

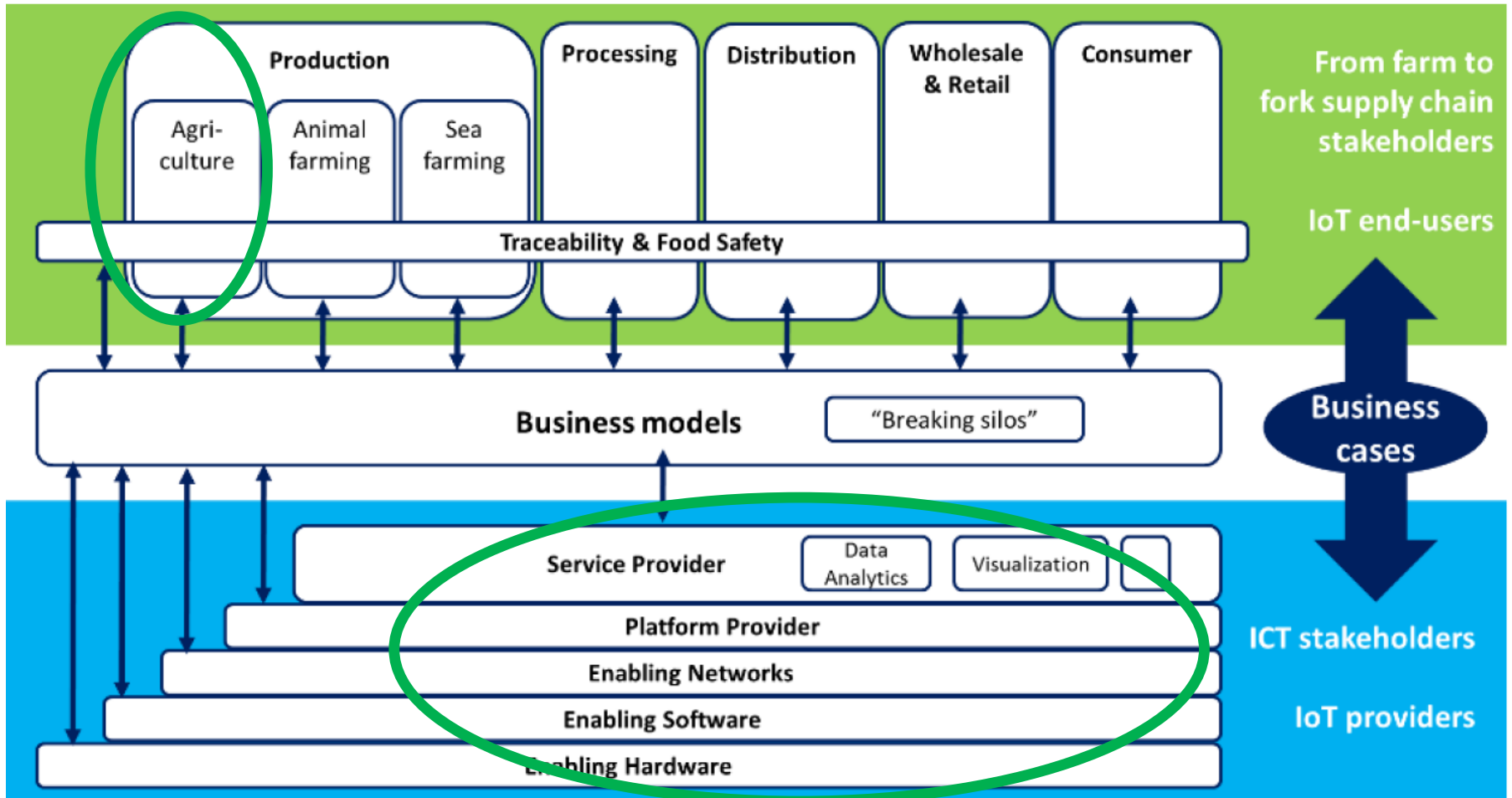


# Digital farming

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# CEMA interest/working area



Source: AIOTI WG6

# Preconditions for digital farming to take off

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- ❖ **Availability of smart, connected machines;**
- ❖ **Interoperability** – Cross-manufacturer (of device, machine, FMIS, cloud-platform...) standardised interfaces for communication. AEF-AgGateway
- ❖ **Data rights** – Assurance of data ownership by farmers (through public law regulations and contract law); issue of TRUST
- ❖ **Connectivity** – Appropriate digital infrastructure (such as network coverage and transmission rates);
- ❖ **Accessibility** – Opportunities to access existing databases (for climate/weather, soil, etc.).
- ❖ **Digital skills** – training, tools, networking of customers, service technicians, advisors
- ❖ **Align policies for adoption of agriculture 4.0 technologies** – CAP, product legislation

# Attention areas to have successful data portals

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## ❖ **Security and the ownership of control**

- ❖ Protection of personal and operational data from physical and logical errors as well as from unauthorised access;
- ❖ Transparency in the data handling and access permission control

## ❖ **Design possibilities e.g.**

- ❖ Openness of the data portal to partners (e.g. via cross-manufacturer standards) and the possibility of adding or rejecting partners;
- ❖ The players connected to the over-arching eco-system (platform)
- ❖ Modular concept permitting a phased implementation;
- ❖ Simple, multi-media operation;

## ❖ **Availability and performance**

- ❖ Assurance of permanent availability and performance capacity of the data portal;
- ❖ Automation of data transmission;
- ❖ On-site support by service partners;

## ❖ **Data portability**

- ❖ Technical and economic opportunities to move data from the portal back to in-house data processing or transfer to another portal;
- ❖ Utilisation of standards

## ❖ **Integration capacity**

- ❖ Preconditions for the networking of in-house data processing with the data portal.

# Successful deployment of IoT platforms

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- ❖ **Portals are for visiting, platforms are for building on!**
- ❖ **For a successful deployment:**
  - ❖ APIs,
  - ❖ the right platform safety and security protocols, and
  - ❖ cross-platform standardised interfaces for communication (allowing data portability)

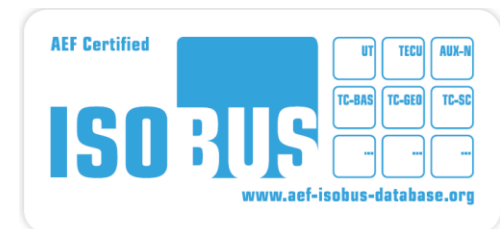
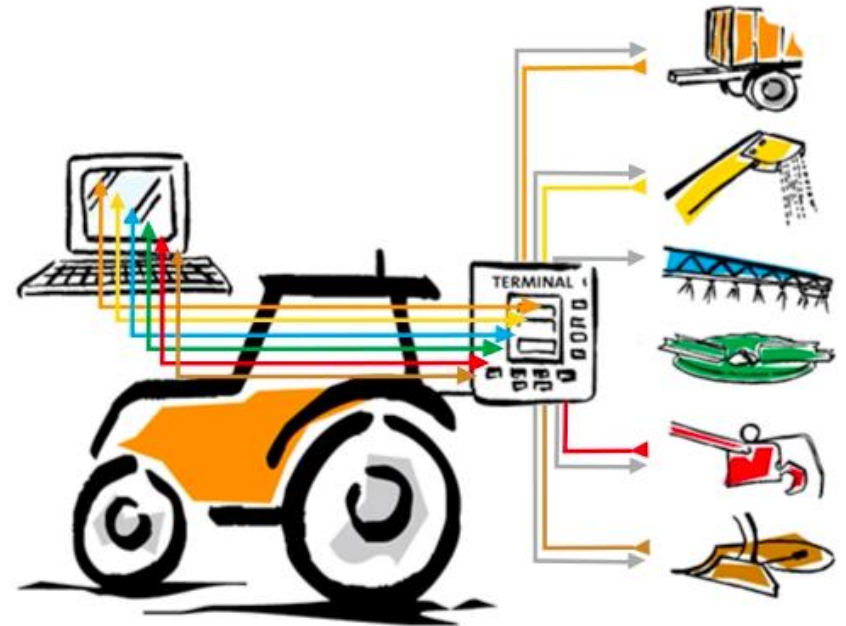
# Market situation of agricultural machinery – Lots of different tractors and implements



**How to ensure safe and secure data exchange between systems/vehicles – FMIS – Cloud in interoperability??**

# AEF – leading controlled communication between complex systems with high safety levels

- ❖ **Technical guidelines** on the application of standards
- ❖ Recognised test labs doing **conformance tests – certification**
- ❖ **ISOBUS database** on certified systems
- ❖ **Communication + control**
- ❖ **Integrated safety and security levels**



# Work in progress on interoperability AEF-AgGateway

- Vertical area specific
- Not only EU oriented
- Industry driven

