Transparency in meat supply chains

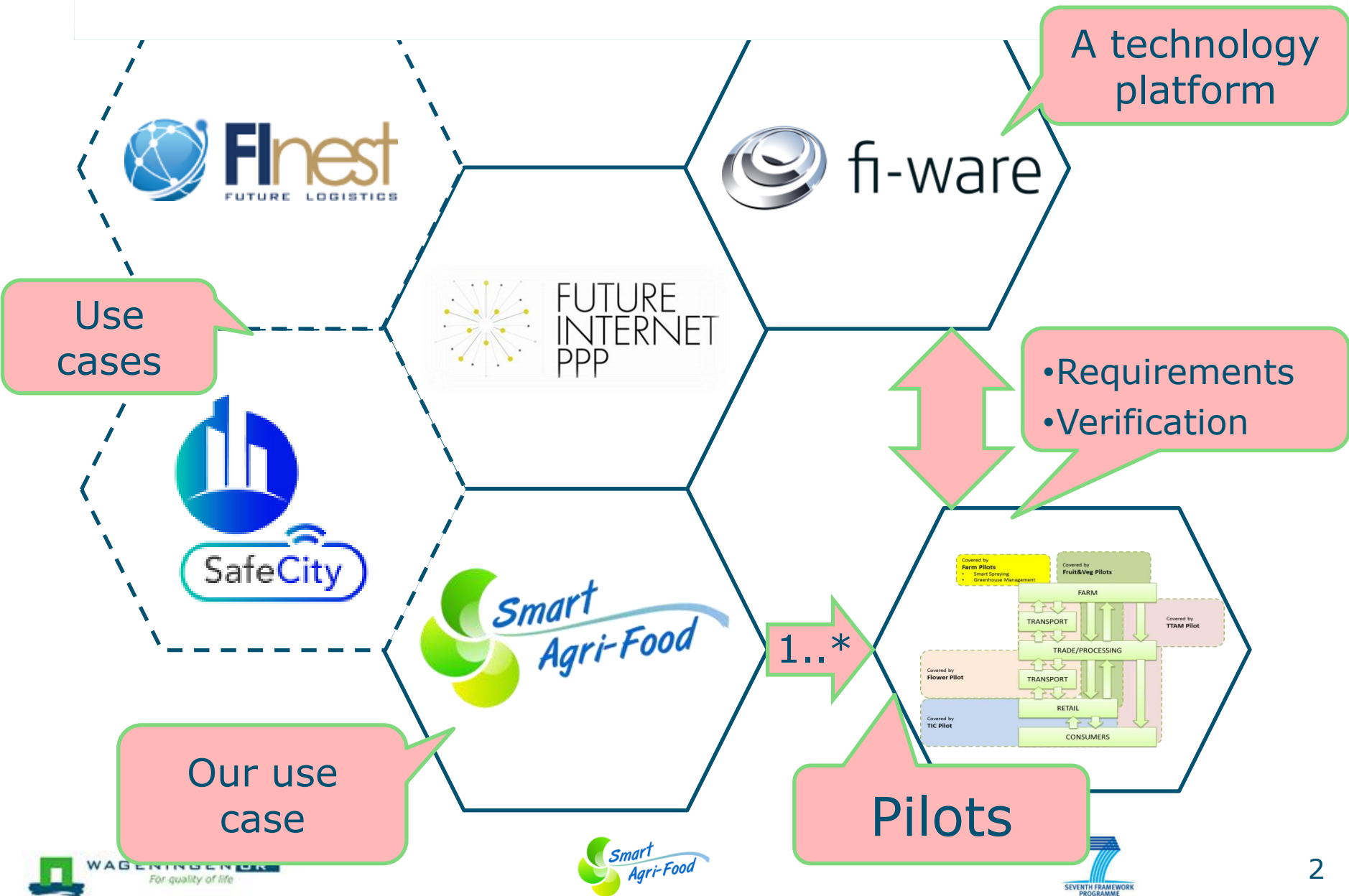## *An information system for tracking, tracing and awareness of meat (TTAM)*

Kassahun, A., Hartog, R.J.M., Sadowski, T., Bartram. T., Kläser, S.,
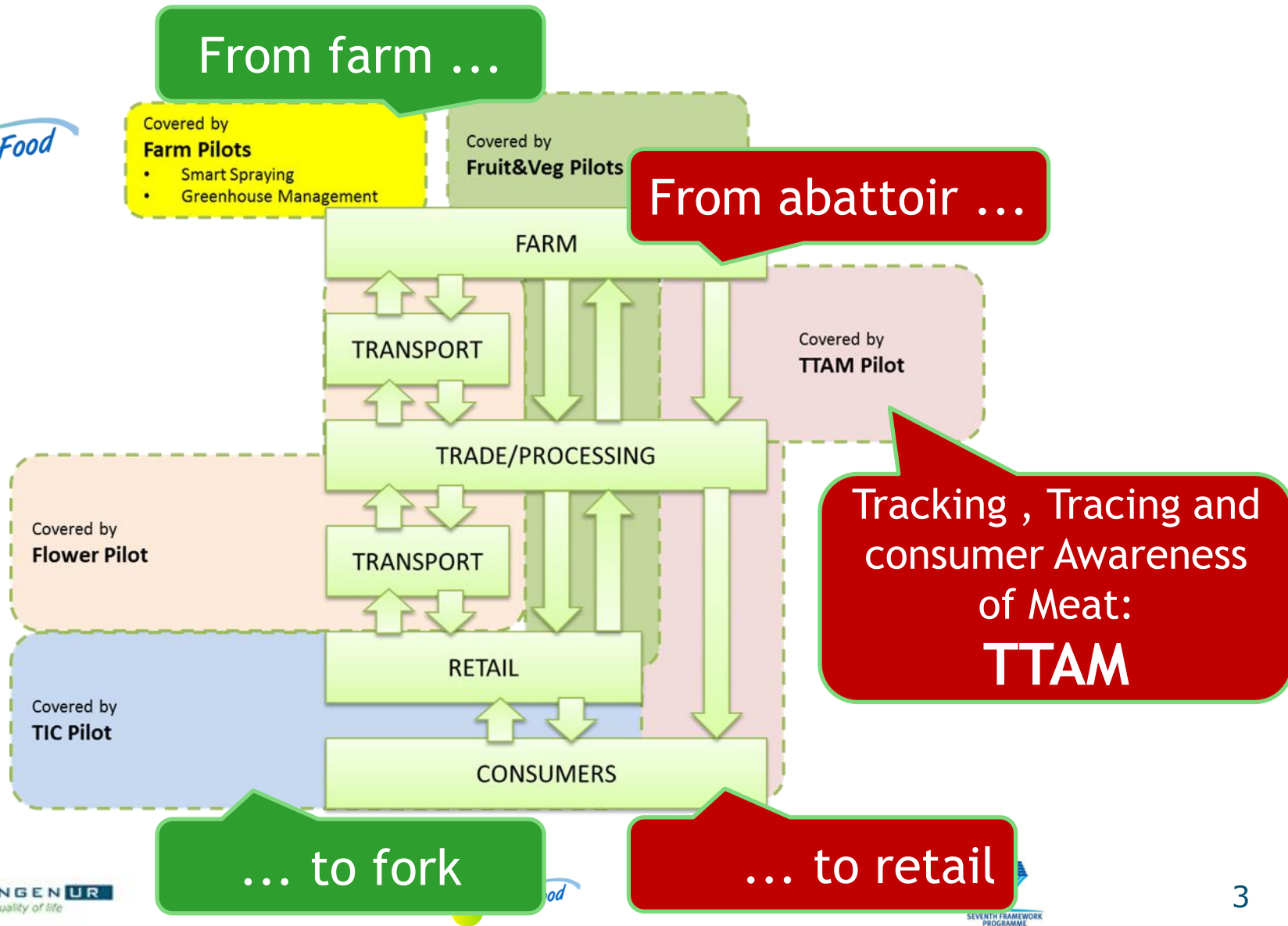
Scholten, H., Schillings-Schmitz, A. and A. Beulens.

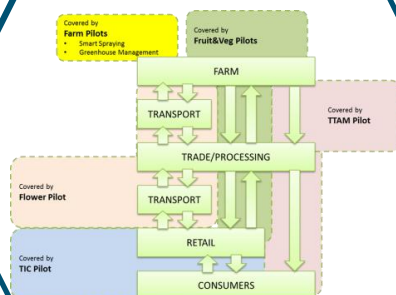**Igls Forum 2013, 21st Feb. 2013, Innsbruck, Austria**

Context

A technology platform

Use cases

•Requirements
•Verification

1..*

Our use case

Pilots

2

Smart Agri Food & the TTAM pilot

Partners

4

Why TTAM? - topical issue

The Telegraph

HOME | NEWS | WORLD | SPORT | FINANCE | COMMENT | BLOGS | CULTURE | TRAVEL | LIFE | FAS

Politics | Obits | Education | Earth | Science | Defence | Health | Scotland | Royal | Celebri

Conservatives | Liberal Democrats | Labour | Political Parties | Scottish Politics | Local Electi

HOME » NEWS » POLITICS

No risk to the public from horse meat, Downing Street insists.

Downing Street has been forced to row back on claims made by Owen Paterson, the Environment Secretary, that horse meat could be harmful to human health.
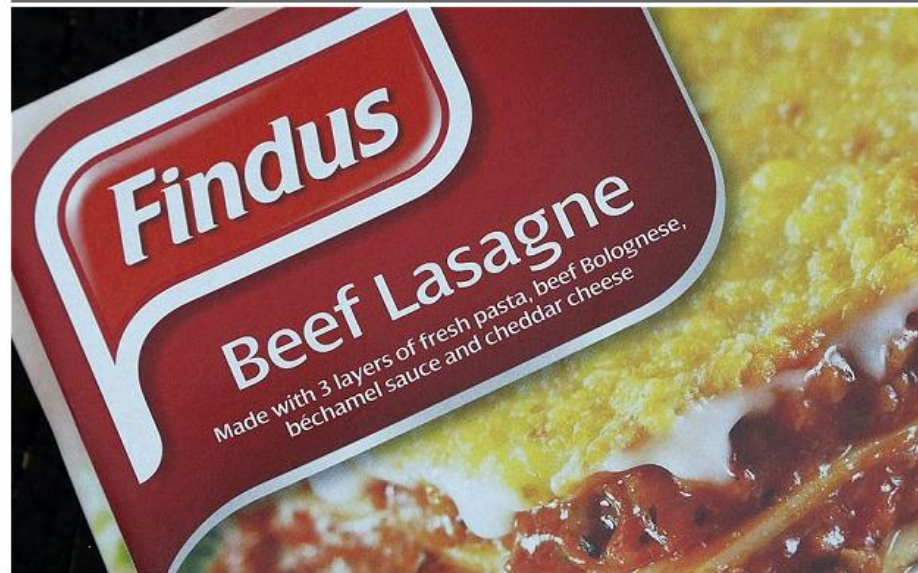
What we did… / design-oriented research

1: Requirements

- Consumer trends
- Regulations (EU)
- Understanding FI-WARE

2: Current state

- Tracking & tracing
- Consumer awareness

3: Design a new system

- Build on the existing
- Use/define generic enablers (GEs)

4: Validate

- Build a prototype
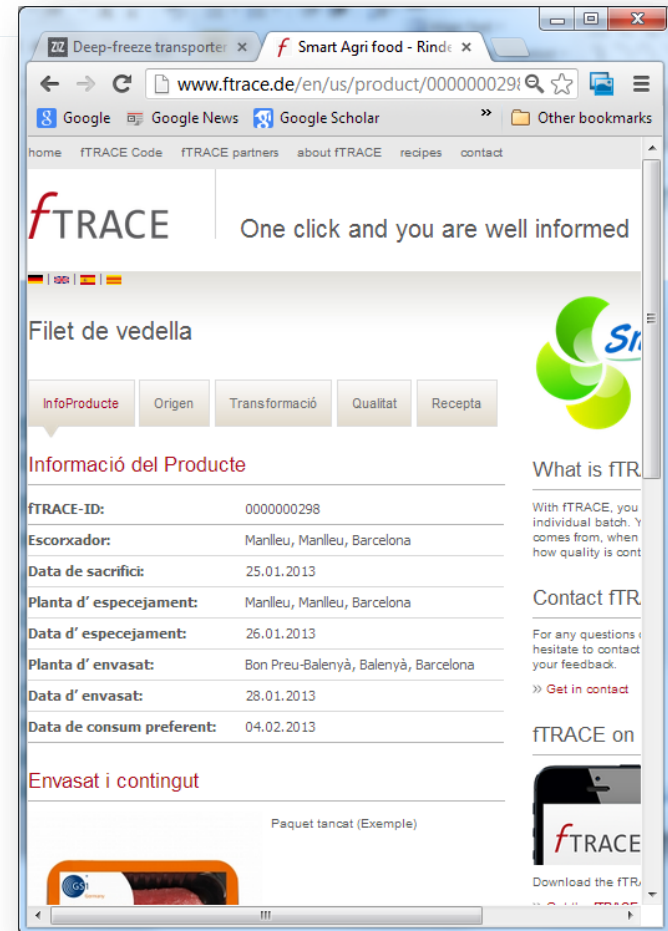- Test at a retail

Requirement #1: Consumer trends
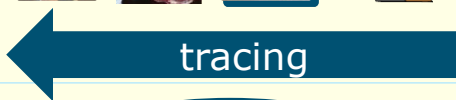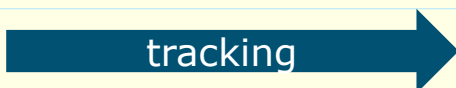

Smartphones as a shopping companion

= **http://www.ftrace.de/?h=GS&i=0000000298**

Requirement #2: regulations (EU)

Registration of bovine animals and origin of beef Reg. No. 1760/2000

tracking

tracing

General Food Law: Reg. No. 178/2002

NL 12.3456 EC

Hygiene rules, registration and approval req. Reg. No. 853/2004

Batchcode HMZ30

Batch or consignment number Reg. No. 931/2011.

Provision food information to consumers (awareness): Reg. No. 1169/2011

Comes into force in 2014

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Requirement #3: What is FI-Ware?

Pay-as-you-go
... use on demand

Cloud

Market place
App Store, Play store

Smartphone

Location-based services

Application mashup

Single sign on

Social media

Sematic information

Big data

Sensors

Actuators and robotics

FUTURE INTERNET ASSEMBLY

http://catalogue.fi-ware.eu/enablers
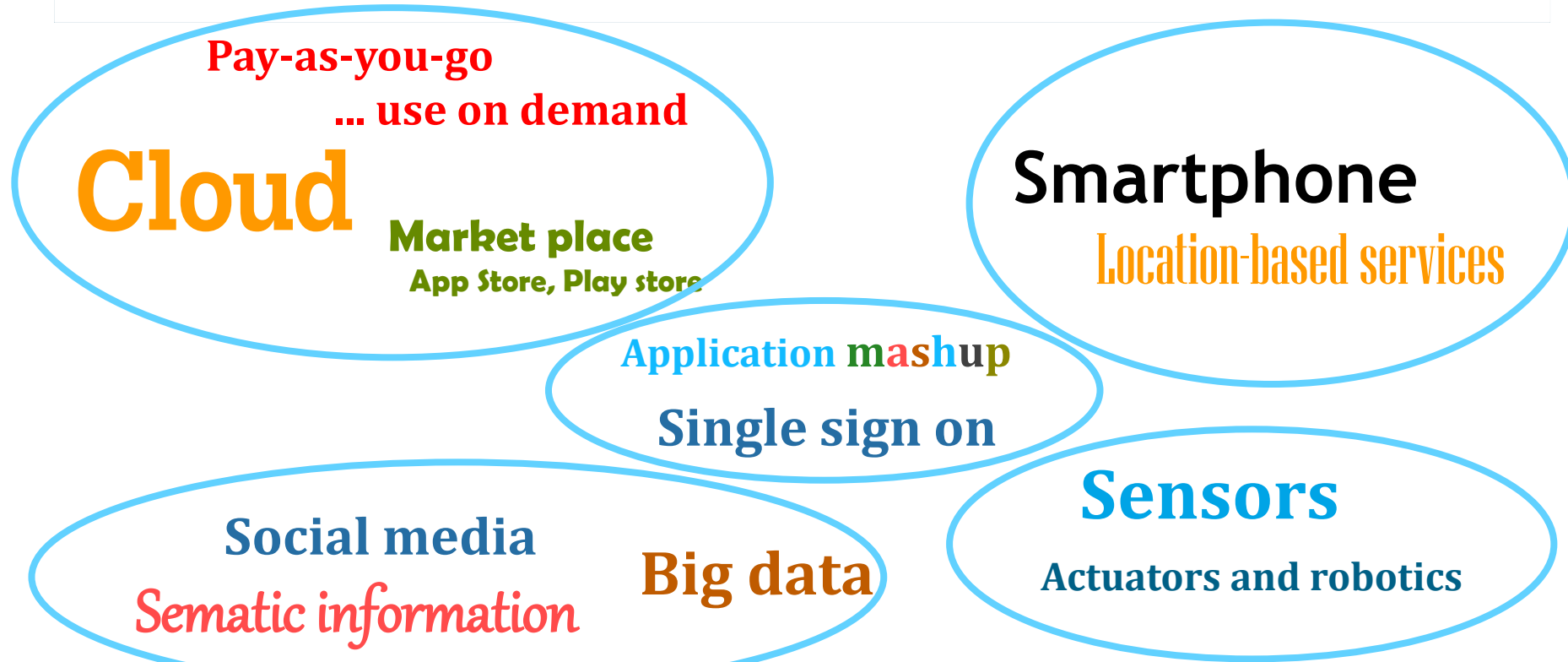
Cloud Hosting, Data/Context Management, Internet of Things (IoT), Applications/Services Ecosystems, Security and Interface to Networks and Devices (I2ND)
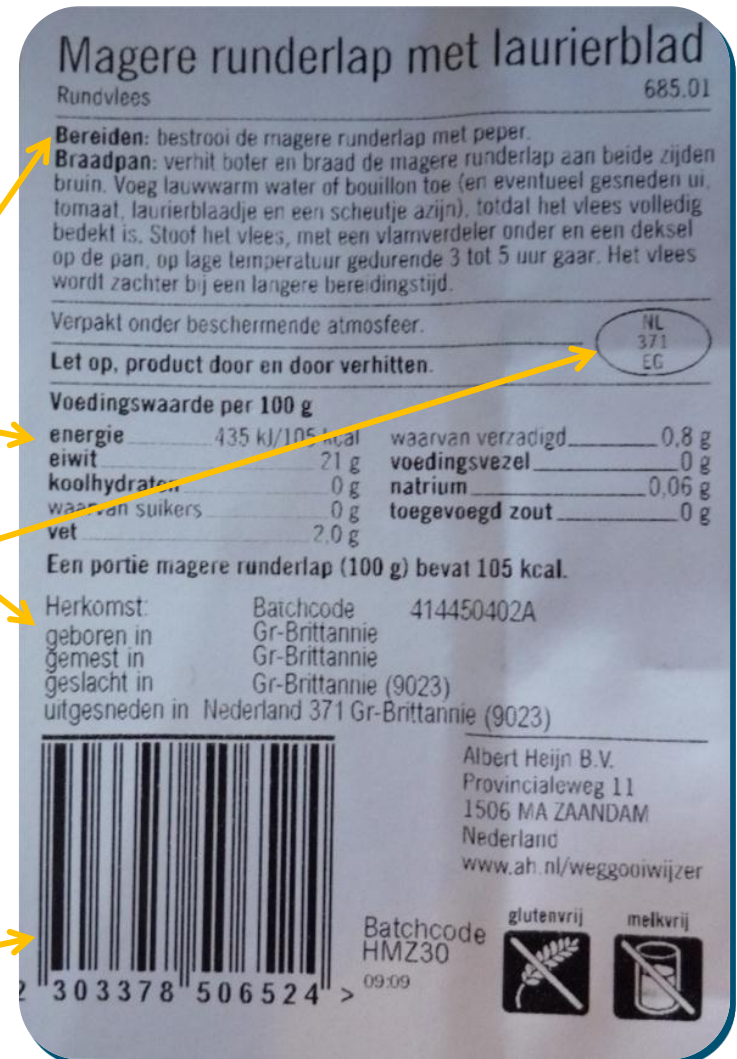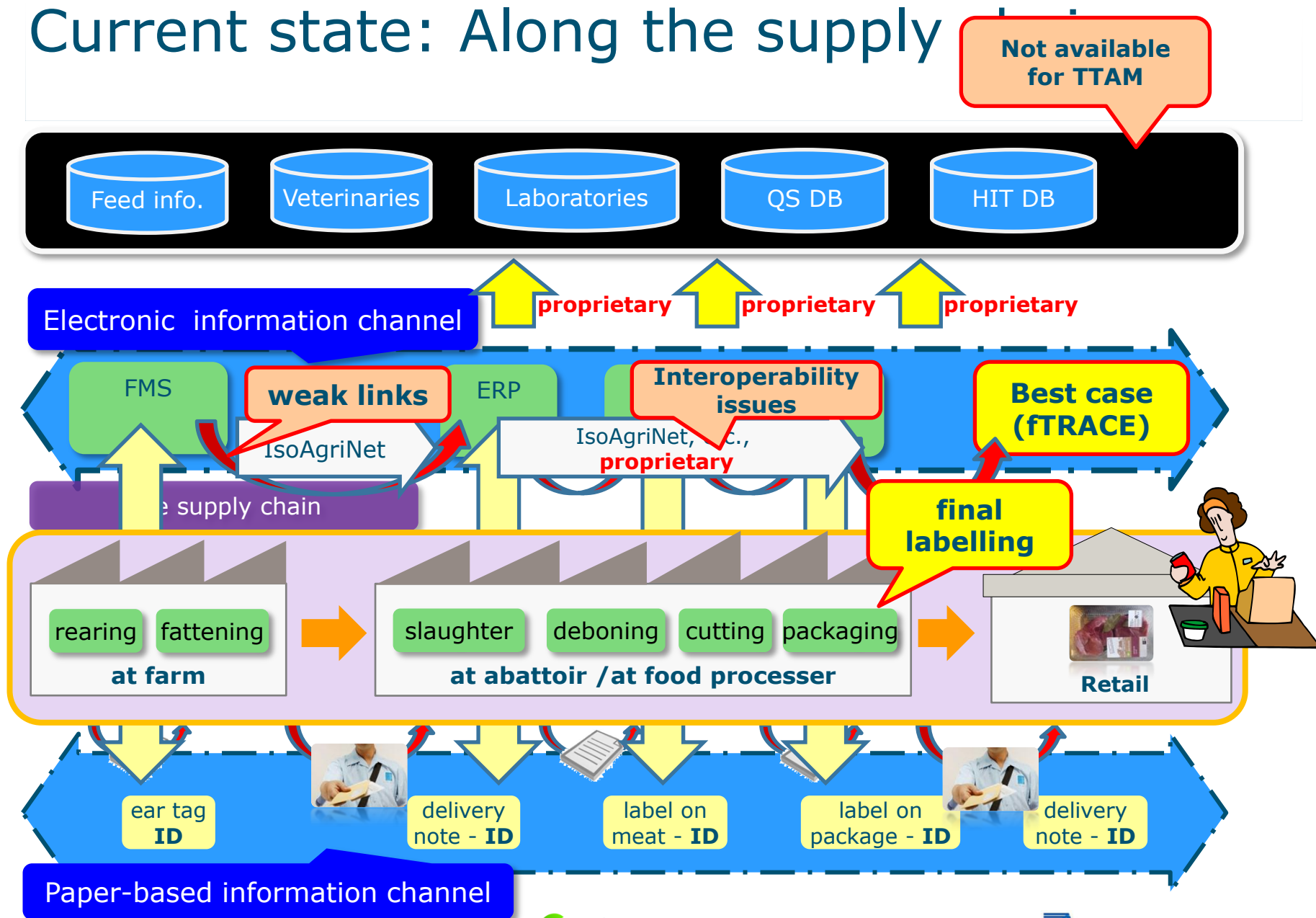
Current state: At retail

Current state: Along the supply

One of the best examples of current transparency systems: fTRACE

Room for improvement in fTRACE

	fTRACE	vs	What the new TTAM system should improve
1	A specific solution for a specific supply chain		**Generic: any meat supply chain**
2	Data gathered at the end		**Data gathered from each supply chain actor**
3	Trusted data		**Certified data**
4	Tracking and Tracing of large batches (country of origin)		**Tracking and tracing of small batches (at animal or farm level)**
5	Proprietary protocols for information exchange		**Information exchange using standard protocols**
6	Uses own components		**Uses generic enablers**

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SEVENTH FRAMEWORK PROGRAMME

A trusted third party transparency provider

GS1 Standards → EPCIS → FI-WARE

Transparency system

EPCIS Repository

ERP

EPCIS Repository

events   e

Event

slaughter | deboning

at abattoir

Event

ERP

EPCIS Repository

event   eve

Event

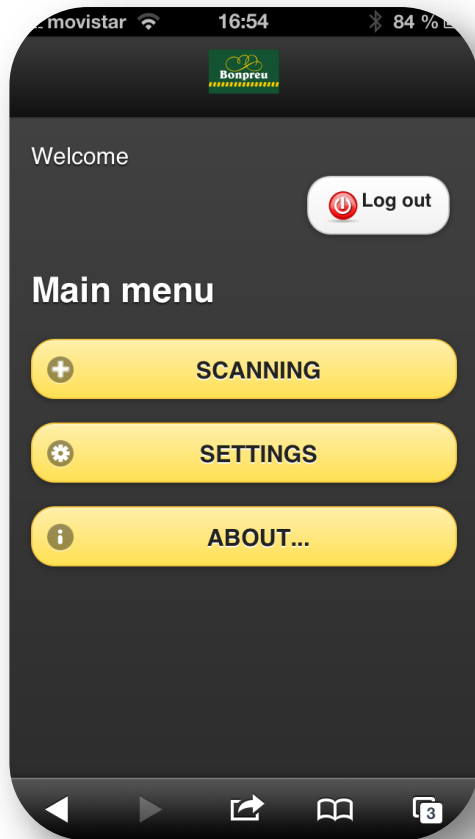cutting | slicing | packaging

at food processer
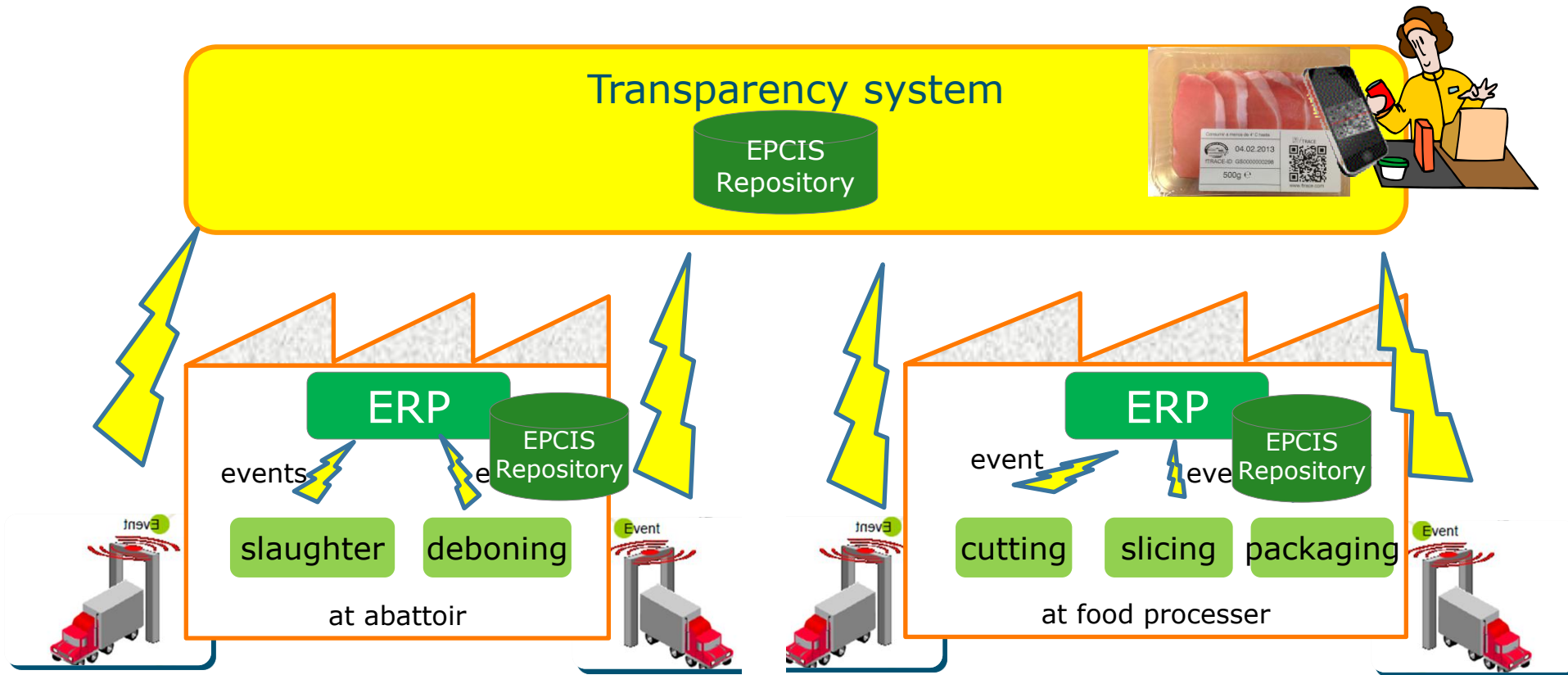
Event

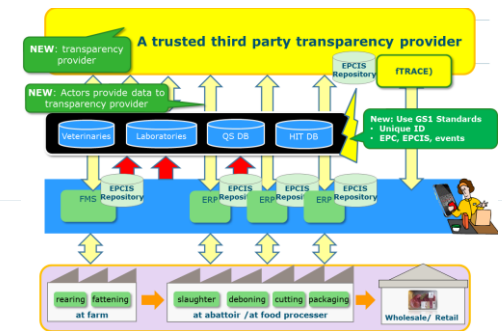| Relevant FI-Ware GE's? | → | 1. Publish-subscribe
2. Complex event processing
3. Security | → | EPCIS impl. as a GE |

Pre-work: development, testing

Summary

- Current transparency systems:
  - Supply chain specific solutions / in many occasions loss of information when a product passes from one to the next supply chain actor
  - Transparency data available at the end of the chain
  - Depends heavily on labelling and certification

- The next generation transparency systems:
  - Transparency provision as a service by a third party transparency provider (TPTP)
  - TPTP collects data from supply chain actors
  - TTAM system based on global (GS1) standards
  - FI-WARE GE's need to support relevant standards

Thanks!

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