is equivalent to 574 billion eggs.

**Source:** [FAO](#)



In Thailand, over 90 percent of surveyed workers at seafood processing plants reported going without enough food in the previous month. Of those, 54 percent of the women workers said there had been no food to eat at home of any kind on several occasions in that time.

**Source: OXFAM**



Beyond global warming and human health impacts, palm oil production takes a toll on biodiversity and human rights. Only about 15 percent of native animal species can survive the transition from primary forest to plantation, with orangutans, tigers, rhinoceros, and elephants being the most vulnerable to such expansion.

**Source: UCSUSA**



It's estimated that for every cup of coffee consumed, one square inch of rainforest is destroyed.

**Source: Ohio State Pressbooks**



## **World Wildlife Fund**

“Tracing the Supply Chain” is a study that explores the feasibility of blockchain to enable transparency in beef, soy, tuna, and shrimp.

**Source: Accenture**



# Imagine... a new generation of fairer trade now

A small-scale farmer produces about 500 pounds of Fair Trade organic coffee a year and gets around **\$1.30** a pound, or \$700 a year, for coffee that can retail in the US for **\$20 per pound**.

**Source: Forbes**



Consumers often feel  
like there's little they  
can **do** or **trust**



# But consumers are changing how they buy food

## Socially conscious consumers are sensitive to retailer values

 2/3 feel that “large changes are needed in the way food is produced and consumed”

 73% would actively switch to a brand with a social purpose

## Transparency & authenticity consumers are interested in the origins of the food

 9 in 10 rate ingredient transparency as important for companies to address

 \$4 billion+ invested in food traceability technologies in North America



## Food for health consumers are actively looking to food to manage their health

 “Food with a function” is a top Google food search

 57% are eating more natural and fresh foods

## Trust is a competitive linchpin in the battle for food dollars

 1/3 of US consumers rank trust as a top-three purchase driver

 6 in 10 US consumers refuse to buy products and services from companies they do not trust

# To change the practices at smallholder level, the right incentives are needed

In complex supply chains, smallholder producers are often stuck in a cycle of subsistence farming because they receive a paltry slice of the economic pie. Markets for sustainably certified products are in high demand, with high premiums, but incentives for producers are misaligned.

Need to make a living and support family; often very limited access to basic services



Lack of awareness that sustainable practices matter – it comes secondary to making a living



No ability to control prices no matter how much they produce



Prices received do not reflect what the consumer pays



Consumer demand and interests are opaque, leading to overproduction or poor practices



# Circular supply chain advantage

Blockchain technologies address challenges of provenance, authenticity, and traceability



**Supply chain  
transparency & efficiency**



**Sustainable  
practices**



**Empowerment & more  
informed decisions**

## Our values

**01**

Prove authenticity  
and provenance  
of products

**02**

Reduce global waste  
through supply chain  
transparency

**03**

Enable financial  
inclusion and  
improve livelihoods

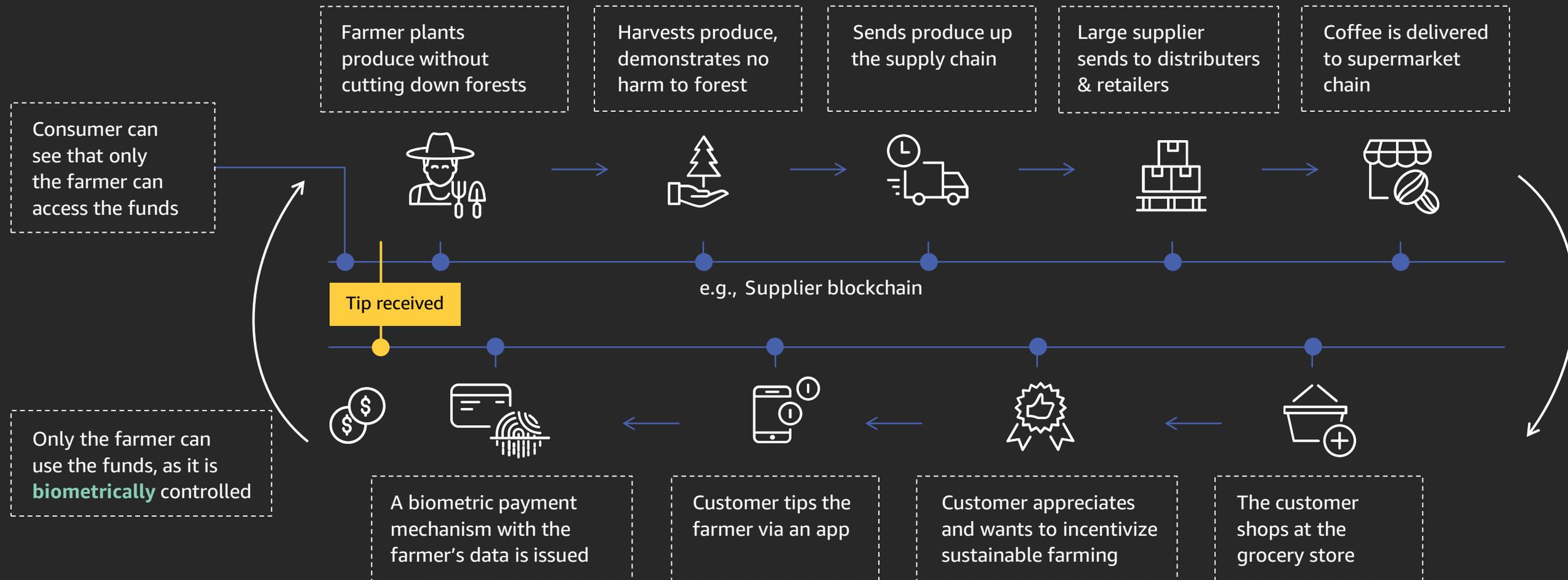
**04**

Empower consumers  
and producers  
through choice

# How it works

Sustainability is a top agenda item for many companies. Blockchain enables transparent and complete supply chain traceability. Eco-conscious consumers can be sure of where their products come from and can also enable financial inclusion with direct and positive support to each provider individually.

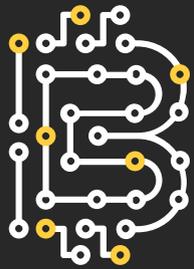
## Farming example



# Combining capabilities

The rise of digital is creating innovation within the financial inclusion space, helping drive new business models that are tapping into diverse consumer markets and providers.

Accenture's circular supply chain solution leverages a few capabilities.



## Blockchain in supply chain

Provides **transparency** to **confidently share** access to the same data and information



## Digital identity & biometrics

Verify **attestations** of **producer's** and **product's identity**



## Biometrically enabled payments

Payment mechanisms to **reduce** and **optimize** cash flows

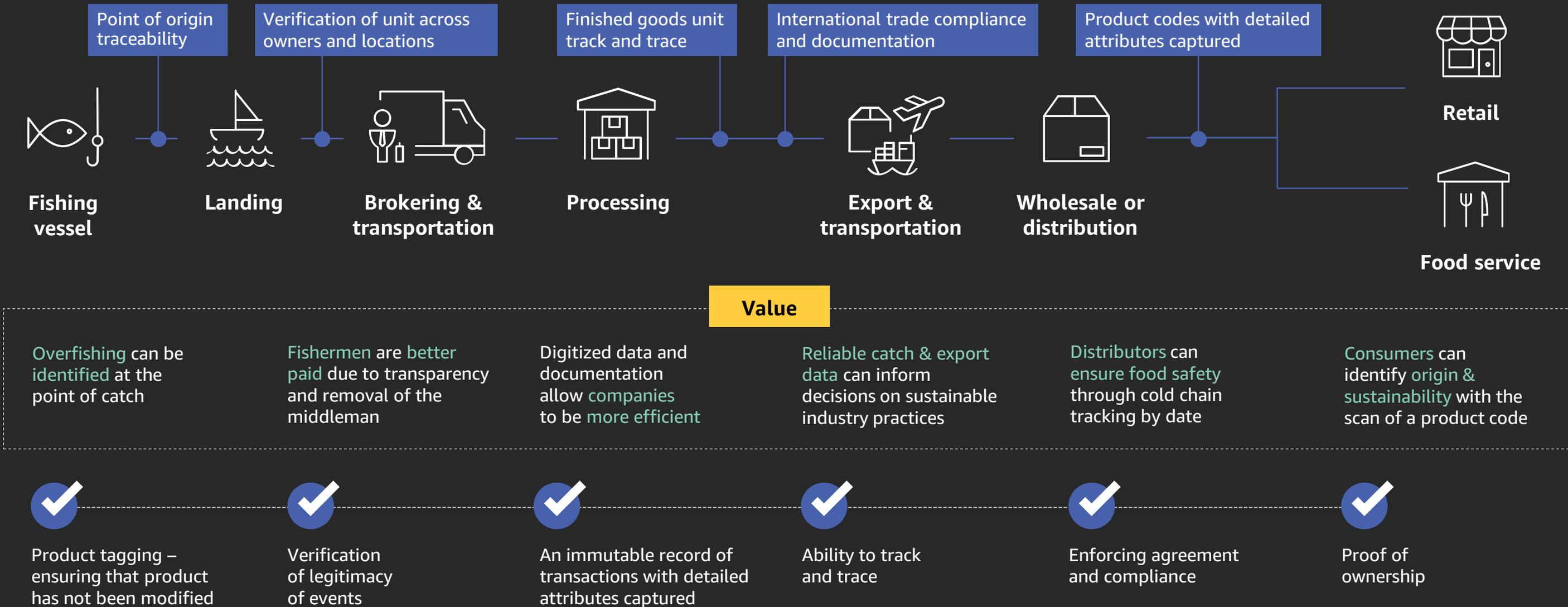


## Digital

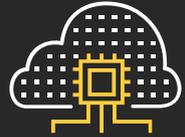
**Digital transformation** will have a significant impact; e.g., IoT, connectivity, etc.

# Blockchain opportunities in supply chain

Blockchain solutions can address pain points throughout a fish supply chain in a single, distributed ledger



# IoT is a rapidly evolving technology with immense potential



The Internet of Things (IoT) is the network of physical objects that contains embedded technology to communicate and sense or interact with the objects' internal state or the external environment

## IoT can help businesses, governments, and consumers (illustrative)

### IoT for business

**Production** – Smart factory, precision farming, smart meter

**Customer involvement** – Wearable fitness trackers, usage-based insurance

### IoT for government

**Connected cities** – Traffic congestions, smart lighting, smart parking

**Weapons** – Control of military equipment through drones and robots

### IoT for consumers

**Smart home** – Smart appliances, utilities management, security and safety management

**Connected car** – Self-driving cars, preventive maintenance

## IoT growth is underpinned by rapidly evolving technology components

### Connected devices

The connected devices market is estimated to grow from 6 billion devices in 2016 to 21 billion by 2020

(Source: Gartner)

### Sensors

The market value for sensors that translate physical information into data is estimated to grow at a 33.6% CAGR from 2018 to 2023

(Source: Markets and Markets)

### The cloud

Cloud applications may account for 90% of total mobile data traffic by 2019 compared with 81% at the end of 2014

(Source: Cisco)

### Network connectivity

Worldwide household Wi-Fi connectivity is expected to grow 42% from 2015 to 2020

(Source: IDC)

# Opportunities and benefits



# Initial collaborators

Accenture has invested to create a fully **functional prototype**, and together with our initial collaborators, we are able to **accelerate pilot deployment** and **scale end-to-end solutions** no matter where you start in the supply chain.

As we grow, we are looking for additional companies to participate, invest, and grow the capability with us globally.



# Thank you!

## **Data-Driven, Powered by Cloud**

Competitive differentiation and growth in the Consumer Packaged Goods industry requires a range of new capabilities including hyper-personalization of products and services, an agile value chain, and smart manufacturing. To achieve these goals, companies need cutting-edge data analytics and AI, enabled by the AWS Cloud.

**FIND OUT MORE AT BOOTH #1714**

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**Join us immediately after the session to connect with our speakers and industry experts.**

**DATE:** Wednesday, December 4

**TIME:** 3:00PM – 5:00PM

**LOCATION:** **Retail and Consumer Packaged Goods Lounge**  
MGM Grand, Level 1, Expansion Foyer

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Please complete the session survey in the mobile app.