



AgTech and BlockChain

Smart Horticulture Asia

Dirk Jan Kennes
Hong Kong, 5 September 2018



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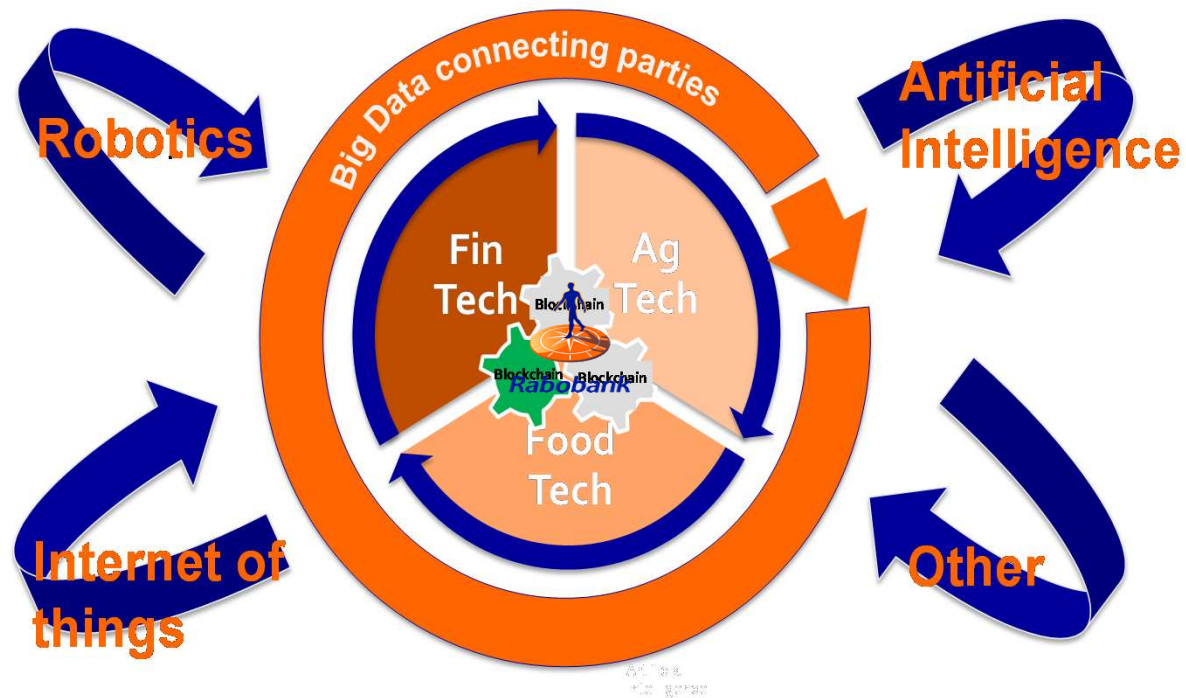


“Take **X** and apply **AI**”

— Kevin Kelly, founder
of **Wired Magazine**

Rabobank view

Development of new business models



F&A Know How

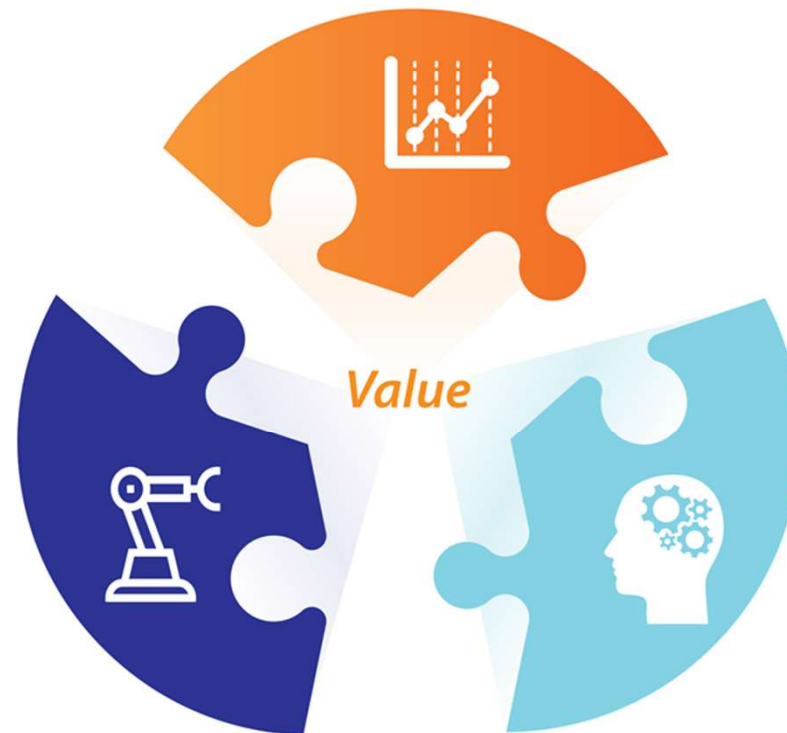
Capital

Community/Network

Data

The Digitalisation of Agriculture

Investments Needed to Create Value



The Digitalisation of Agriculture

Data Beats Money?



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AI Leaders

*SDV Leader
(Self-Driving Vehicles)*

Ag Tech Leader

R&D \$



Data



>1.3bn miles



100m acres

The Digitalisation of Agriculture

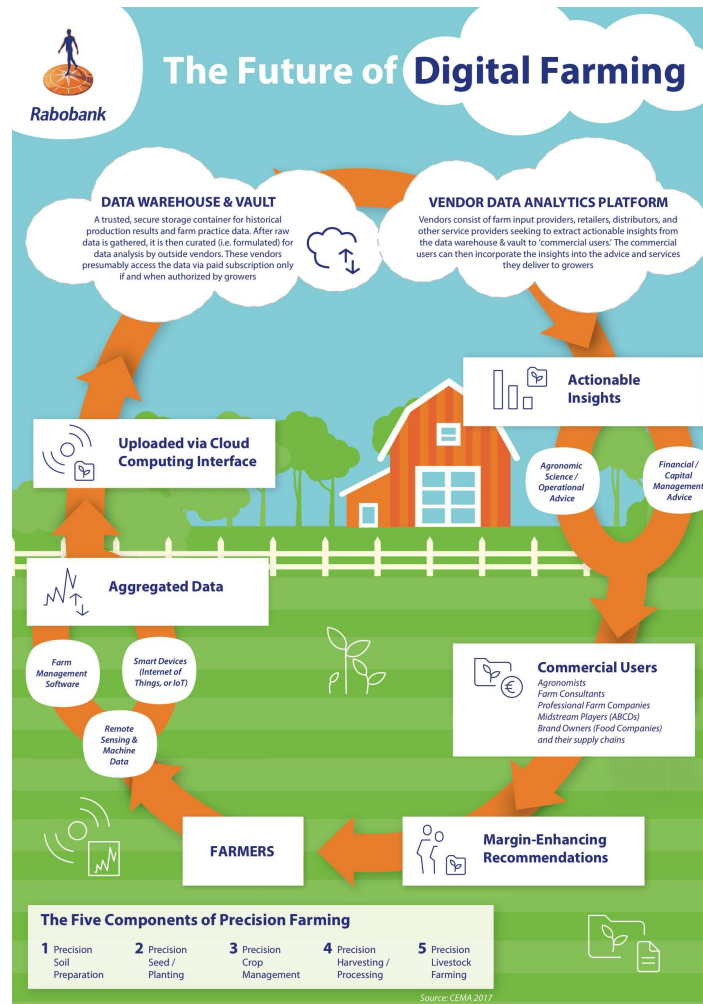
Is There a Need for AI in Agriculture?

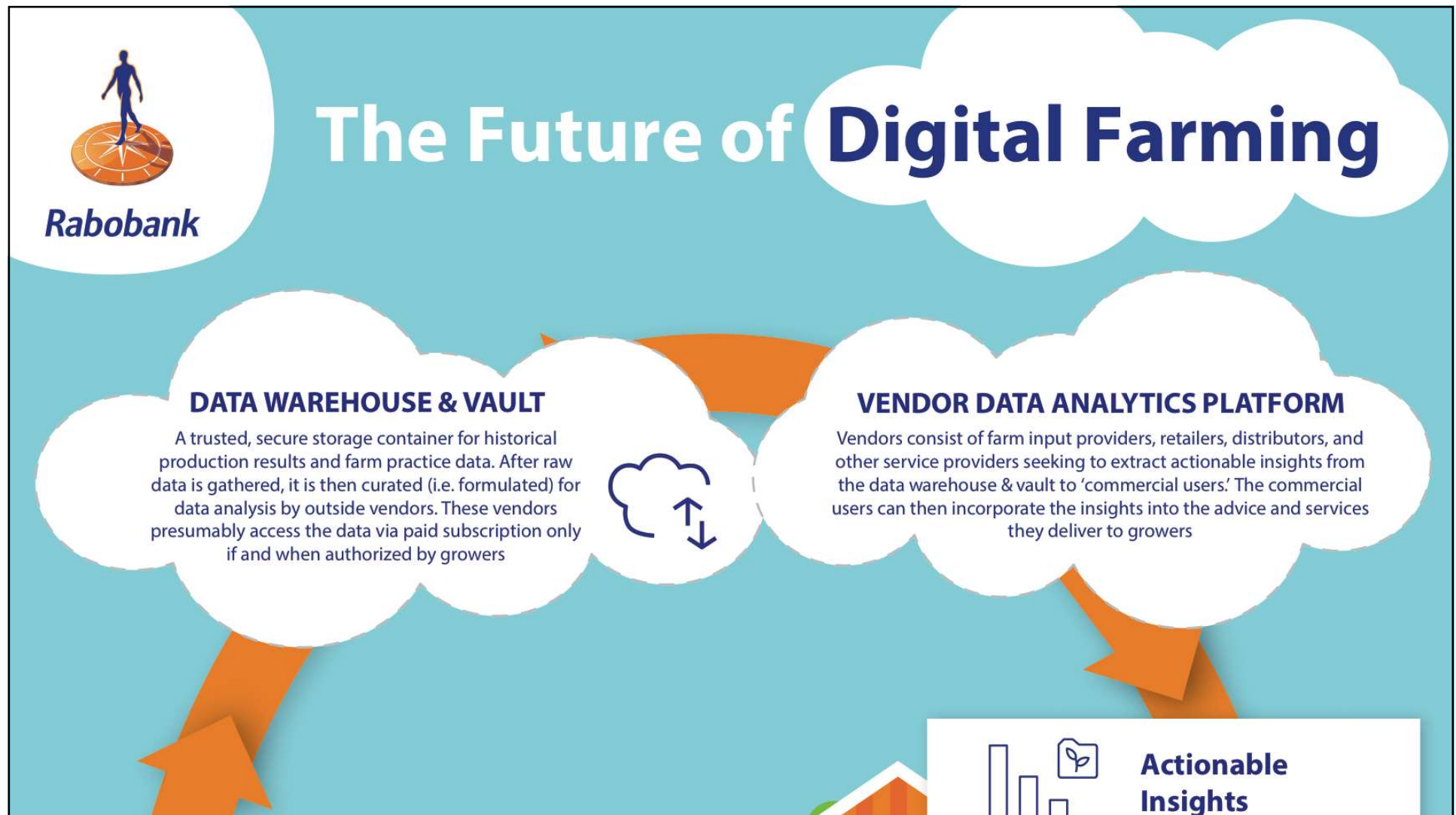


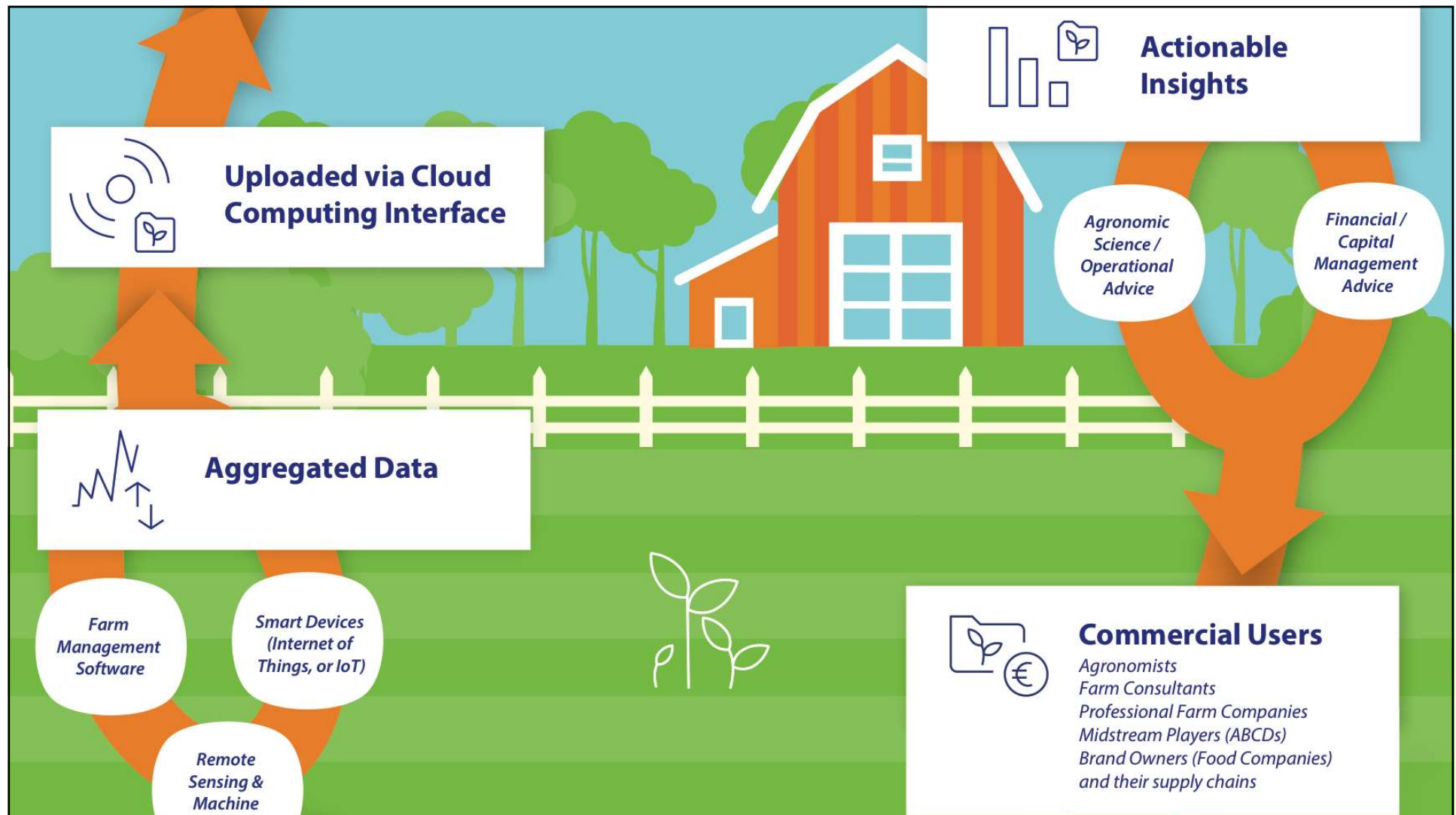
Downstream Efficiency

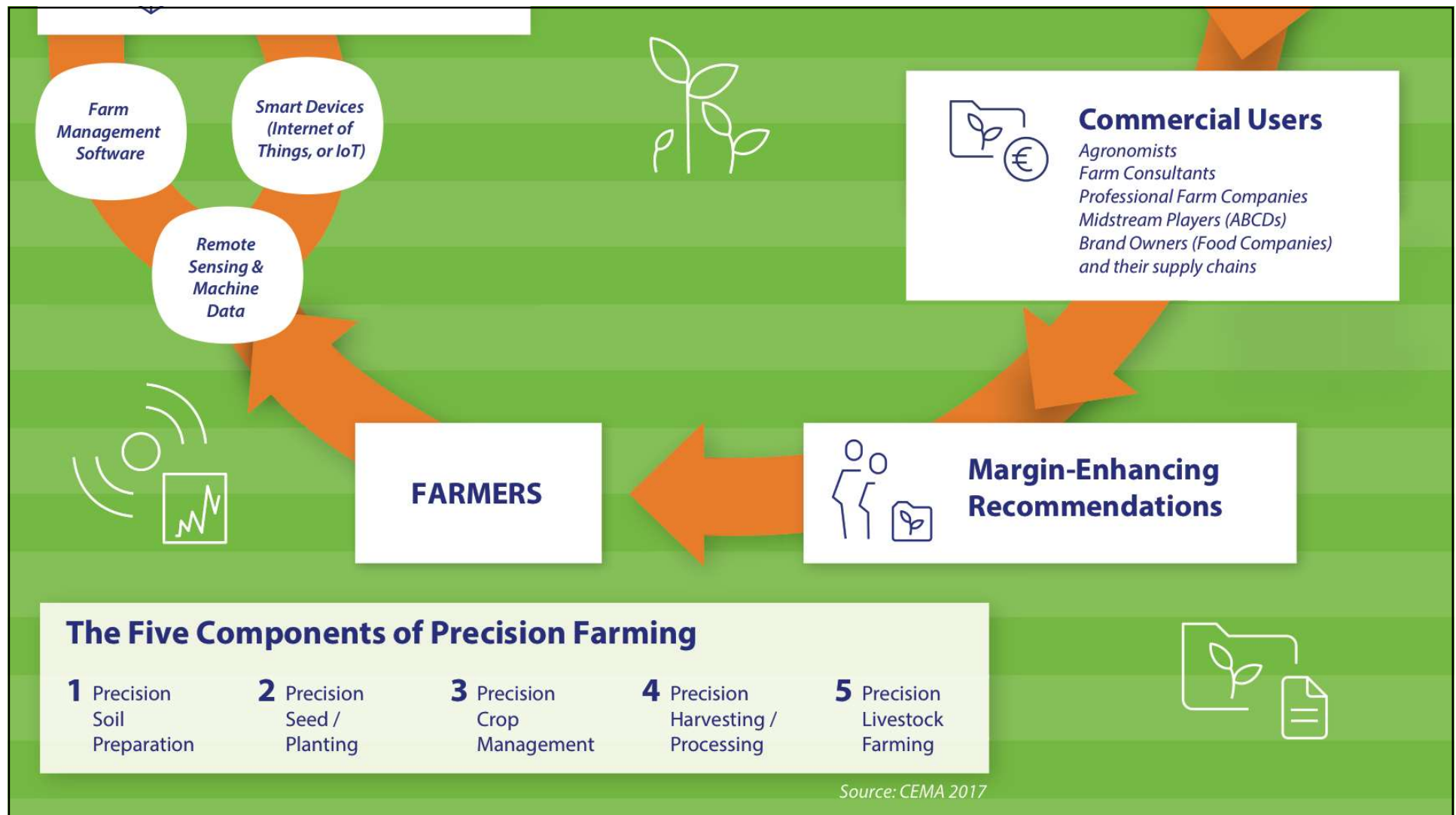


Waste Reduction



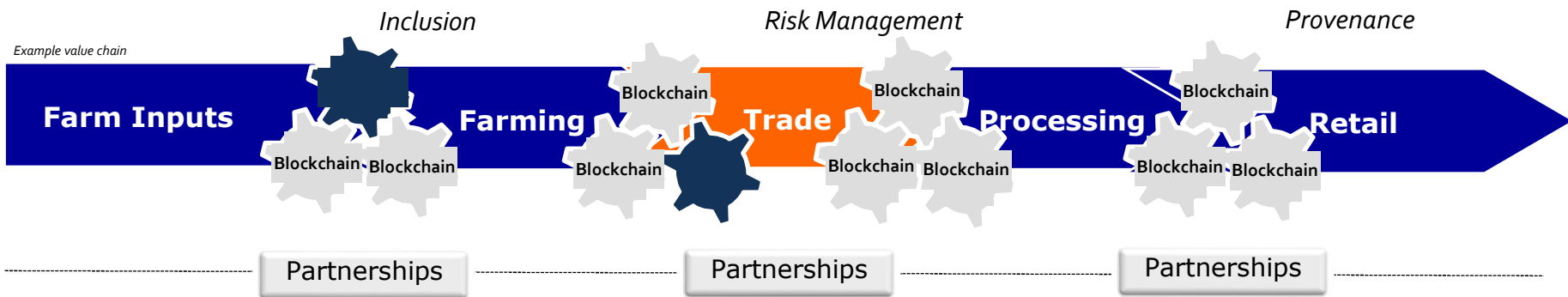






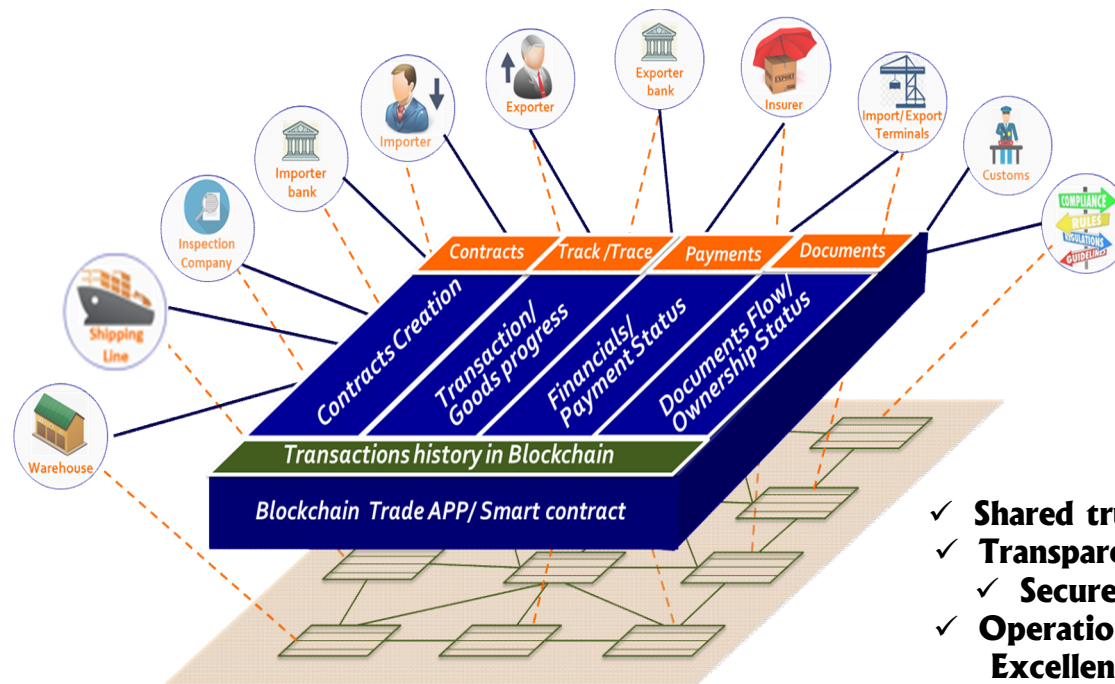
Digitalisation of the entire value chain

Connecting growers with consumers

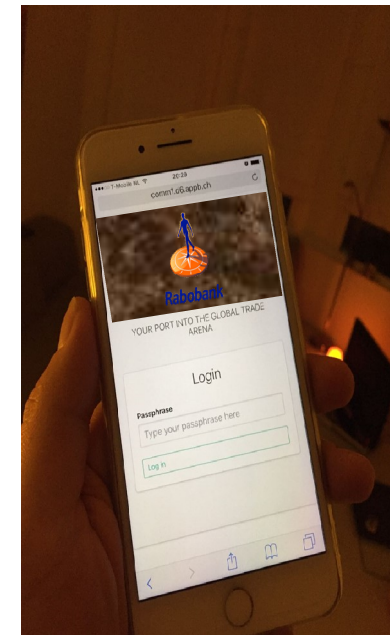


Blockchain easy explained

Internet v.2.0 adding the transactional and trust elements



- ✓ **Shared truth**
- ✓ **Transparent**
- ✓ **Secure**
- ✓ **Operational Excellence**
- ✓ **New business models**

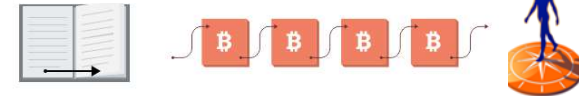


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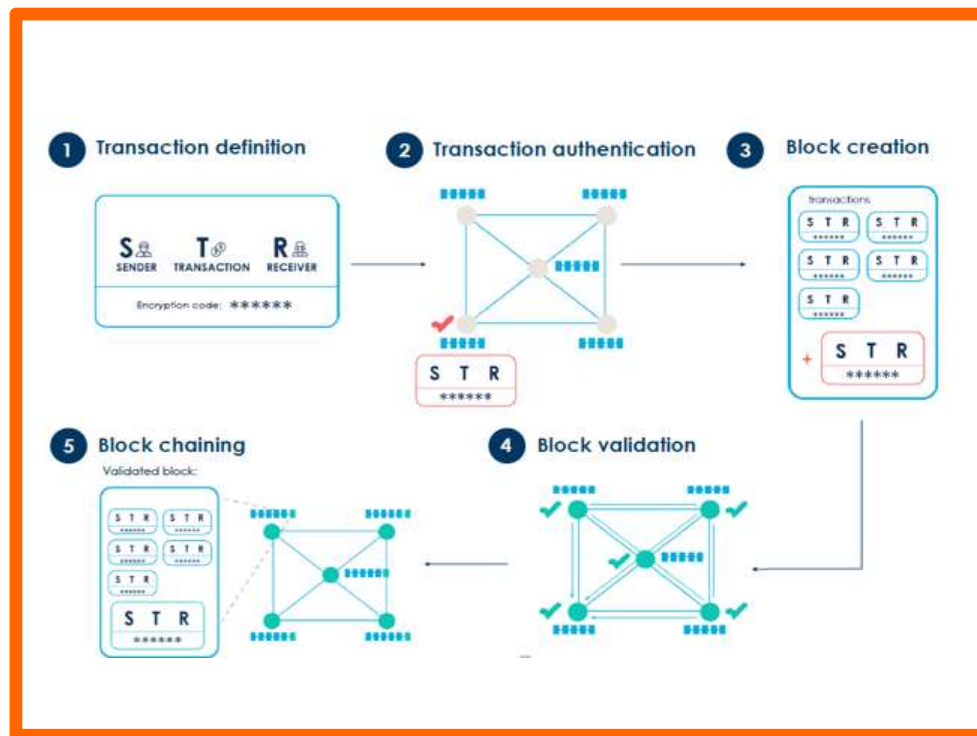
How Blockchain Works?

This whole process can be completed in less than 3 seconds.

Metaphor: It is a chain + Pages in a book



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Transaction definition

The "Sender" creates a transaction and transmits it to the network. The transaction message includes details of the Receiver's public address, the value of the transaction, and a cryptographic digital signature that proves the authenticity of the transaction.

2

Transaction authentication

The nodes (computers/users) of the network receive the message and authenticate the validity of the message by decrypting the digital signature. The authenticated transaction is placed in a 'pool' of sending transactions.

3

Block creation

These pending transactions are put together in an updated version of the ledger, called a block, by one of the nodes in the network. At a specific time interval, the node broadcasts the block to the network for validation.

4

Block validation

The validator nodes of the network receive the proposed block and work to validate it through an iterative process which requires consensus from a majority of the network.

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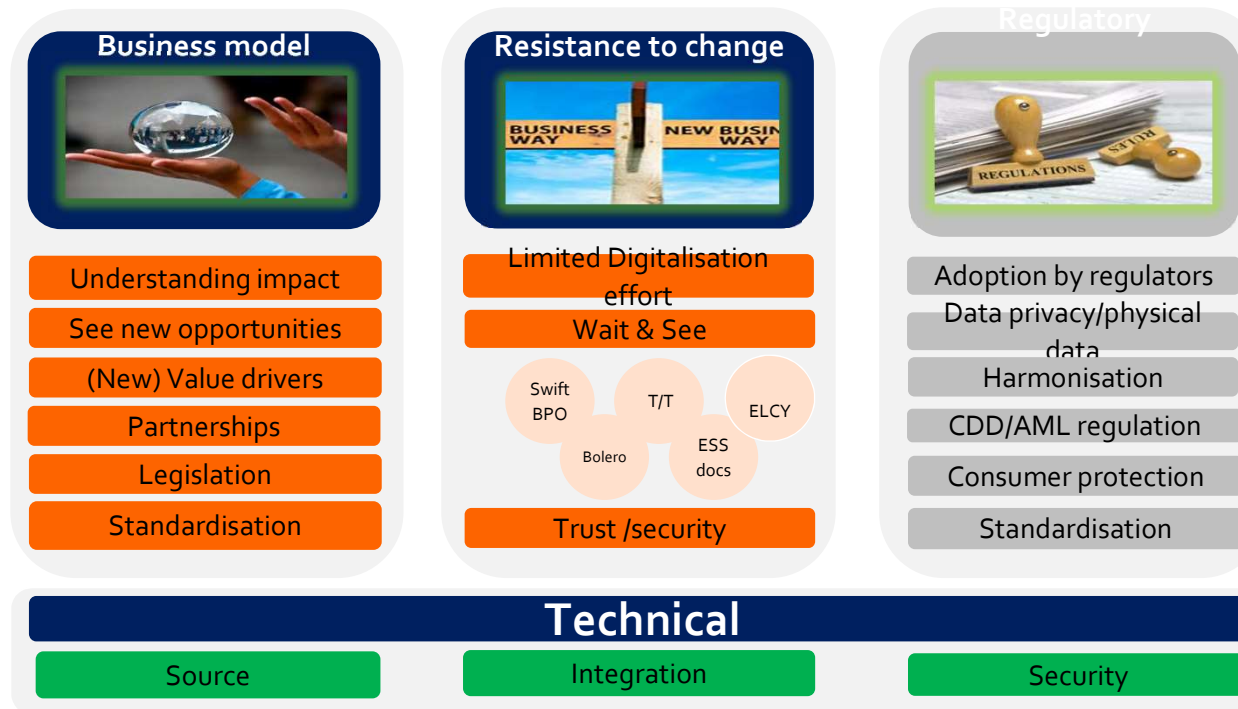
Block chaining

If all transactions are validated, the new block is "chained" into the blockchain, and the new current state of the ledger is broadcast to the network.



Blockchain Challenges

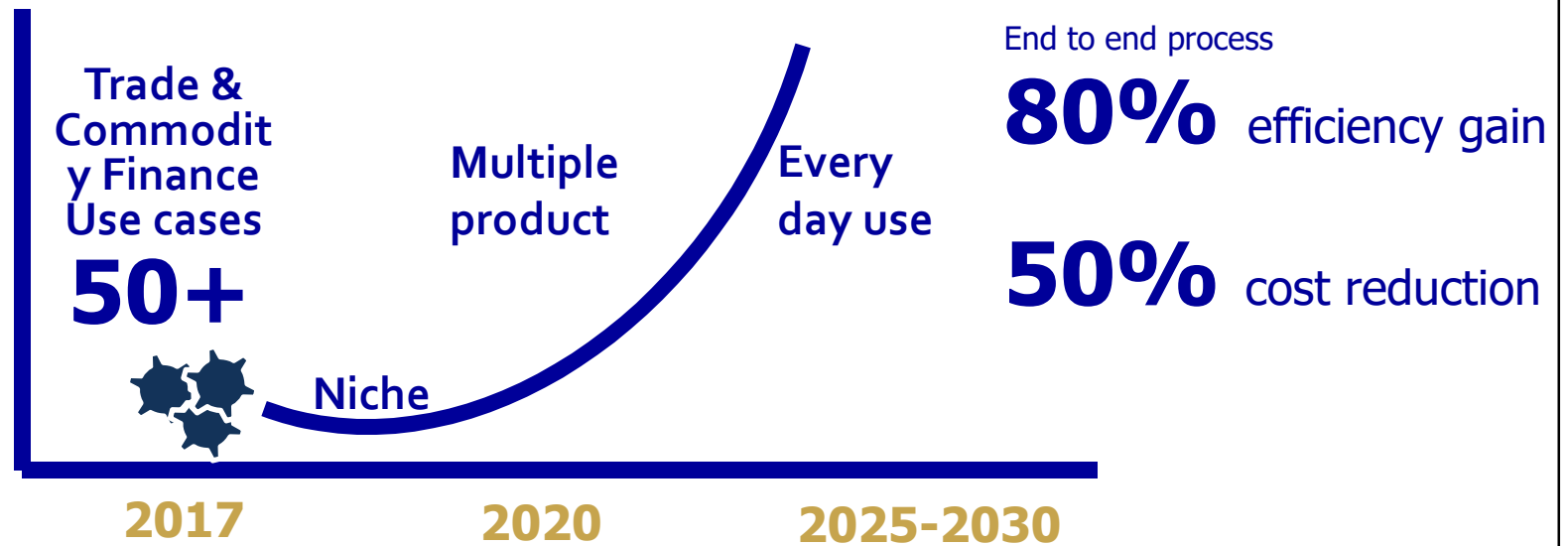
New business model, process redesign, resistance to change, interoperability, legislation



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Roadmap To Adoption

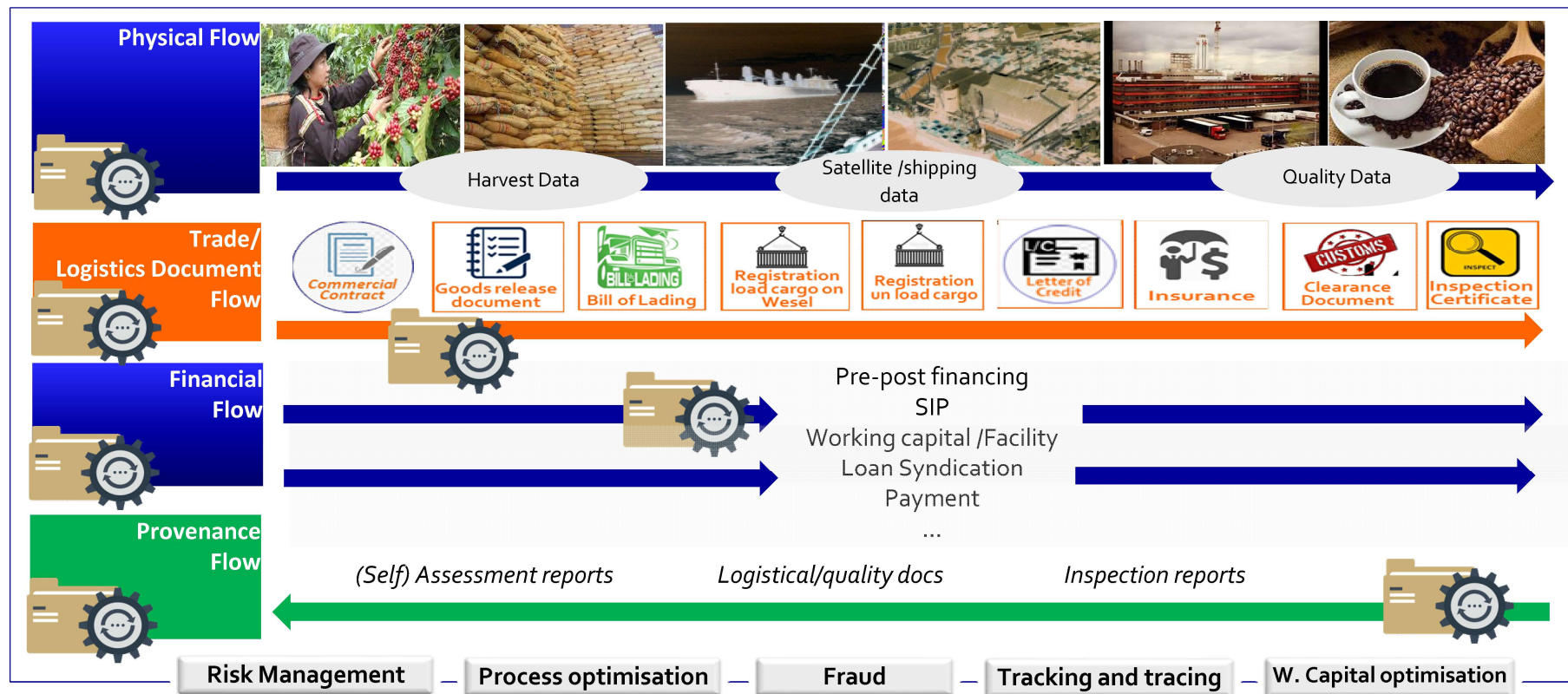
The future is already here





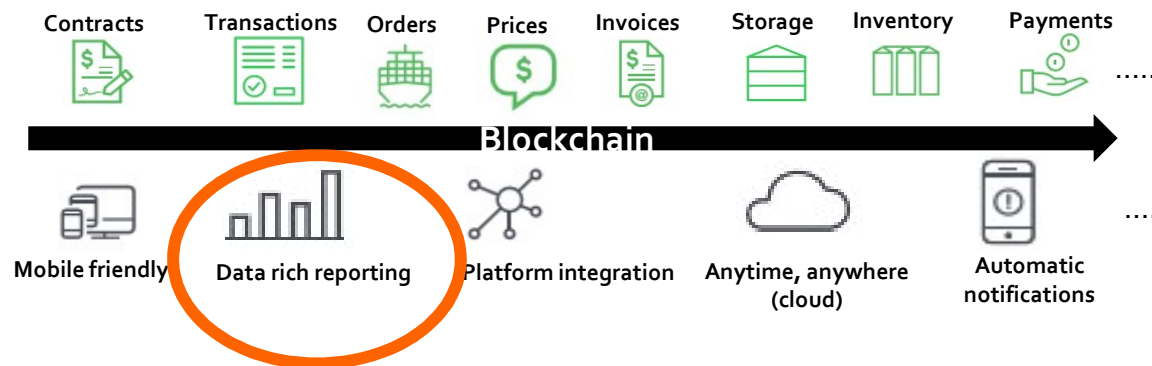
How Does It Work

Value chain approach



Digital Value Chain Banking

Blockchain based global grains...local F&V,... platform



- ✓ Benchmarking info
- ✓ Lower loan application costs/ price (bank more risk information)
- ✓ Reduced risk for the bank – transparency
- ✓ Optimise working capital along the chain



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F&A Value Chain

Blockchain benefits

Growers

- ✓ Can be paid immediately on delivery of their commodities
- ✓ Can benefit from capital optimisation
- ✓ Eliminating counterparty risk

Buyers

- ✓ Real-time overview
 - Price updates
 - Deliveries
 - Position management
 - Invoices and payments

Financiers

- ✓ Real-time visibility financed commodities
- ✓ Track and trace collateral/goods
- ✓ Lowering risk

Consumers

- ✓ Trace back where their food comes from
- ✓ Verified provenance stories about how food is produced, processed and transported



Smart Farming

Smart Trading

Smart Logistics

Smart Processing

Smart Consuming



Thank You for your attention

Dirk Jan Kennes

Global Sector Strategist- Farm Inputs

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