

Supply Chain Technology

Application in Agri-Food Supply Chain

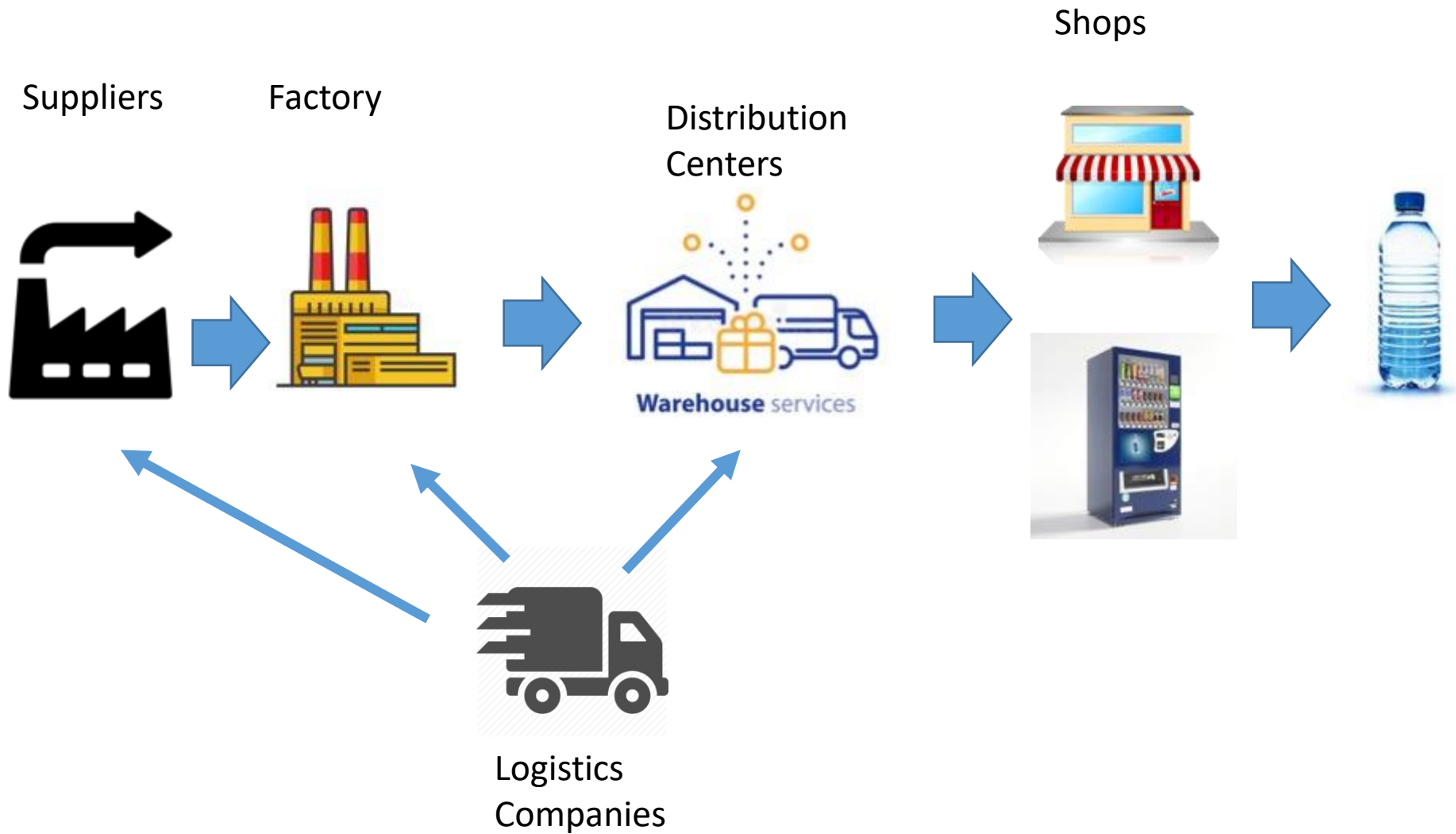
Dr. Imam Baihaqi

Dipresentasikan pada Webinar Nasional 2022: Smart Supply Chain Management

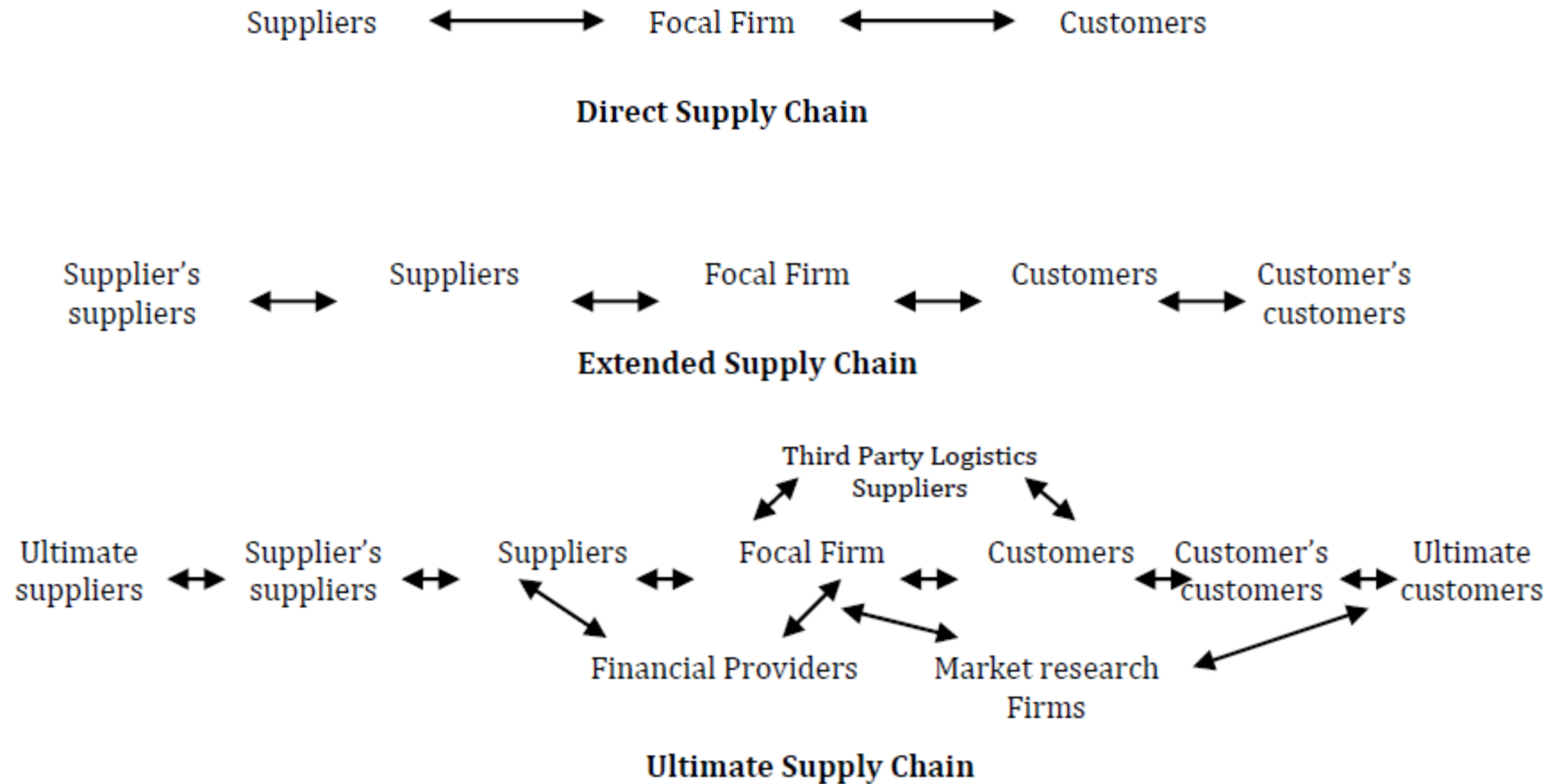
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What is a supply chain?



What is a supply chain?



(Mentzer et al., 2001, p. 5)

Supply Chain Management (SCM)

“..encompasses the **planning** and **management** of **all activities** involved in **sourcing** and **procurement**, **conversion**, and **all logistics management activities**.

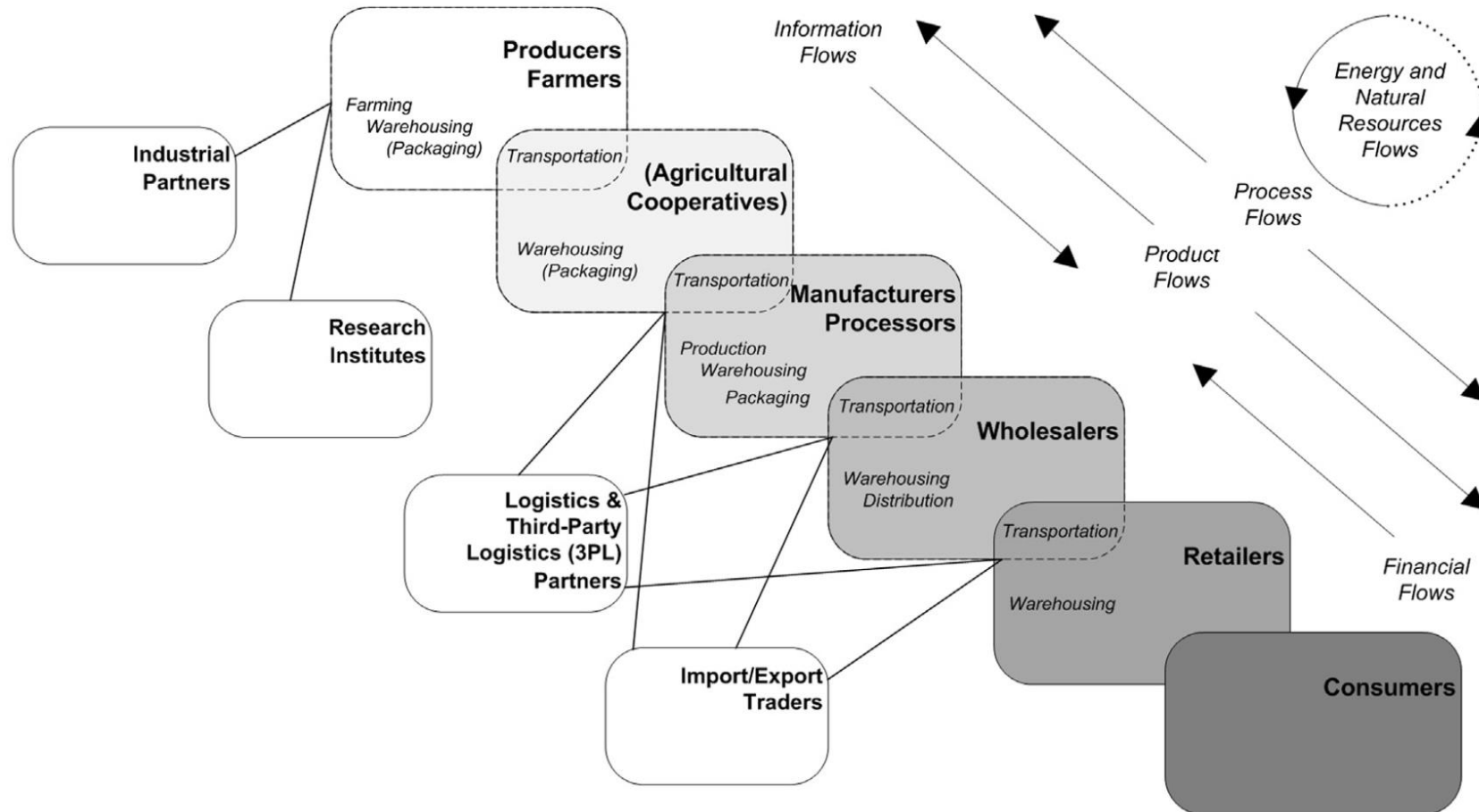
Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies.”

SCOR Model (Supply Chain Operation Reference Model)



Agrifood Supply Chain

a set of activities in a “farm-to-fork” sequence including farming



Agrifood Supply Chain is Unique



Perishability and product deterioration



Environment elements, including temperature and humidity, influence food quality, and therefore, the risk of product deterioration



Increased regulation and environmental pressure (e.g. traceability, sustainability issues)

The Challenge of Agrifood Supply Chain: Food Loss and Waste

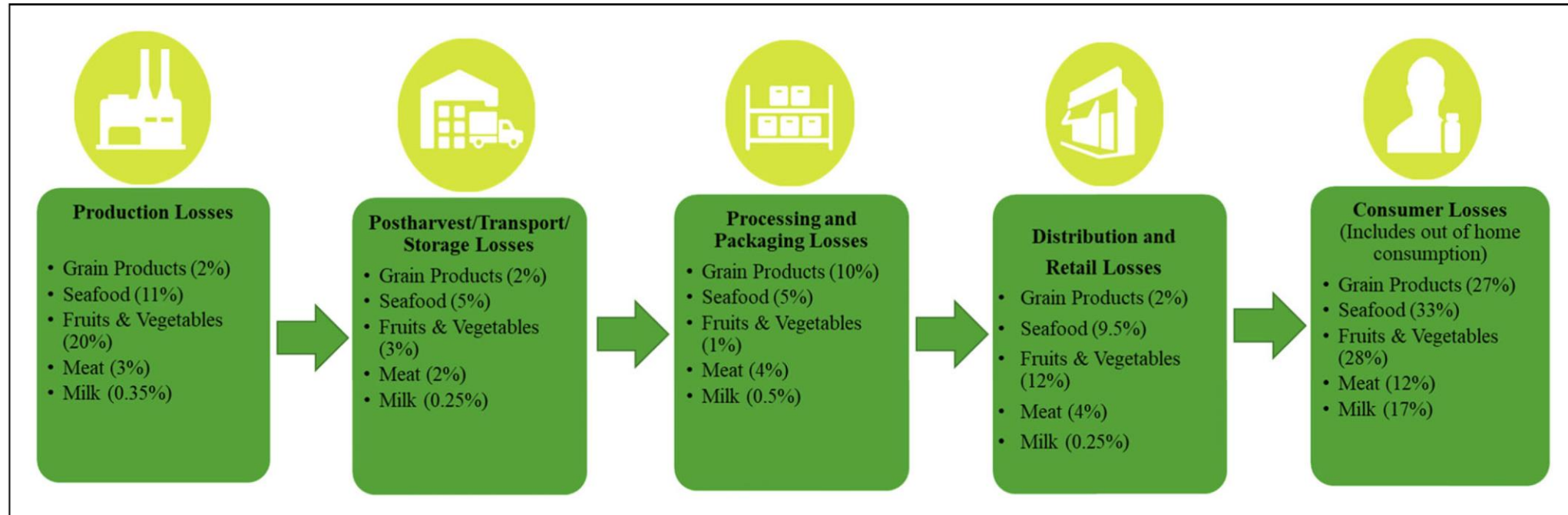
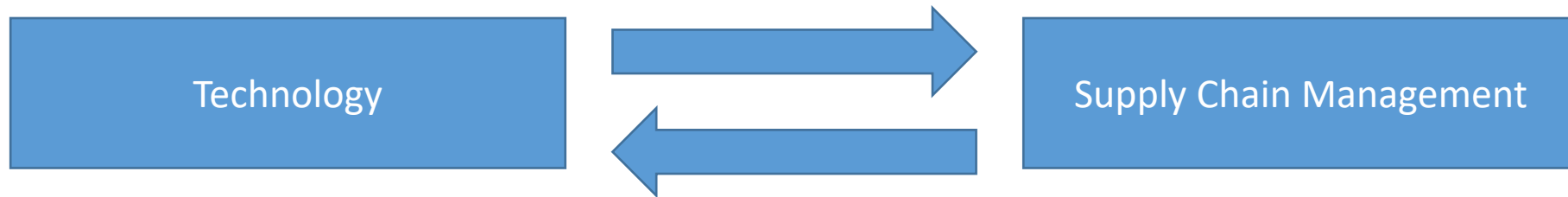


Figure 1—Food Losses at each step in the supply chain (Collectively for the US, Canada, Australia, and New Zealand; Source: WRI analysis based on FAO, 2011. Global food losses and food waste—Extent, causes, and prevention. Rome, Italy: UNFAO).

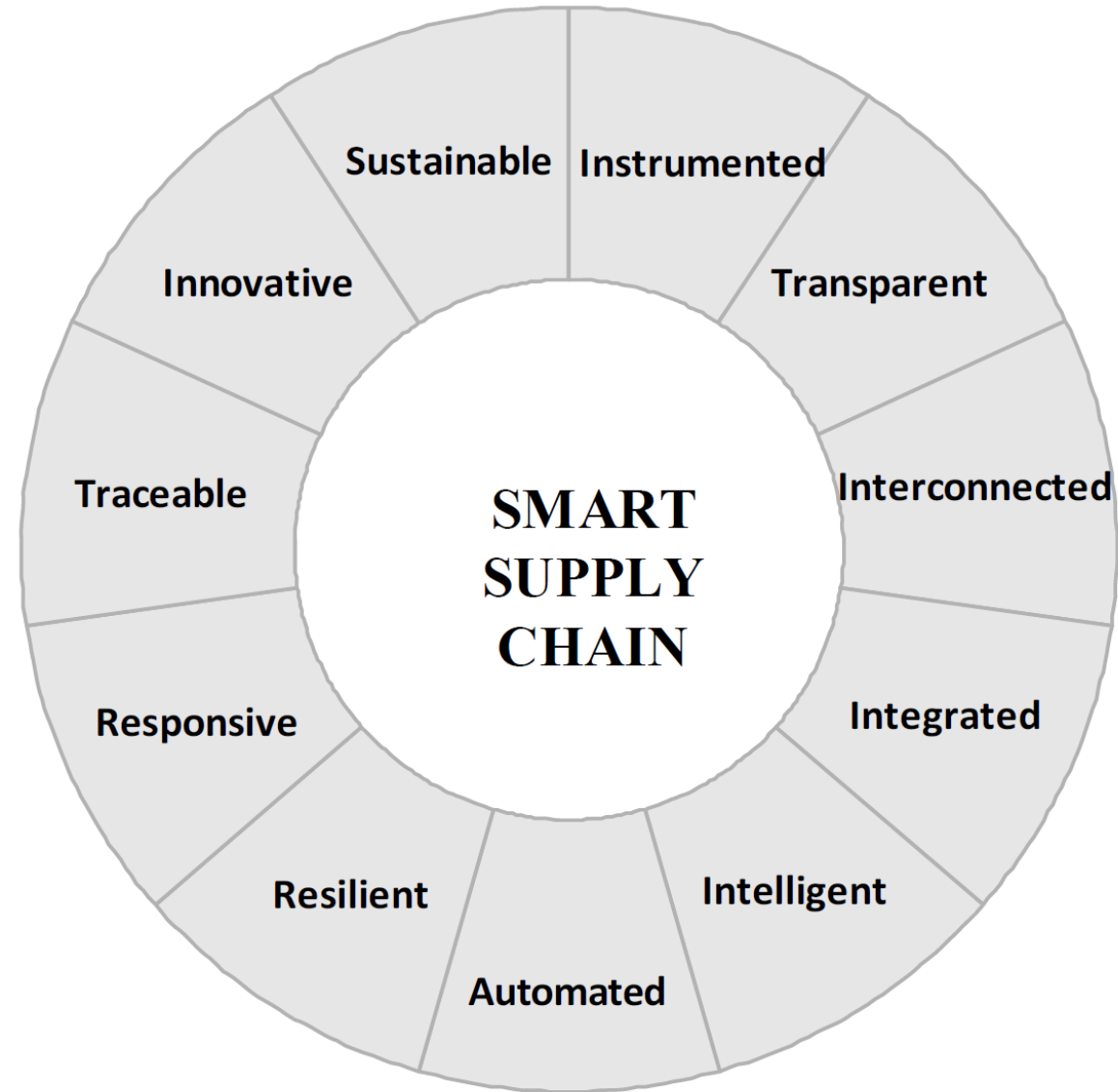
Technology drives the development of Supply chain management and the need for effective and efficient supply chain require innovation in technology



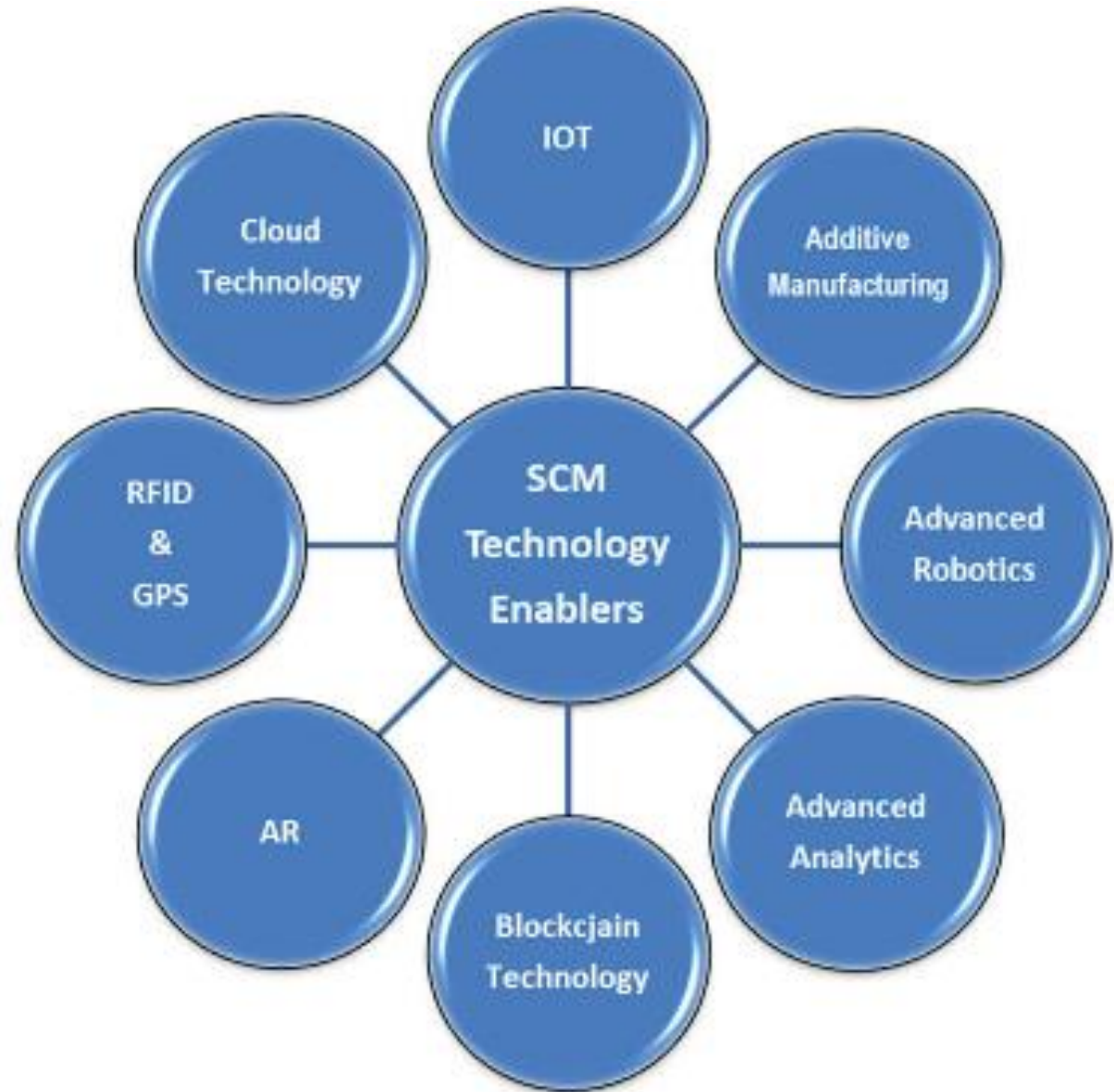
Smart Supply Chain

Smart supply chain empower the organisations by collecting unprecedented amount of information to solve issues quickly using advanced analytical capabilities and enhances traditional processes with machine intelligence, automation and other innovations to serve customers in an economical

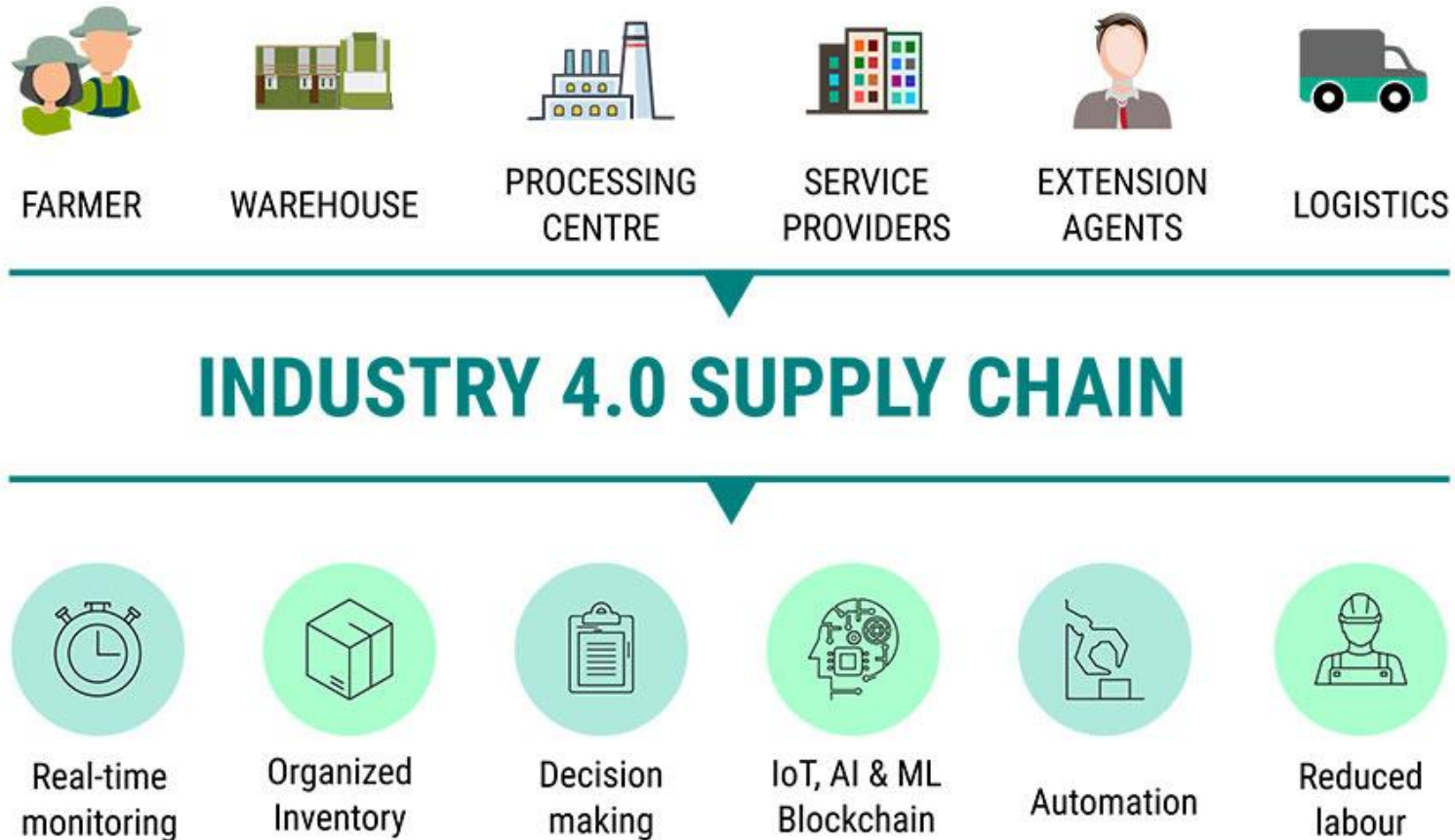
Characteristics of Smart Supply Chain



Digital technology Enablers

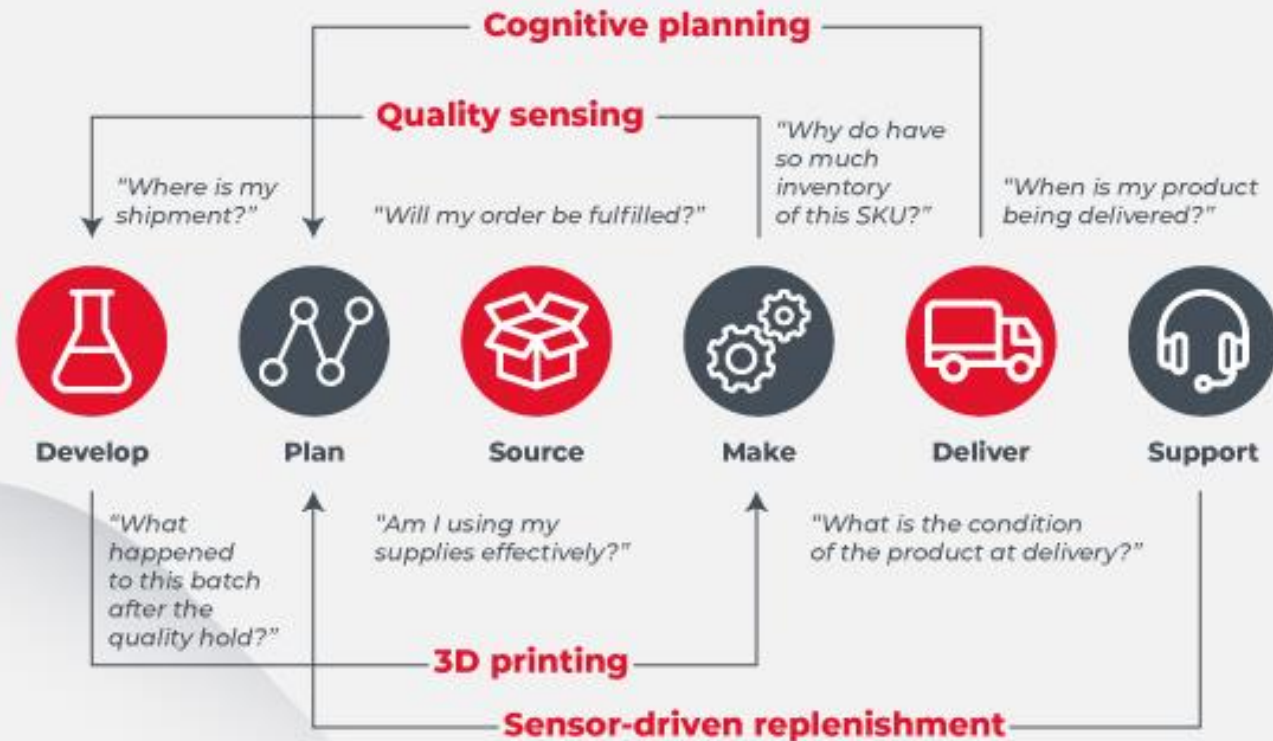


Industry 4.0 – Traceable Agri-food Supply Chains



Traditional supply chain vs Digital supply networks

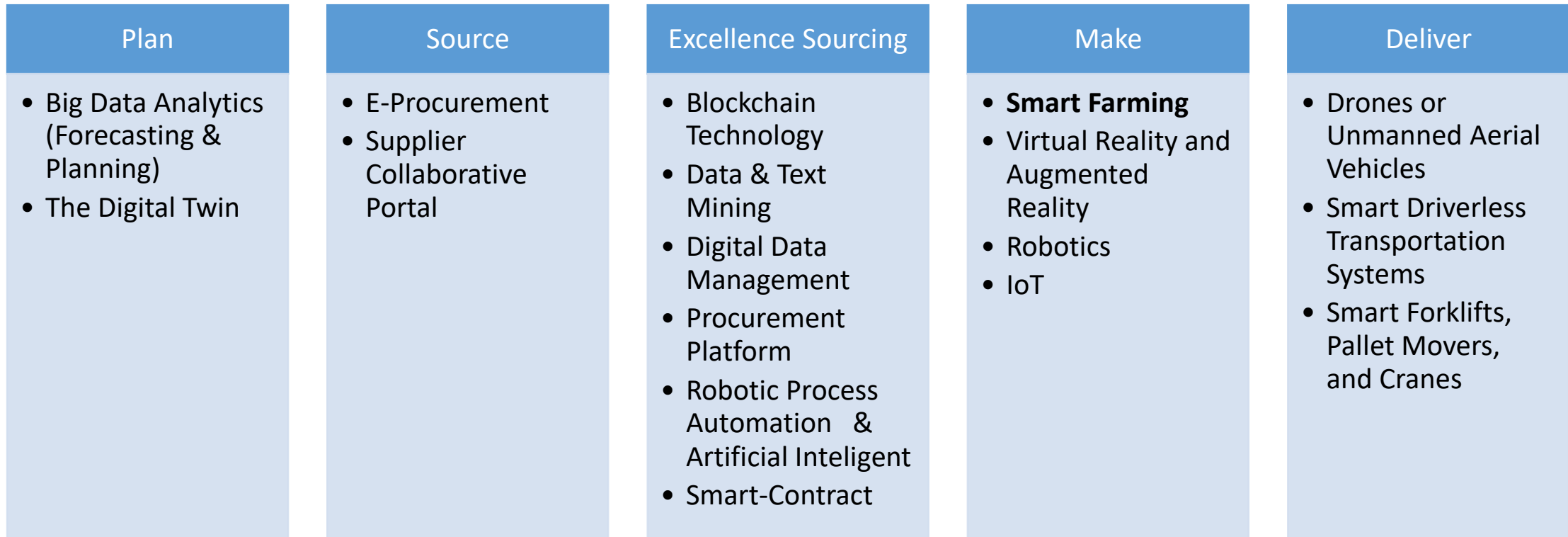
Traditional supply chain



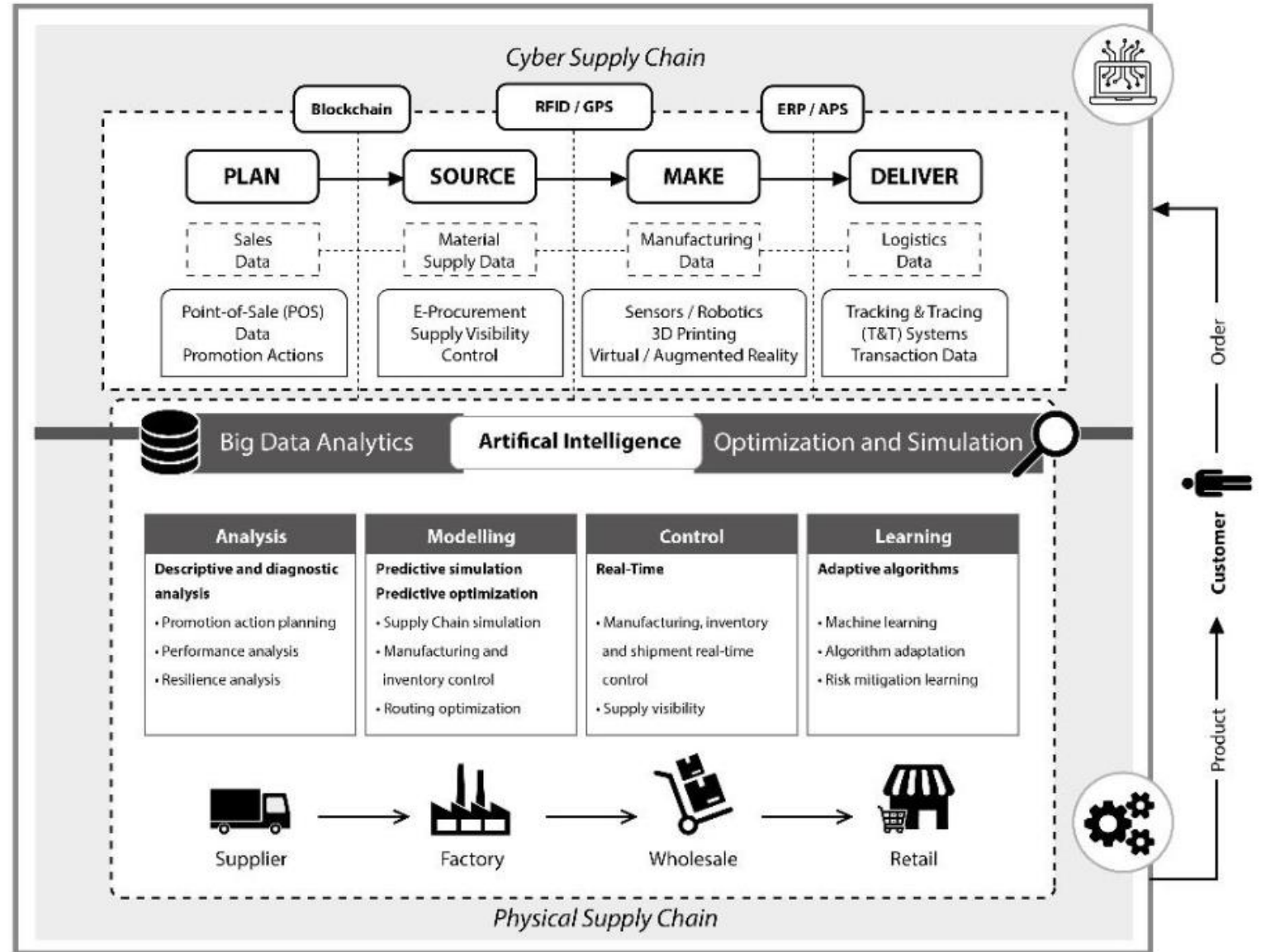
Digital supply networks

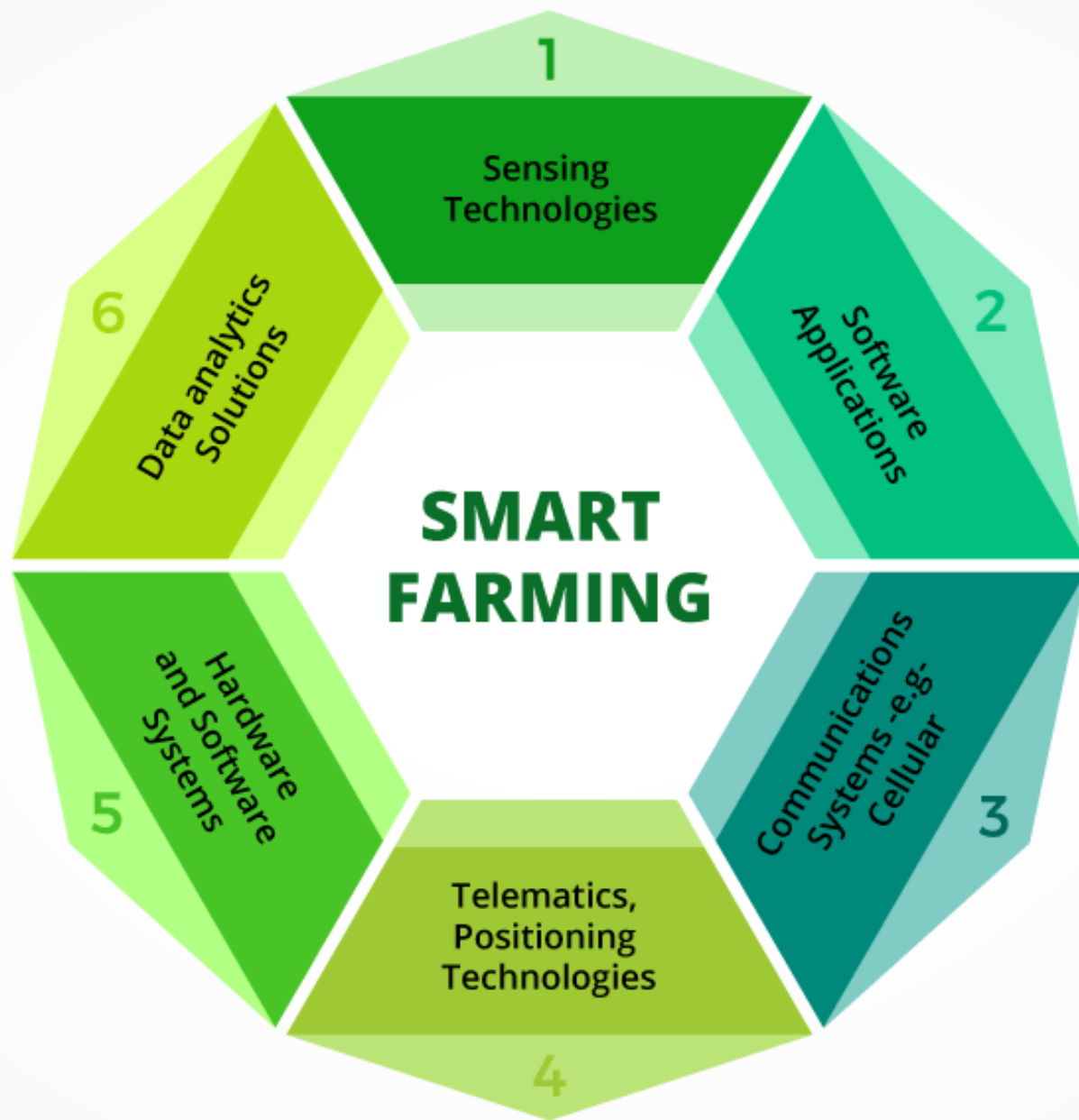


Digital Supply Chain: SCOR Framework



The Framework of Digital Supply Chain

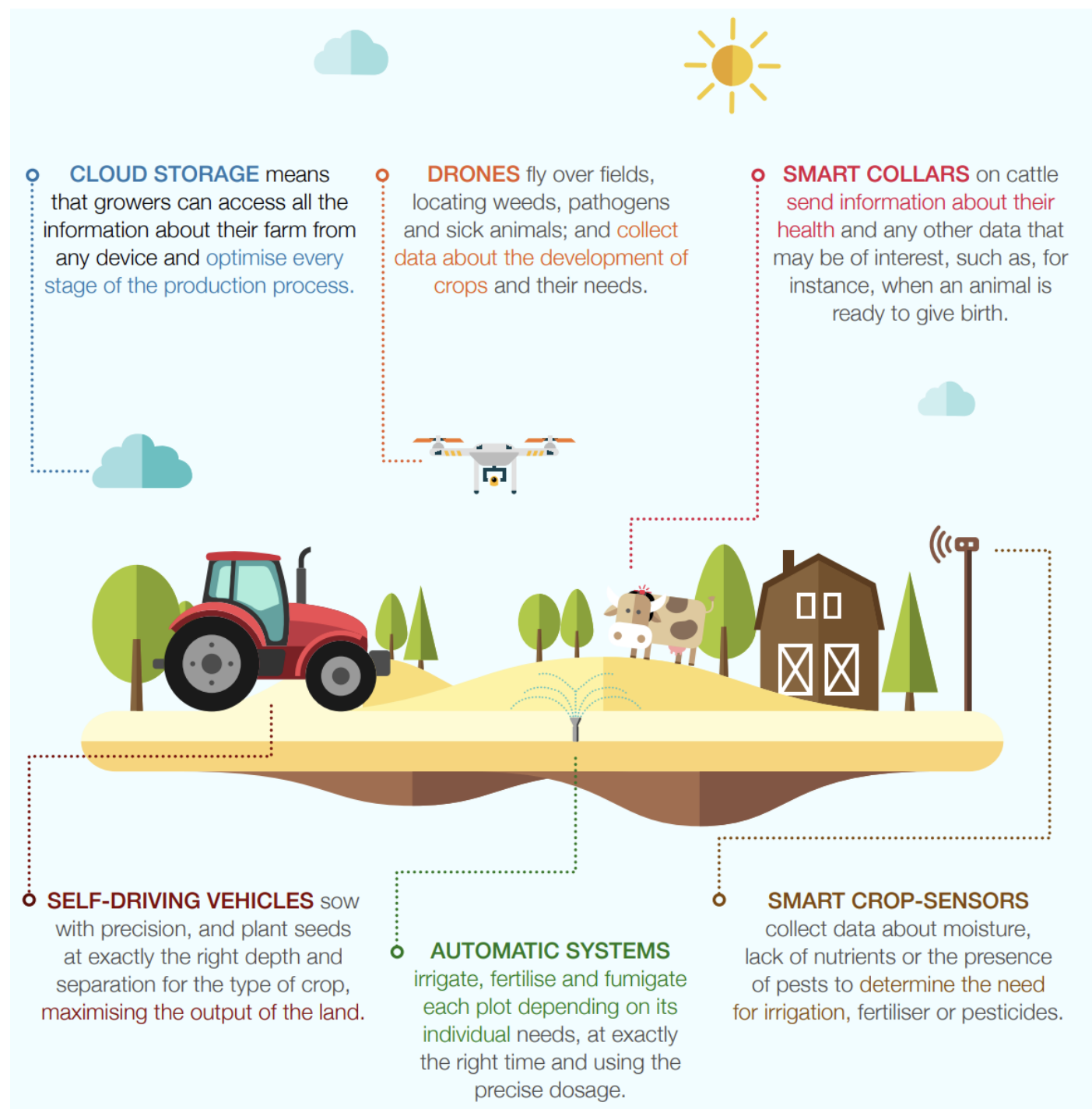




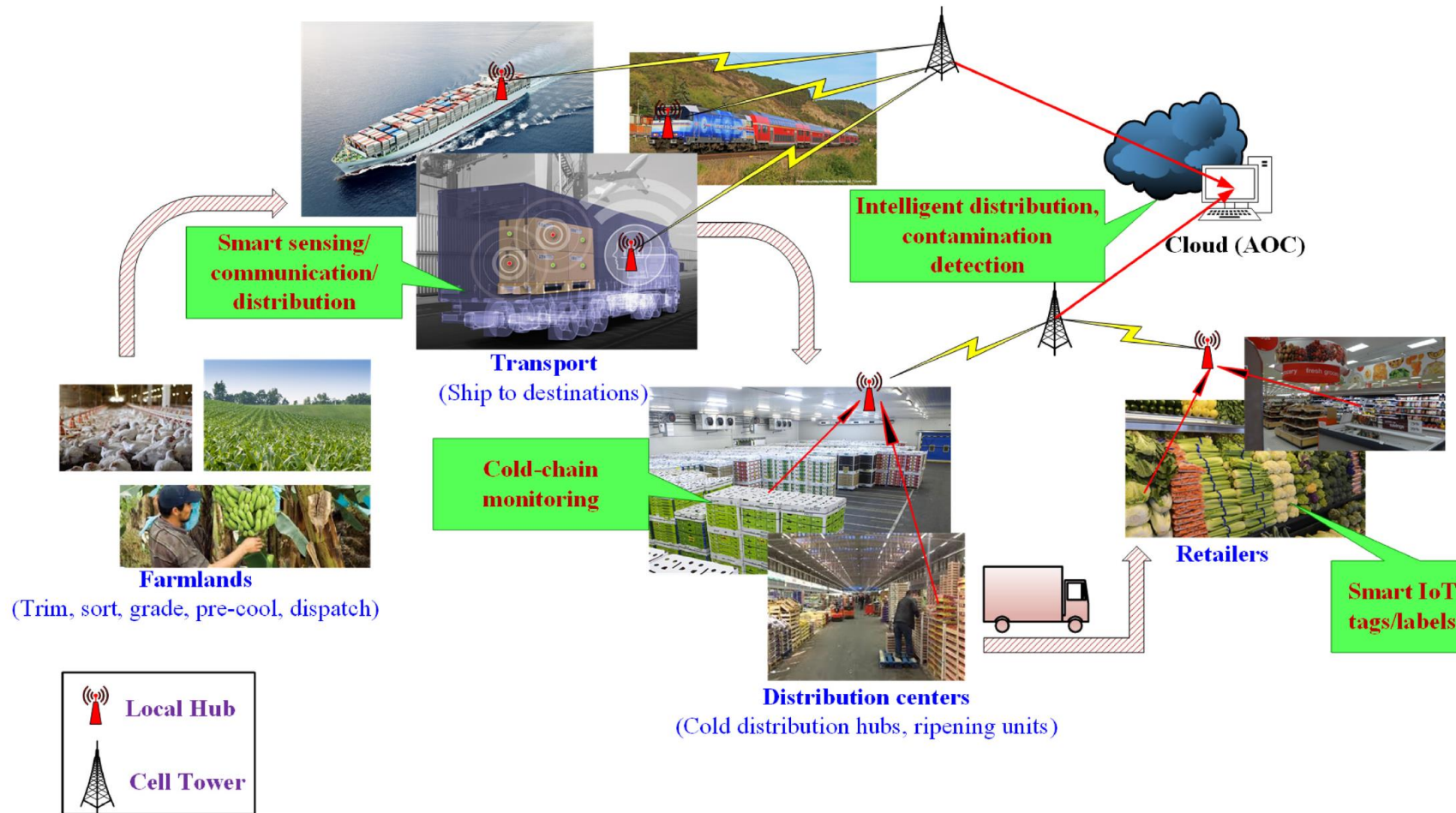
Smart Farming in action

Source: Thales / Nesta.

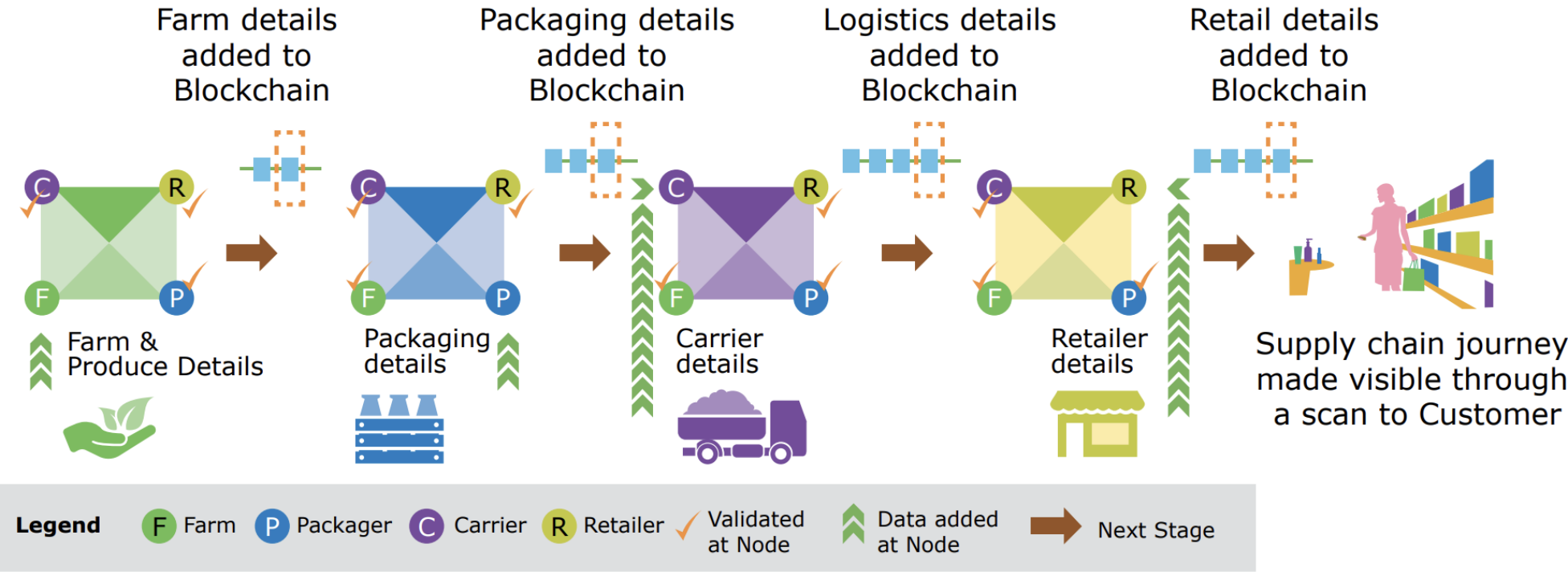
<https://www.iberdrola.com/>



Smart Sensing improves efficiency

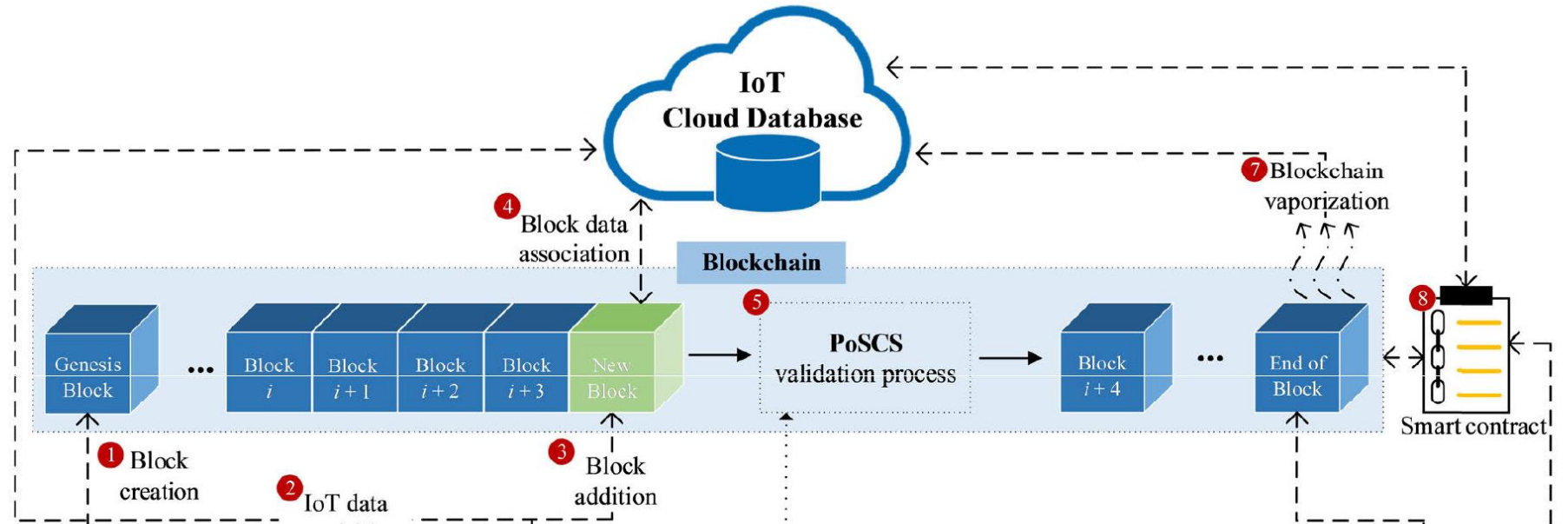


Blockchain Agrifood Supply Chain

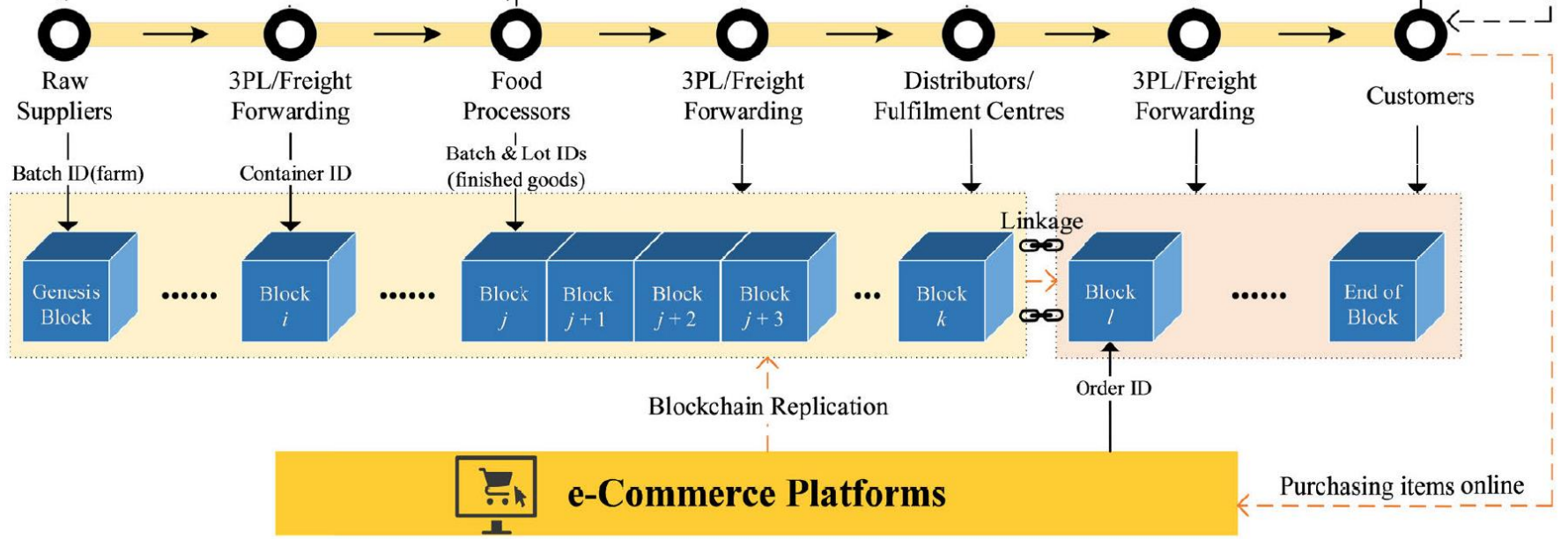


Deployment Framework of Blockchain across agriculture supply chain

Technological Aspect



Operational Aspect



AgriTech Startup Indonesia



menjembatani kebutuhan saprotan
(sarana produksi pertanian)

sayurbox



EdenFarm

B2B Industry with a
technology-supported
food ecosystem

kedai sayur



ternaknesia

JALA



Habibi Garden



eFishery

CR WDE

Peer-To-Peer Funding



TaniHub

connecting farms with people



Peer-To-Peer Funding

Benefits of Supply Chain Technology

- Predict accurately
- Food Composition, Quality, and Safety Monitoring
- Food Safety across Supply Chain
- Reduce Waste
- Improve traceability and transparency
- Improve supply chain efficiency and effectiveness