



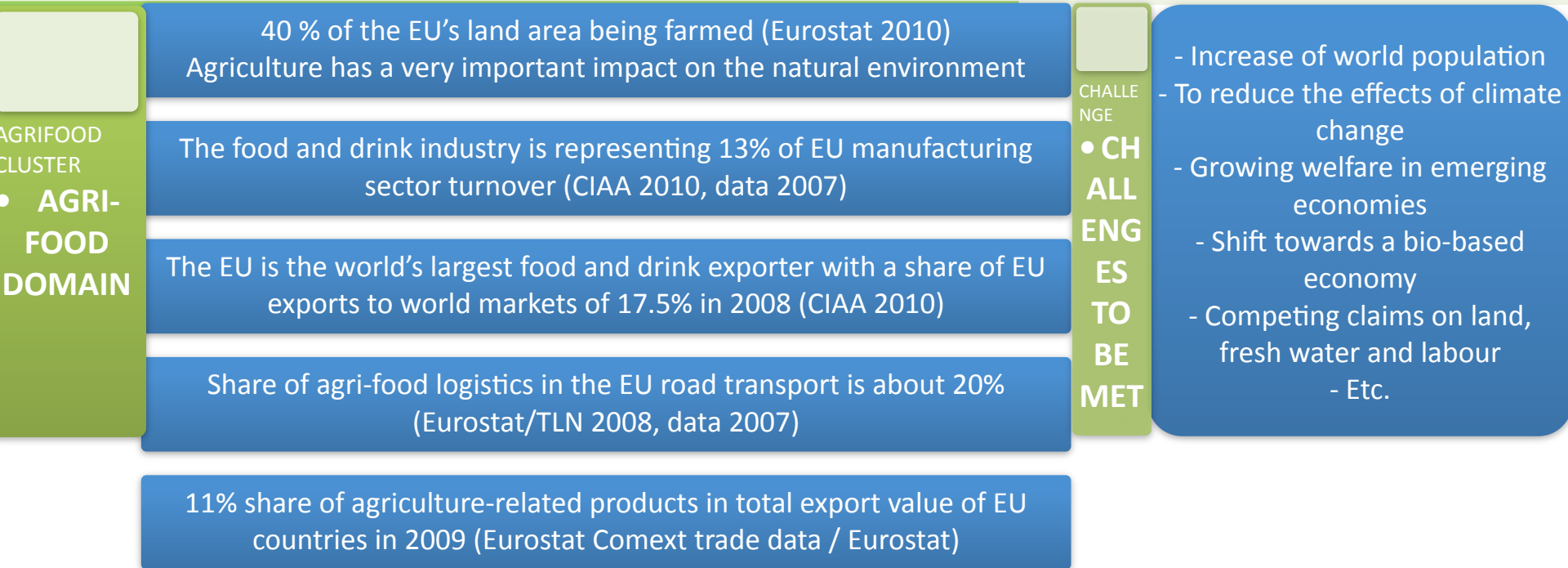
Smart Agri-Food:

The Future Internet in the Agri-Food Supply Chain

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• Introduction



The SMARTAGRIFOOD project aims to:

- Boost the application and use of future internet ICTs in Agri-Food
- Increase the competitiveness and sustainability of Agri-Food
- Affect a huge number of Agri-Food SMEs throughout Europe

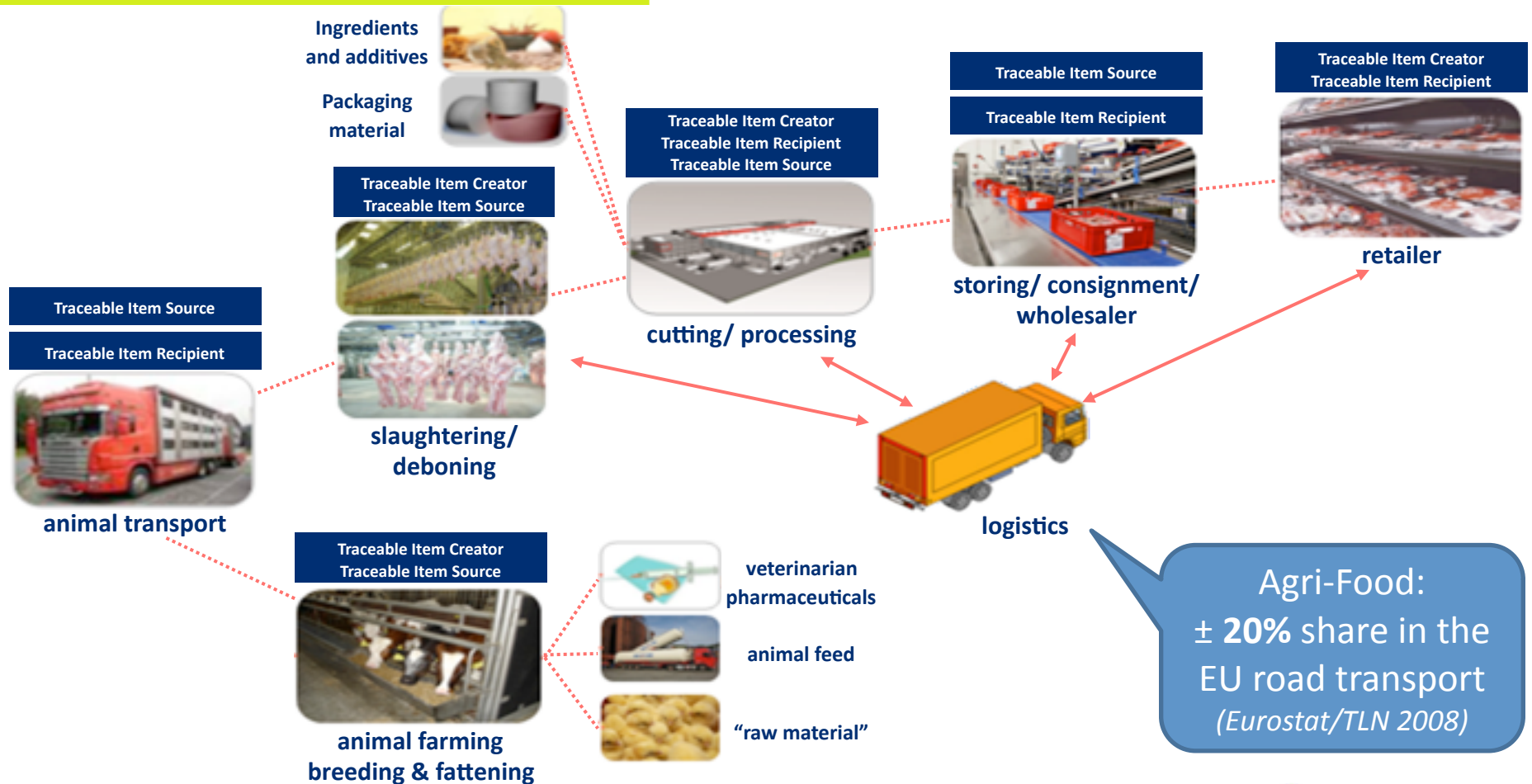
Current Challenges:

Sector-specific characteristics heavily impact logistics

- High supply uncertainty due to natural production
 - Unpredictable variations in quality and quantity of supply
 - Flexibility in logistic processes and planning expected
 - Early warning and pro-active control is required
- High perishability
 - Cold chains: temperature-conditioned transportation and storage
 - Very short order-to-delivery lead-times
- Seasonable growing requires global sourcing to ensure year-round availability
- High demands on food safety, quality and (environmental) legislation
 - Ability to trace production information of products in transit
- High tracking and tracing and logistic planning complexities
 - Continuous and discrete product flows
 - Diverging and converging processes and by-products
- Additional phytosanitary and veterinary import inspections
- Many SMEs – importance of collection and allocation mechanisms



The complexity of Agri-Food Supply Chains - for example in Meat



Agri-Food:
 ± 20% share in the EU road transport
 (Eurostat/TLN 2008)

Illustrative example of a meat supply chain (source: GS1)



Future Internet

- Aims to overcome limitations of the current internet, including:
 - a lack of data integrity, reliability, provenance and trust
 - a lack of data integration and federated storage solutions
 - lack of flexibility and adaptive control
 - segmentation of data and control
- “Developing the Future Internet” to combine several trends in internet development into an integrated approach
 - the on-going industrialization of IT
 - cloud computing
 - open service delivery platforms
 - new wireless networking technologies and the deployment of fibre
 - the breakthrough of the Internet of Things



FI-PPP programme approach

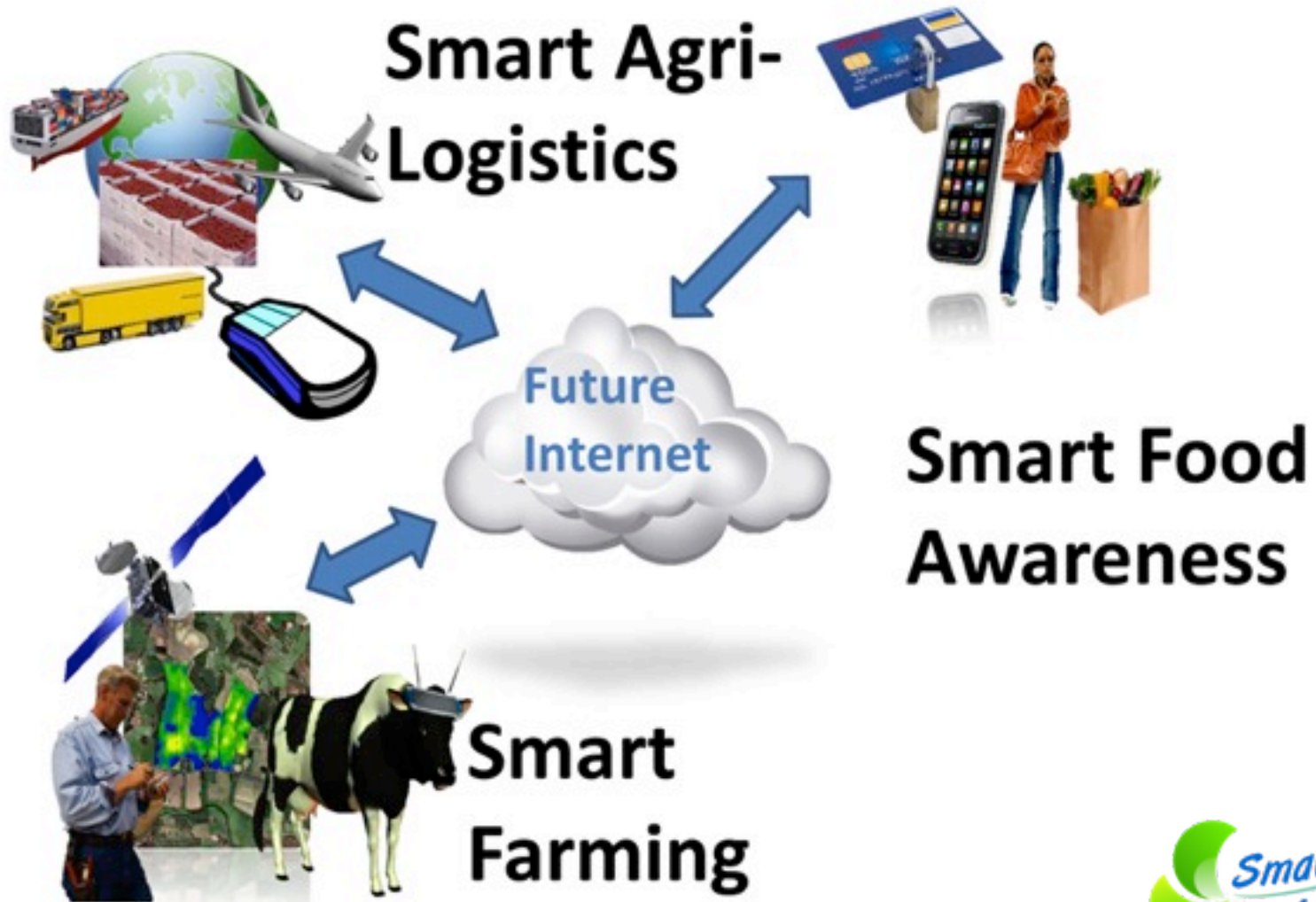
- Industry-led
- Creating internet innovation
- User-driven
- Integrated programme notion
- Overall FI-PPP budget:
 - 300 Million Euro EC contribution

Objectives of SmartAgriFood

Boost the application & use of future internet ICTs in the agri-food sector by:

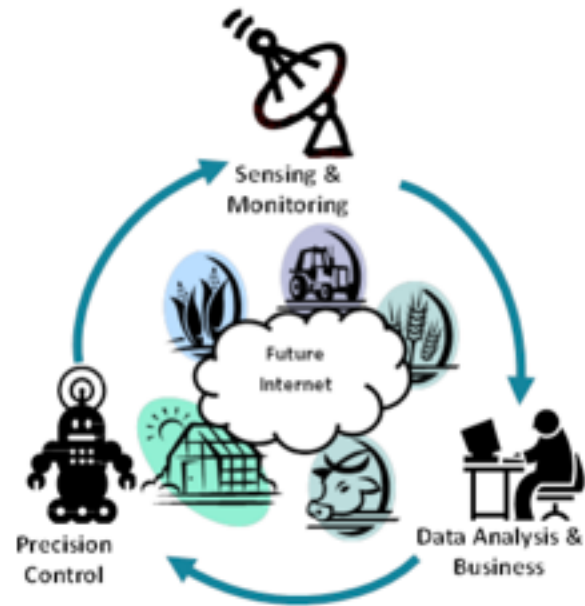
- identifying and describing the technical, functional and non-functional **FI-specifications**
 - for experimentation in smart agri-food production as a whole system and
 - in particular for smart farming, smart agri-logistics and smart food awareness
- identifying and developing smart agri-food-specific **capabilities and conceptual prototypes**:
 - demonstrating critical technological solutions including feasibility,
 - to further develop them in large scale experimentation and validation
- identifying and describing existing **experimentation structures** and start **user community building**,
- resulting in an implementation plan for the next phase.

3 Use Case Scenario's: from Farm to Fork



WP200 Smart Farming

- **Smart Farming**
 - sensors and traceability
 - concerns first the use of sensors and monitoring, decision support systems and precise input application so as to make the use of resources more efficient in food production, and secondly concerns ways to improve traceability and the flow of data along the food supply chain

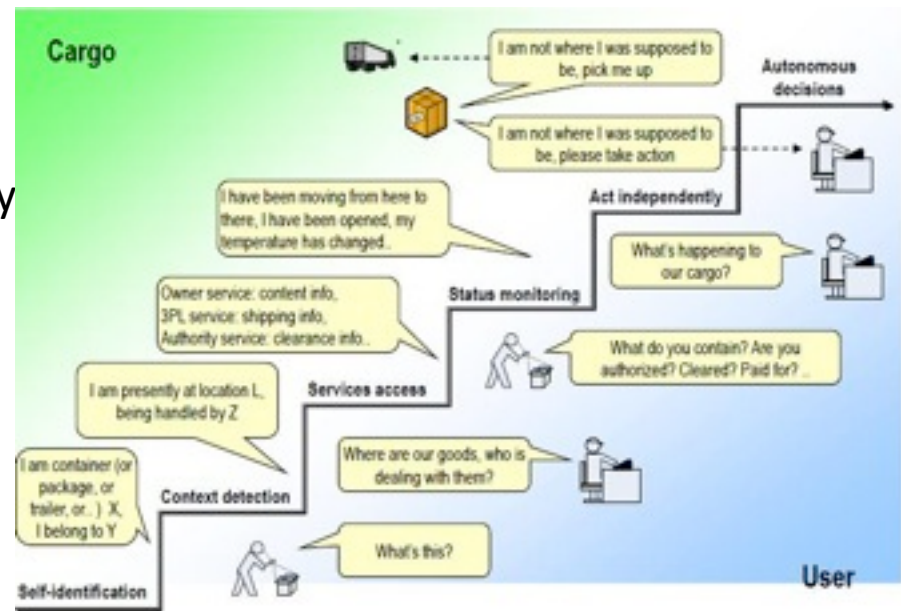


WP300 Smart Agri-Logistics

- **Smart agri-logistics**

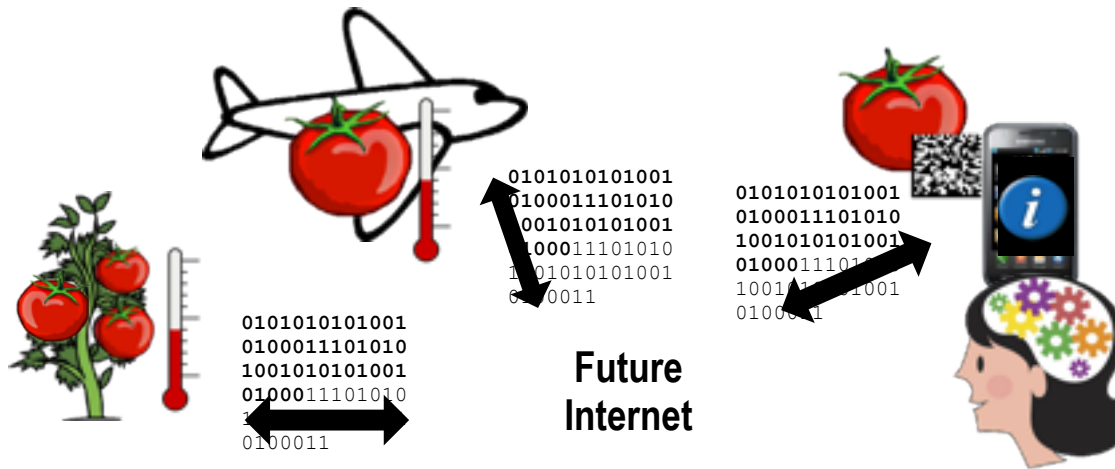
- real-time virtualization, connectivity, logistics intelligence

- concerns the intelligent matching of supply and demand followed by smart transport and logistics of agri-food products by eg. tracking of food products, conditioned transport using sensors and control systems, remotely controlled early warning systems, and better predictions of food transportation needs



WP400 Smart Food Awareness

- **Smart food awareness**
 - transparency of data and knowledge representation
 - concerns enabling the consumer with relevant information eg. concerning safety, availability, health, environmental impact, and animal welfare, to make informed decision and to make the activities carried out in the entire food production chain transparent

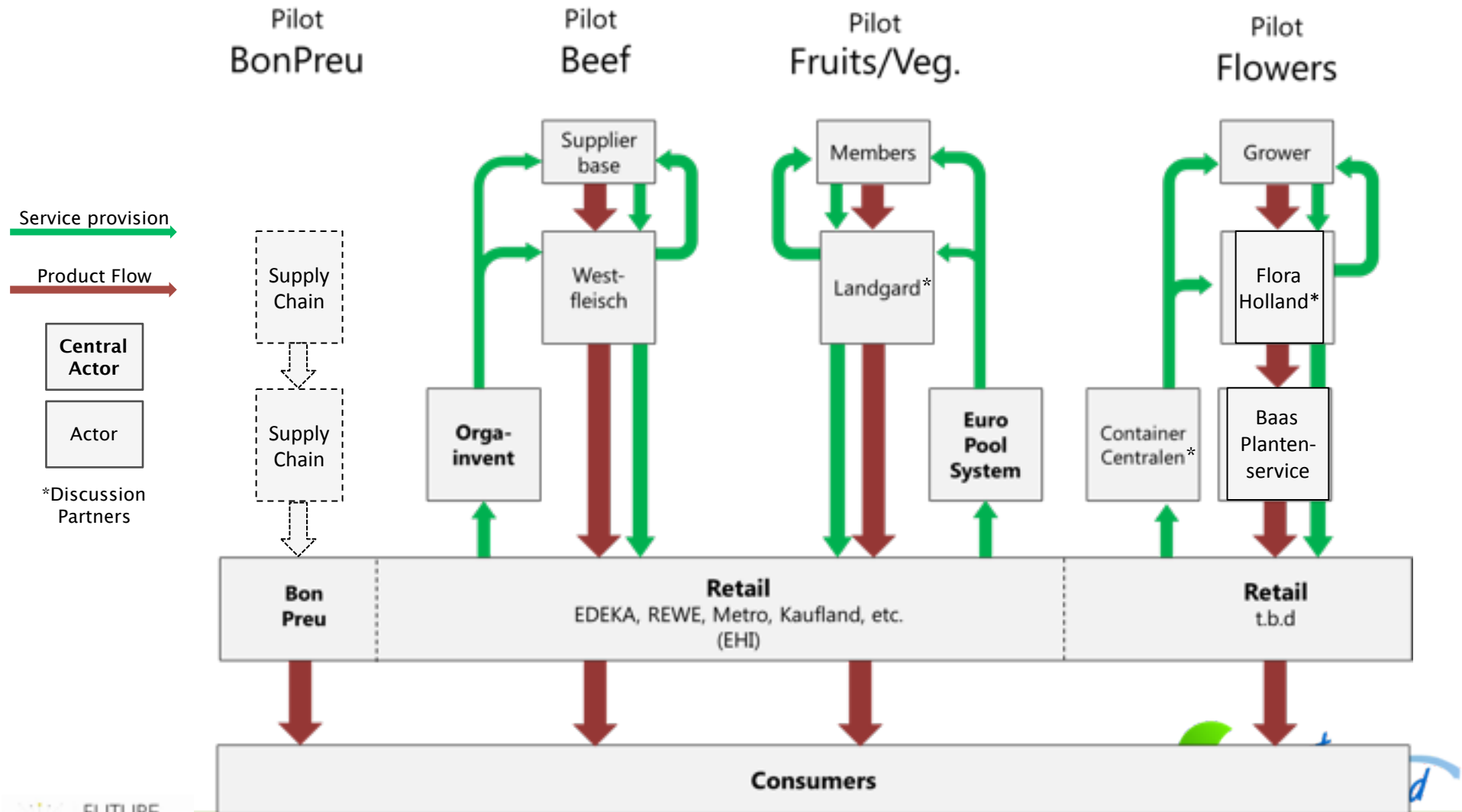


Consortium

- **21** beneficiaries from **7** countries
- Balanced consortium
- Connected to
 - ETP Food for Life by CBHU
 - ETP Manufuture, subgroup Agricultural Engineering and Technology (AET) by John Deere
 - ETP EpoSS by VTT
 - ICT-agri ERANET by TNO/Wageningen University
 - IERC cluster by DLO/ATB
 - Network of EHI retail institute
 - Local industry platforms
 - Local governments
 - Euro Pool System

	Research		Industry/ end-users	
	Agri-food	ICT	Agri-food	ICT
DLO-WUR	++	+		
ATB	+	++		
TNO	+	++		
CENTMA	++	+		
ATOS				++
ASI				++
HWDU				++
MTT	++	+		
KTBL	++	+		
NKUA		++		
UPM		++		
Campden BHU			++	
Aston Uni.		++		
VTT	+	++		
OPEKEPE			++	
John Deere			++	+
Wageningen Uni.	++	+		
EHI Retail			++	
GS1			++	+
SGS			++	+
BonPreu			++	

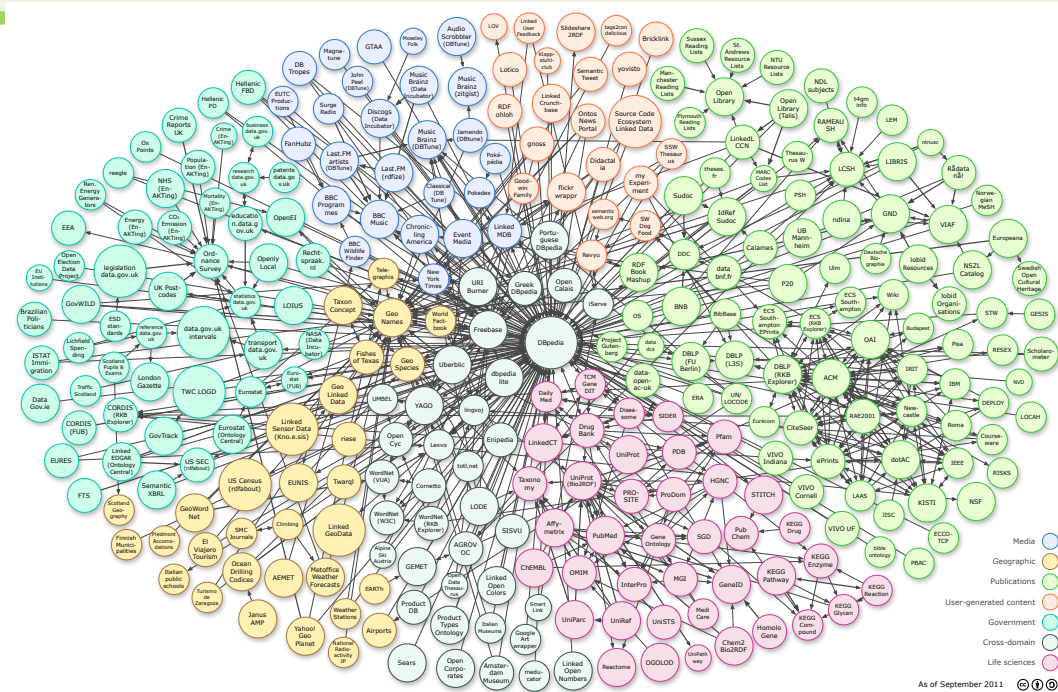
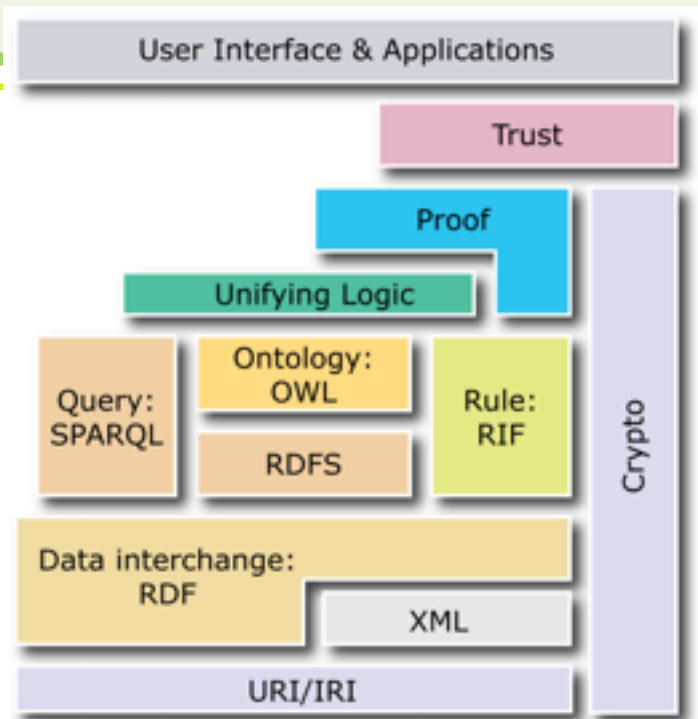
Conceptual Prototypes – Focus of a Smart Agri-logistics



Aston's Contribution to the Project

- Semantic Technologies for Supply Chain Integration
- Social Media in the whole supply chain
- (also) Lead Work Package 1 on overall harmonisation, standardisation and integration across the supply chain

Semantic Technologies

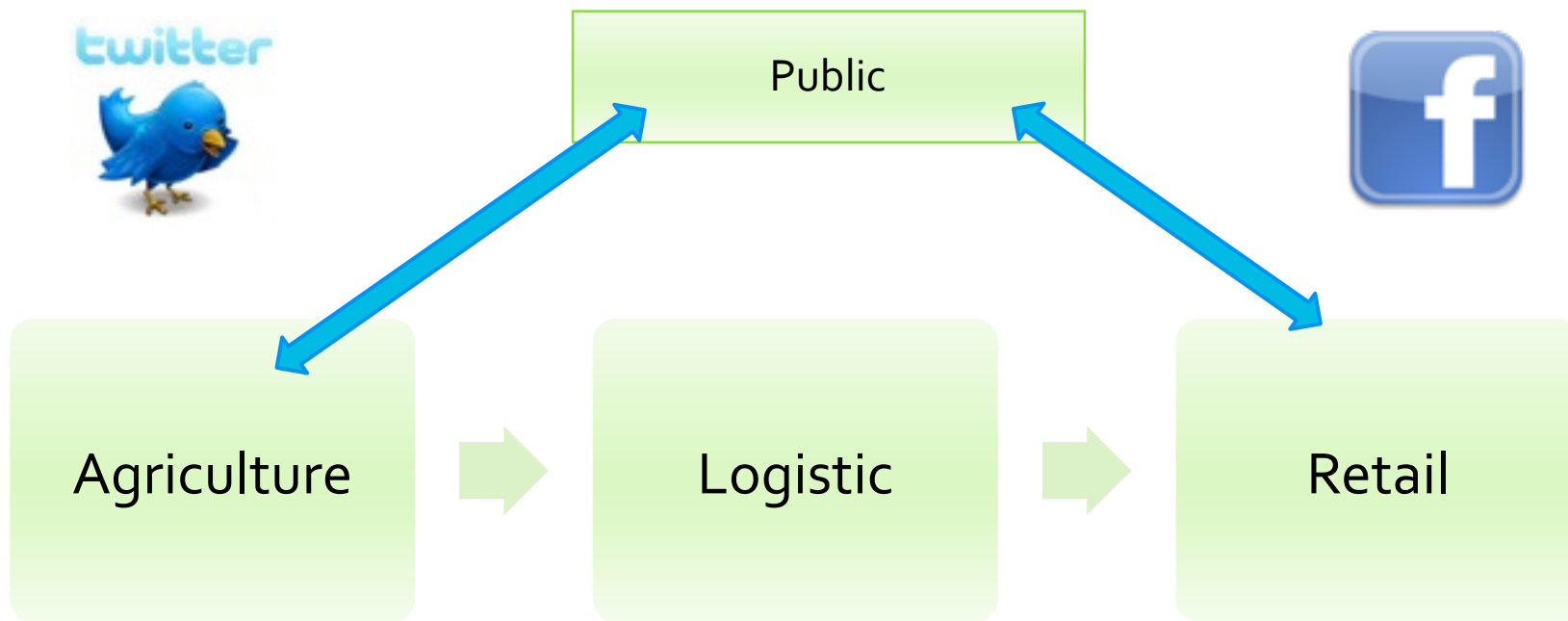


- Aim to create a **Web of Data**
- Enable inter-operability between systems
- Enable data sharing using standards

Why Semantic Tech in Agri-Food?

- Agri-food supply chain is very heterogeneous
 - many actors
 - many different types
 - many different business objectives and models
- ICT *across the supply chain* has had limited success - mostly proprietary solutions
- Semantic Tech provide technologies to facilitate data sharing (when and if needed)

Analysing Social Media in the Agri-food domain



- Much SM at the retail end, some in the Agriculture end, very little in the middle
- Great potential for growth - but also mishandling

THANK YOU
QUESTIONS?