

Agricultural Data Exchange

KTBL workshop, 5 - 7 Nov. 2007, Hamburg

Dr.Ir. Sjaak Wolfert – The Netherlands



Presentation outline

- Personal background
- EFITA
- Agricultural Data Exchange
 - Playground
 - Some experiences from the Dutch 'KodA' project
 - Vision for the future
 - Main challenges
 - Ideas & proposals for the future

Sjaak Wolfert – who am I?

- 1990 – 1996: MSc Crop Science at Wageningen Agricultural University
- 1996 – 2002: PhD at Wageningen University, depts. of Organic Agriculture/Applied Computer Science (prof. Goewie/Beulens)
- 2001 – now: senior scientific researcher at Agriculture Economics Research Institute (LEI-WUR)
- research areas: systems analysis, modelling and simulation, sustainable development, organic farming, management support systems & ICT

Management & ICT in Agri-Food Supply Chain Networks

Research Group



Research Group – Management & ICT in AFSCN

- Dr. Sjaak Wolfert
- Prof. Adrie Beulens
- Dr. Wil Hennen
- Drs. Cor Verdouw
- Dr. Marco Verloop
- Ing. Henri Prins
- Drs. Tim Verwaart
- Ir. Ruud van Uffelen



Our elevator pitch



- We know what is going on in **Agri-Food Supply Chain Networks**
- We develop the right **ICT concepts and solutions**
- We emphasize that **agri-food business** should be in the lead and responsible

Sjaak Wolfert – who am I? (continued)

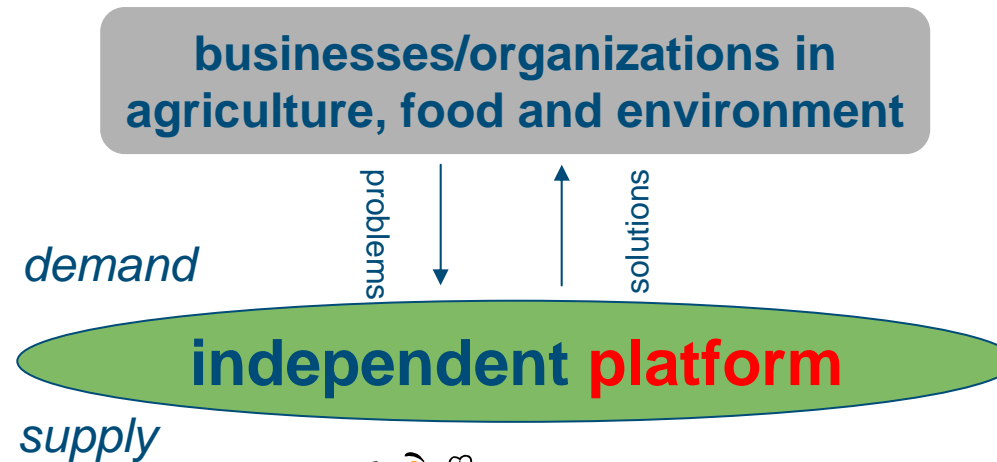
- President of the Dutch Society for ICT in Agriculture, Food and the Environment (VIAS)
- President of the European Federation for Information Technology in Agriculture, Food and the Environment (EFITA)



EFITA: European Federation for Information Technology in Agriculture, Food and the Environment

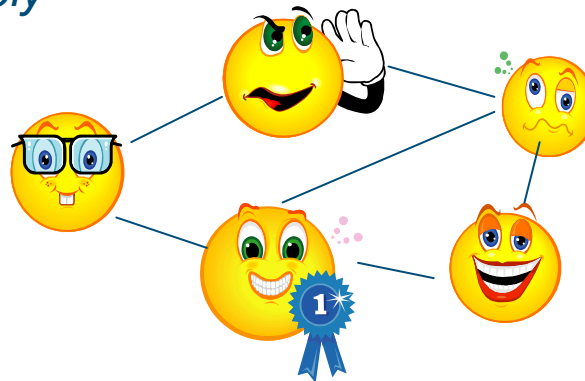
Dr. Sjaak Wolfert
President

Position of EFITA



what we are:

- **network** of agri-ICT-professionals
 - science-based
 - practice-oriented
 - interdisciplinary
- NMO's in 14 EU countries
- ...



what we can (help to) provide:

- state-of-the art RTD
- workshops, seminars
- living labs
- contact persons
- (EU)-funding
- dissemination of knowledge/information
- ...

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“The Beiselen IT-Strategy is in full swing with the switch-over to FlexFrame”

»FlexFrame enables us to optimally execute business strategy. The concept behind the infrastructure solution and team competence live up to the promise.«

Ingo Weidner, DV Org-Director, Beiselen GmbH

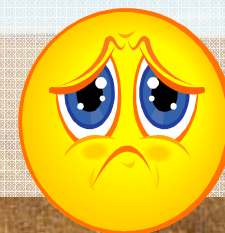


Dear Sjaak,

I talked to Beiselen to ask if they wanted to make some time free for you. They know AgroXML, but they don't work with it and neither do most of their farmers. Most data from farmers is delivered on paper or by excel-sheets. According to them, farmers won't invest in it if they don't get anything back from it. For these reasons they thought it didn't make sense to travel all the way from Hamburg to Magdeburg to visit them.

Best regards,

Caroline Dekker, Meneba



BARO

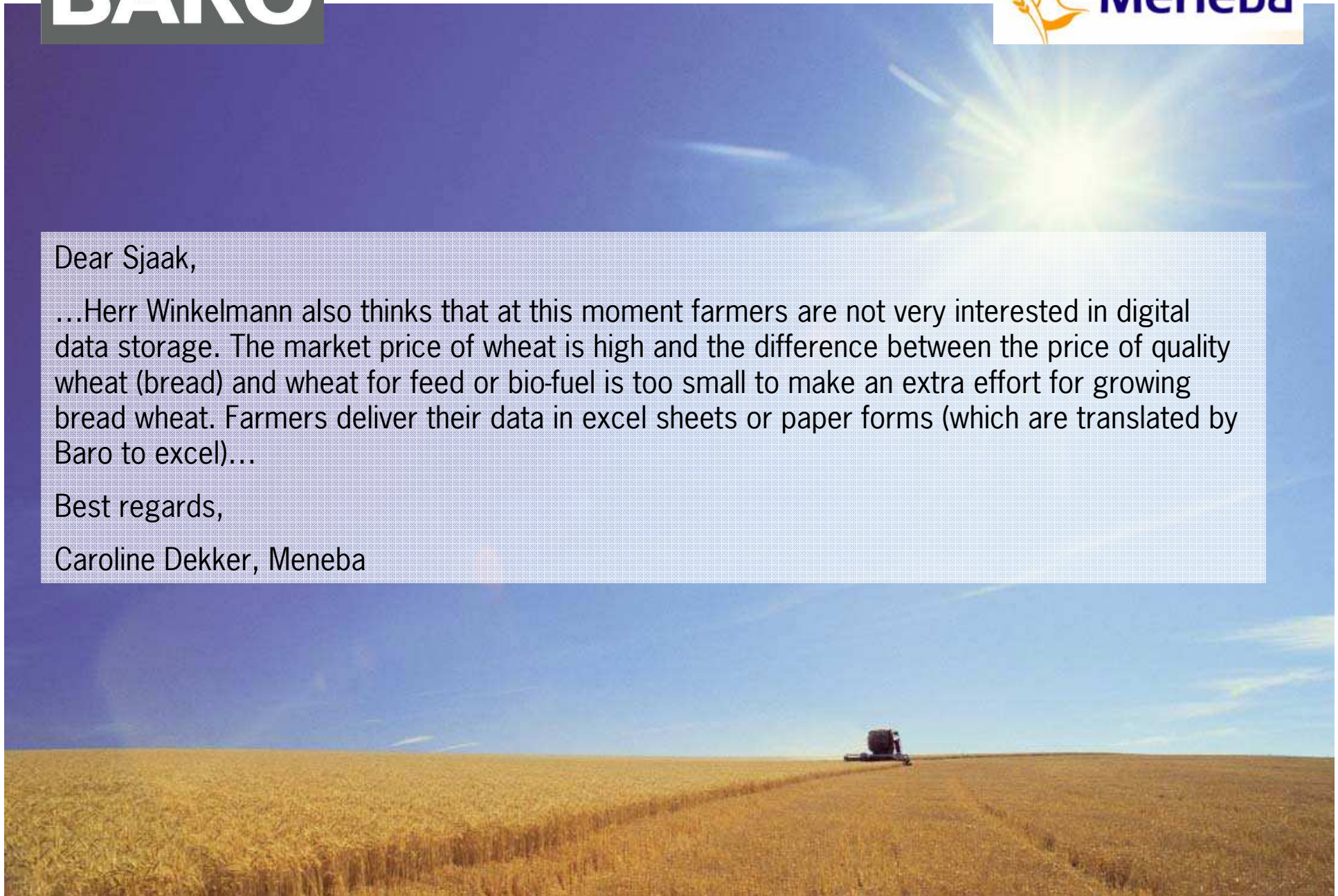


Dear Sjaak,

...Herr Winkelmann also thinks that at this moment farmers are not very interested in digital data storage. The market price of wheat is high and the difference between the price of quality wheat (bread) and wheat for feed or bio-fuel is too small to make an extra effort for growing bread wheat. Farmers deliver their data in excel sheets or paper forms (which are translated by Baro to excel)...

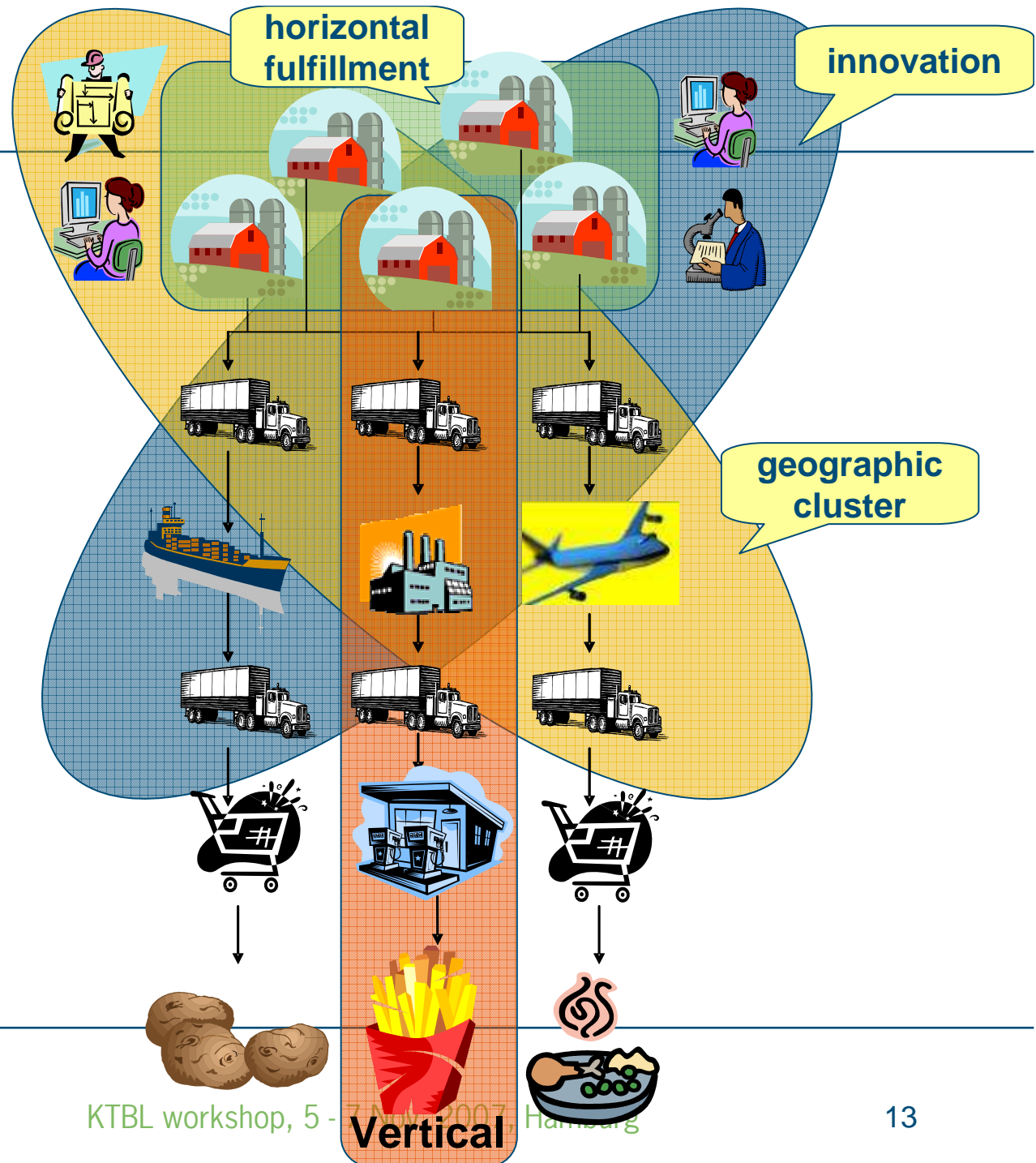
Best regards,

Caroline Dekker, Meneba

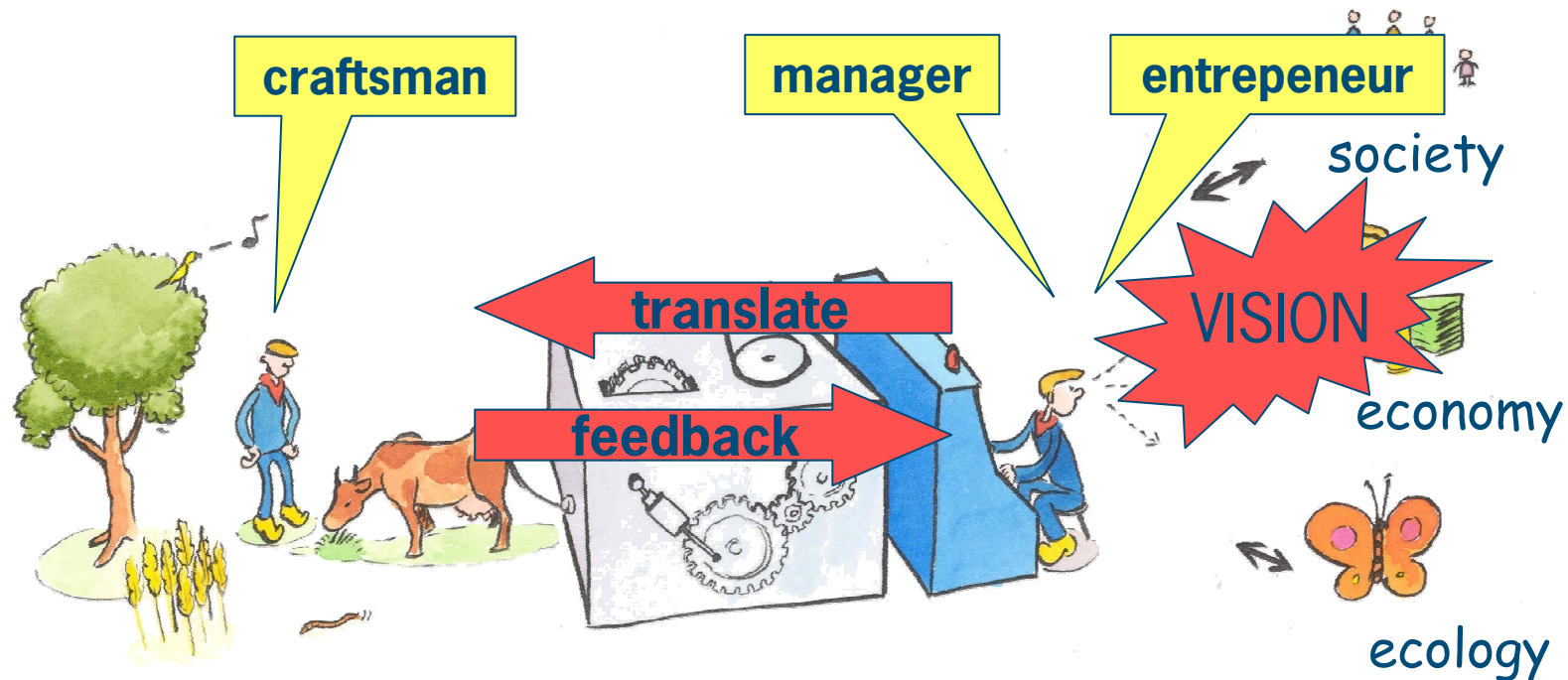


multi-dimensional Agri-Food Supply Chain Networks (AFSCN)

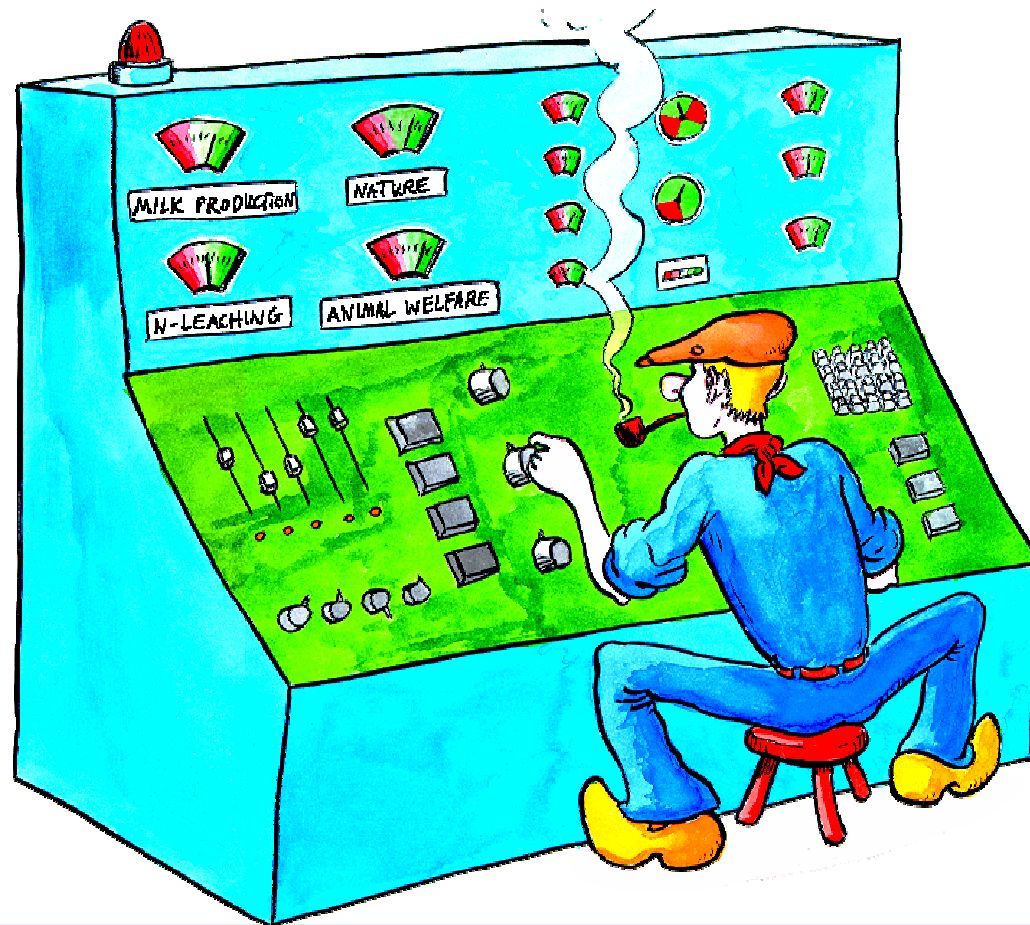
- information for communication and control
- ICT plays a crucial role



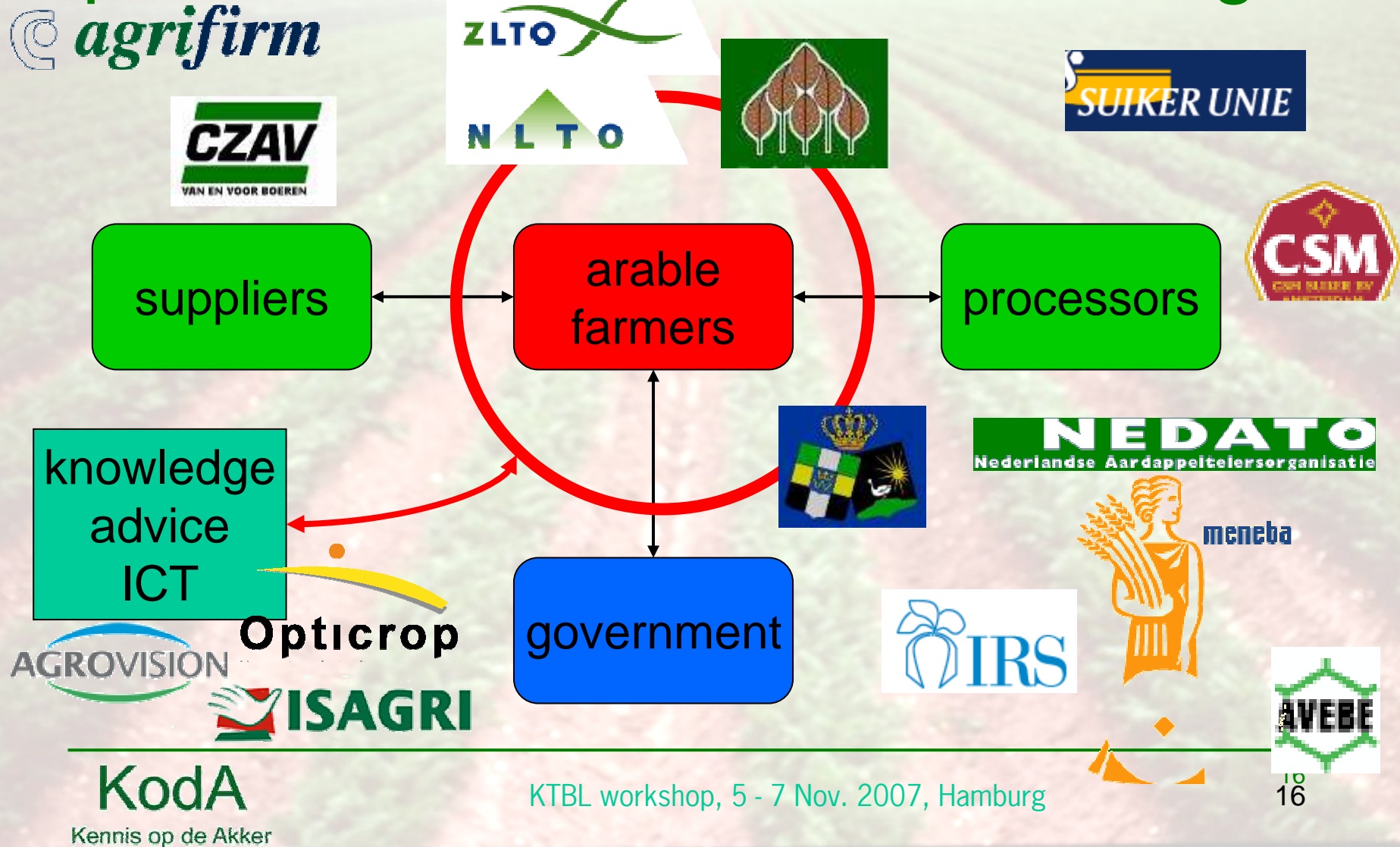
Sustainable Agriculture: how to make it work?



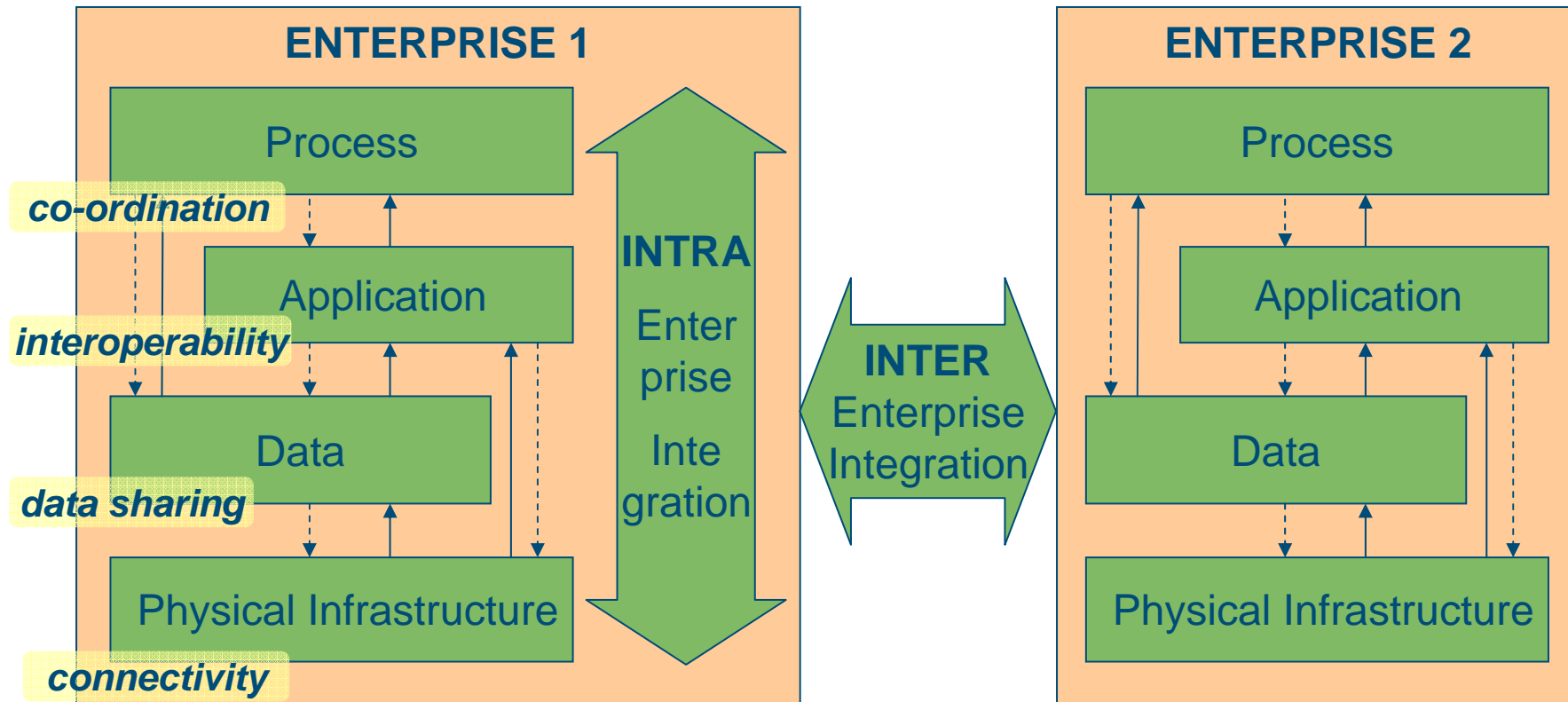
Monitoring and control



KodA: from knowledge to practice for Dutch arable farming



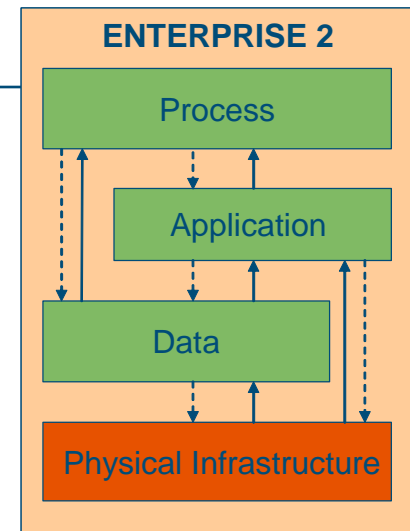
Integration Framework



Adapted from Giachetti 2004

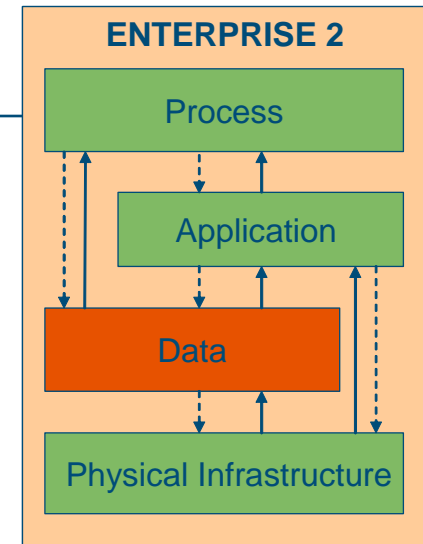
Physical integration standardization

- connection between devices:
 - computers, machines, products, ...
- standards:
 - 1. interface: PLC, RFID
 - 2. communication:
 - network protocols: TCP/IP & PPP
 - transport protocols: HTTP, FTP, SMTP



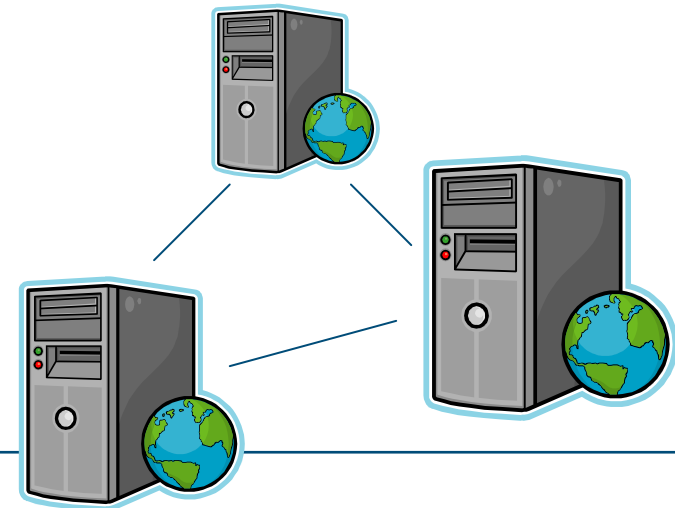
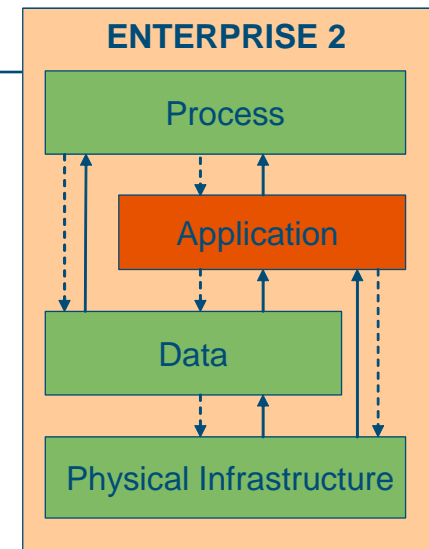
Data integration standardization

- message format and data definitions
- XML has replaced EDI
- intra-enterprise: article coding (EAN), STEP
- inter-enterprise: eCommerce
 - former: EDIFACT, ANSI X12
 - now/future: ebXML = set of standardized XML messages for transactions, business relations, etc.



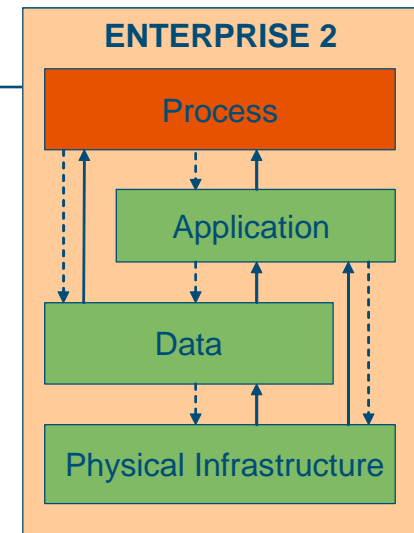
Application integration standardization

- between applications: one app calls another and receives on-line response
- several applications are considered as components of one aligned system
- intra-enterprise:
 - former/now: ERP
 - now/future: web services

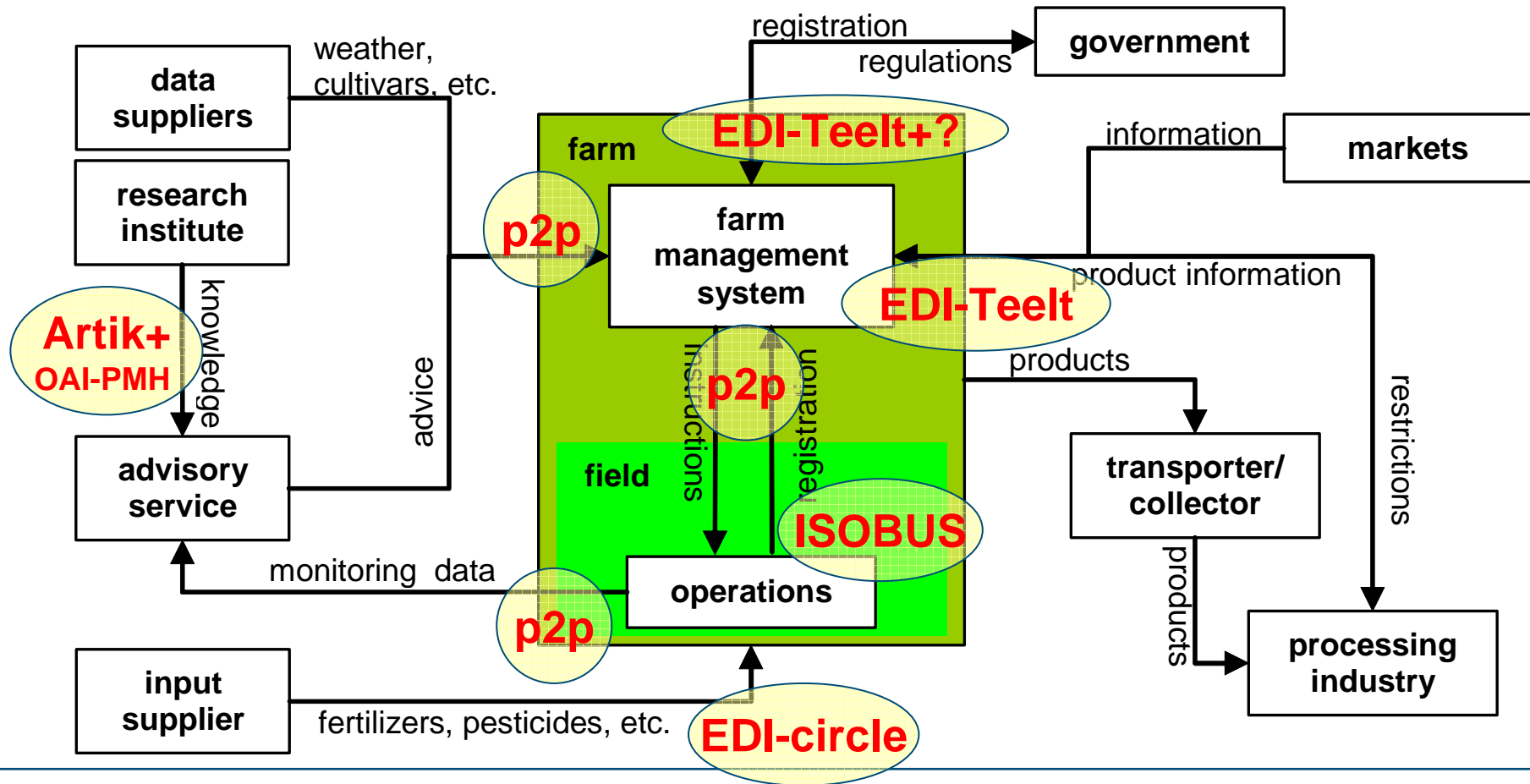


Process integration standardization

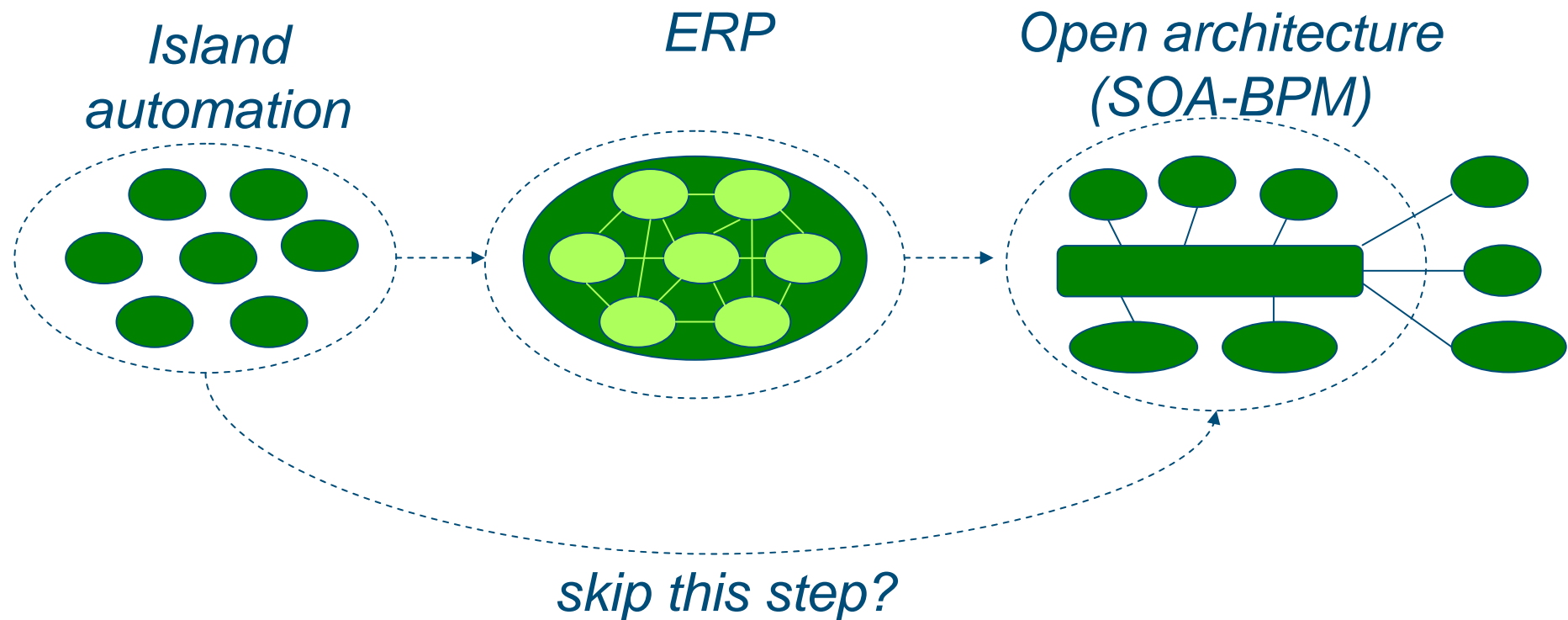
- reference process and data models
- intra-enterprise: CIMOSA, ERP-ref. models (SAP, Infor), ISA-95
- inter-enterprise: VERA, SCOR, CPFR



Current situation 'arable NL'



ICT developments in general business

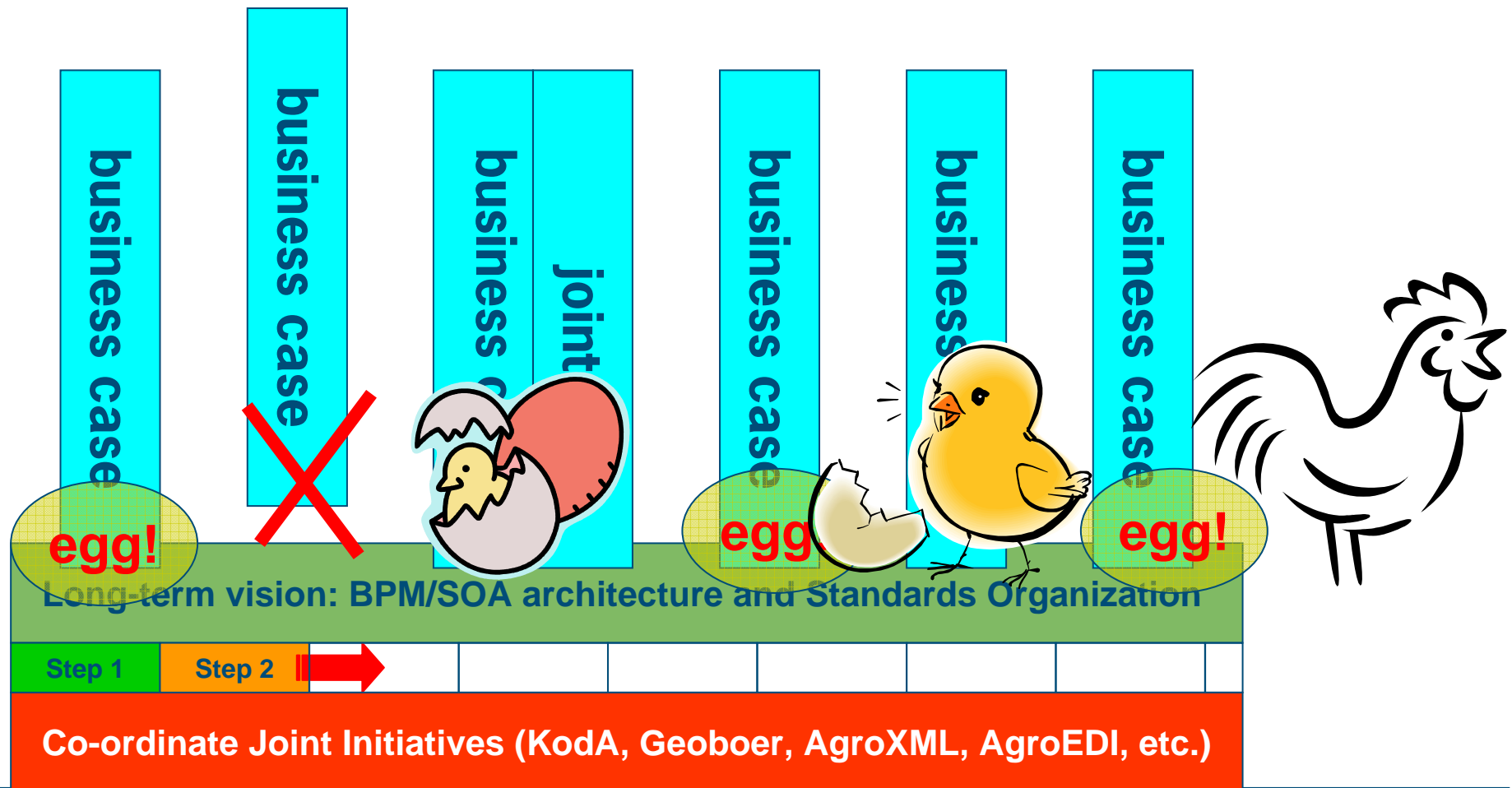


Vision for the future

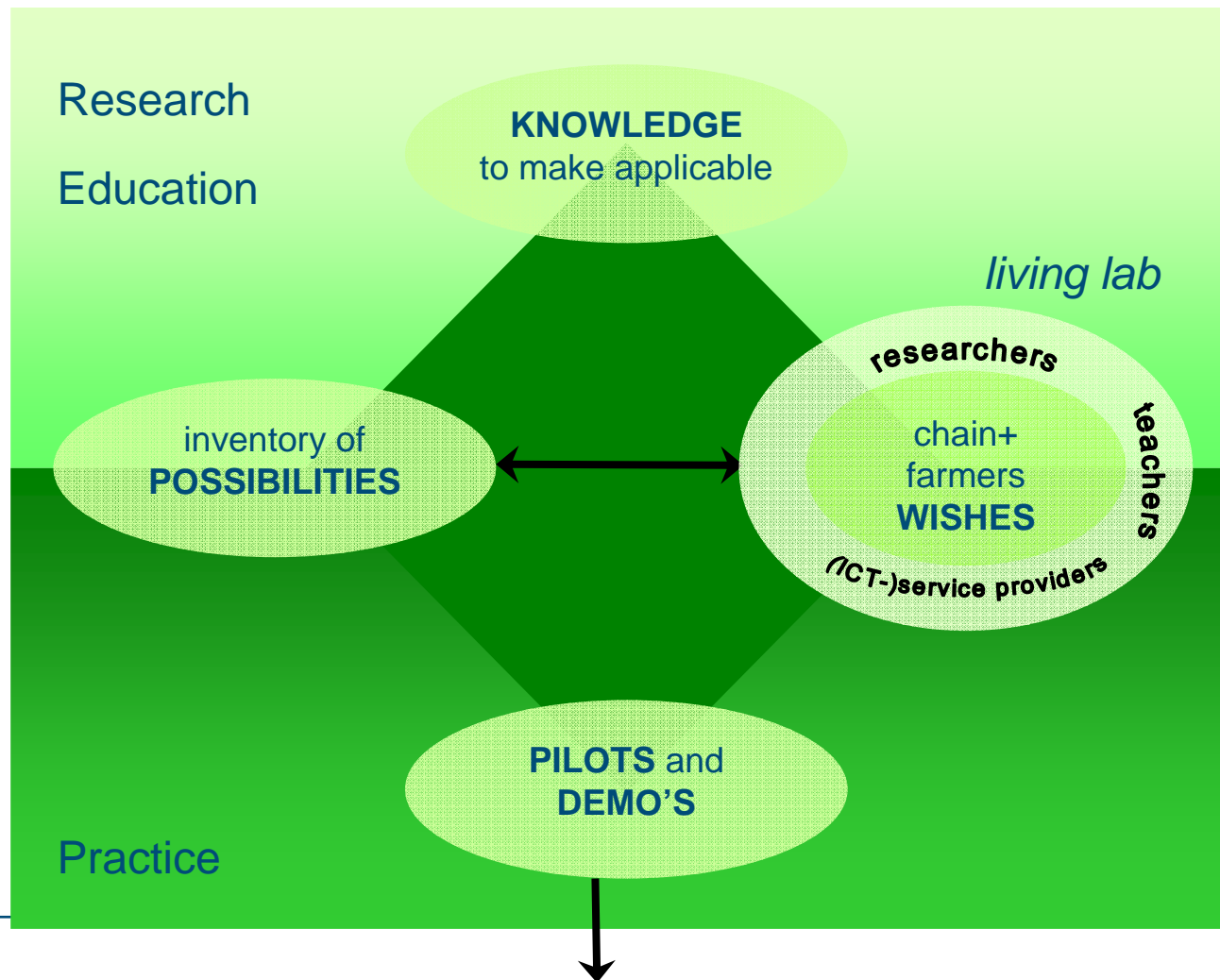


- **Business** in the lead and responsible!
 - Human and organizational change
 - Commitment and vision at both 'CEO-level' and 'workers level'
 - Co-operation and co-ordination in all dimensions of AFSCNs (as much as possible)
- Business **processes** must be leading
 - Rapid re-configuration approach using dynamic modelling and component repositories
 - Based on Business Process Management (BPM) and Service Oriented Architecture (SOA)
 - Alignment of and interdependency between all integration types and levels
- Sector-specific, **open models and standards**
 - Based on cross-industry models/standards (e.g. OpenGIS, ebXML, XBRL)
 - Standards organizations
 - execution by (ICT) consultants
 - innovation by researchers

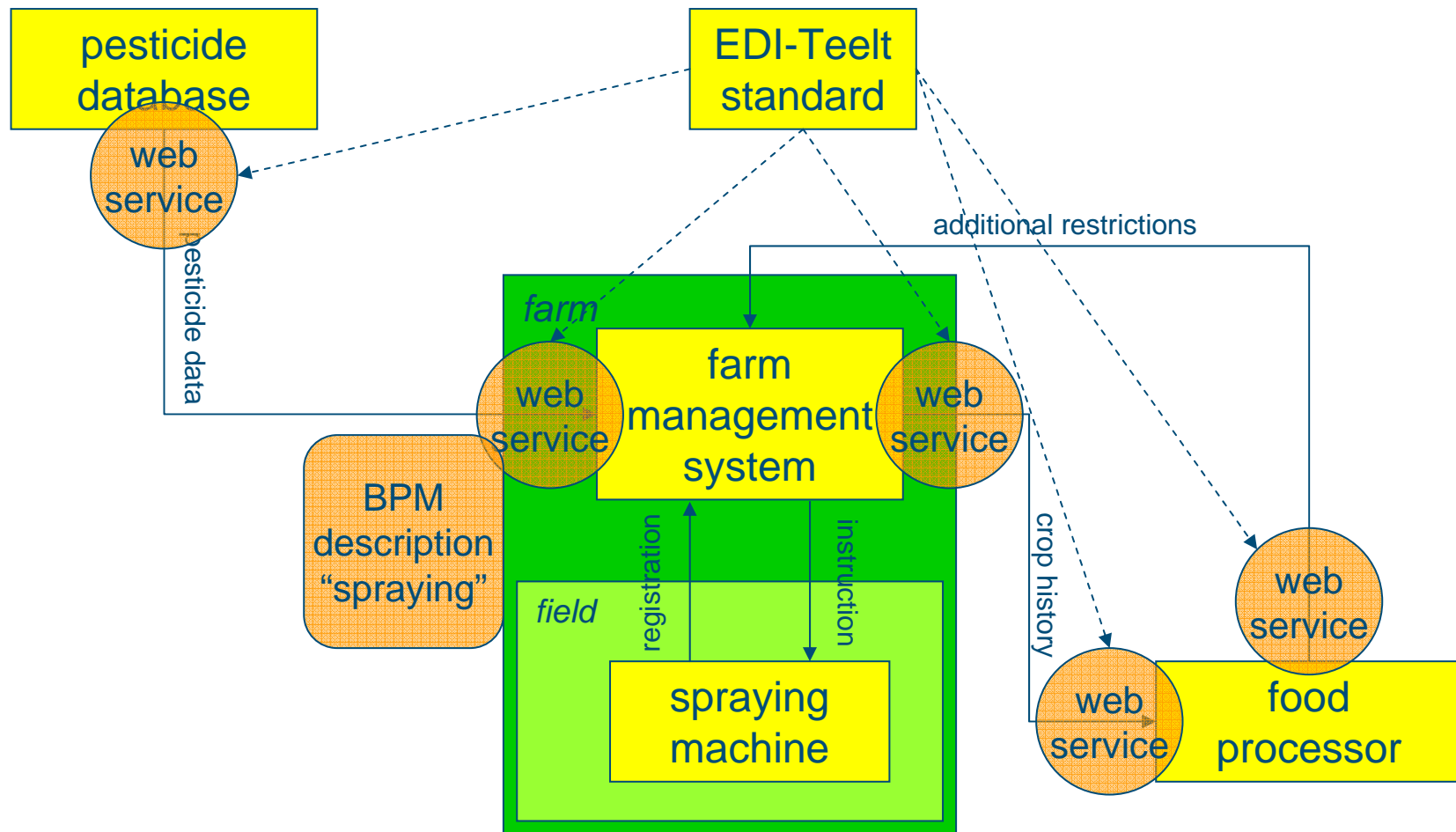
Solving the chicken-egg dilemma: organic growth



Living Labs



KodA I&S: pesticide case



Main challenges

- How to construct **sector-specific SOA-architectures**, adopting worldwide cross-industry standards and building upon **existing industry standards**?
- How to use **business process management (BPM)** concepts, including 'best practice' models, to allow flexible configuration of specific processes integrations?
- How to organize **broad commitment**, to embed developments in sustainable institutional arrangements, and to **let it grow organically**?
- **Concerted Action** is needed for coordination and knowledge exchange in different sectors and in different countries at the European level

Ideas, proposals for the future

- Set up an EU actions on 'Information Integration and Standardization' for knowledge-exchange and co-ordination
 - FP7 – concerted action project?
 - Interreg-IV-C?
 - Competitiveness and Innovation Programme (CIP) – thematic network
 - use EFITA as a vehicle?
- Involve EU agri-food businesses
- Unite initiatives: EDI-teelt (NL), AgroXML (DE), AgroEDI (FR), ...?
- Next step: EU-RTD projects





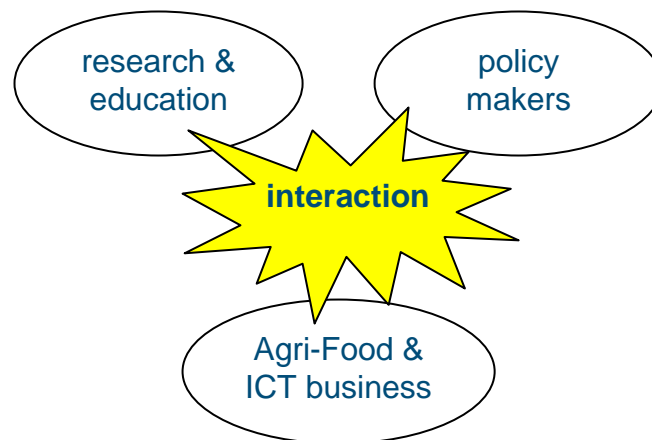
Joint International Agricultural Conference

6, 7 and 8 July 2009, Wageningen



■ Thematic priorities

- Harmonization of Agricultural Data Exchange?!



Thank you for your attention!

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