Future challenges for information integration in Agri-Food Supply Chain Networks

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The Netherlands

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

Dr. Sjaak Wolfert
President

Position of EFITA

businesses/organizations in agriculture, food and environment

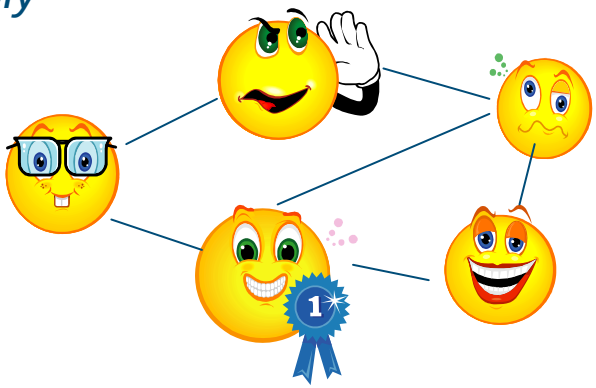
problems

solutions

demand

independent platform

supply



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
- …

Management & ICT in Agri-Food Supply Chain Networks

Research Group

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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

Key note

Business (process) is leading!

Presentation outline

Future challenges for information integration in AFSCN

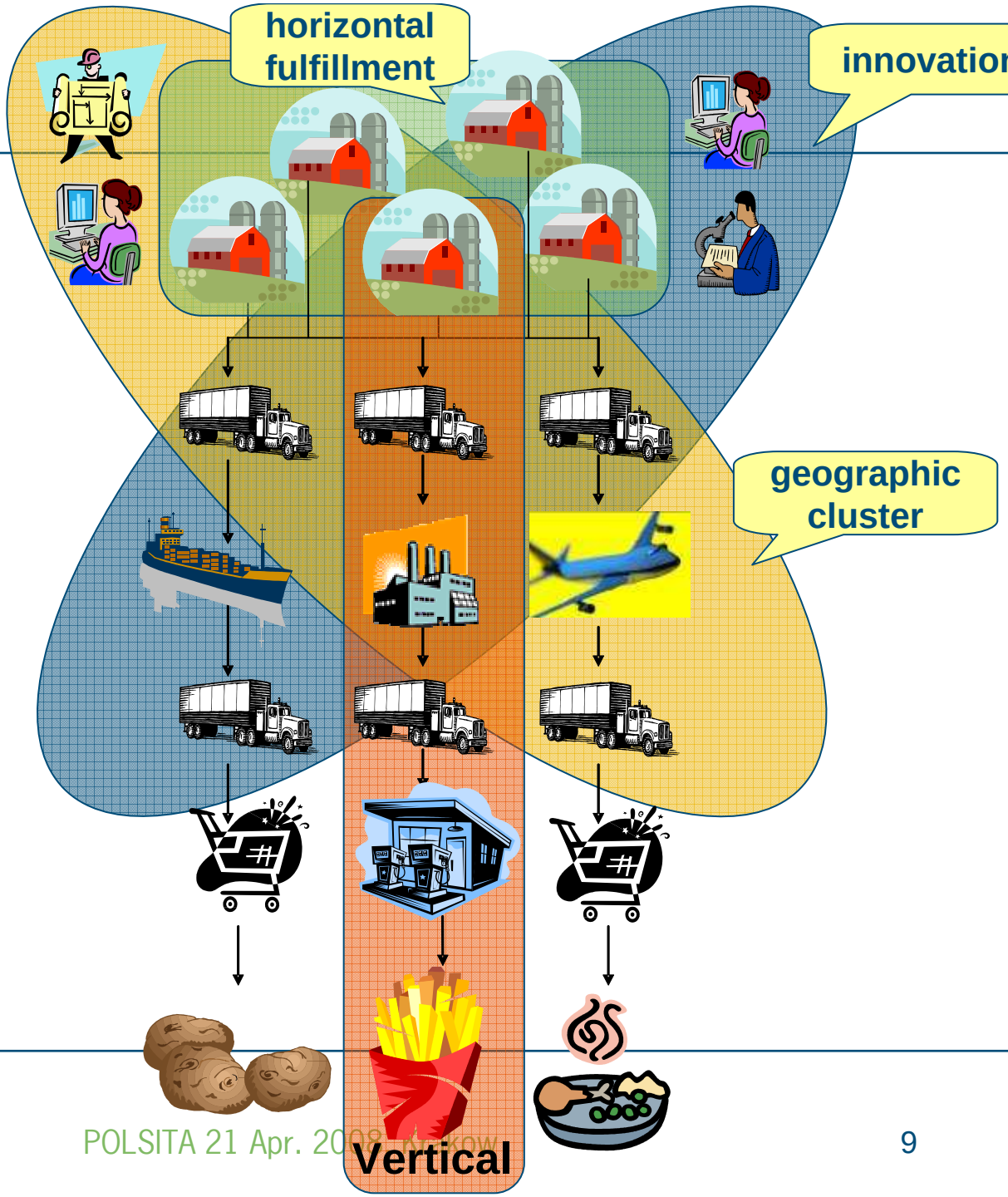
- Context and problem description
- Conceptual framework
- Some results from on-going research
- Vision for the future
- Some experiences from the Dutch 'KodA' project
- Main challenges
- On-going developments: agriXchange, EFITA2009

Challenges in agri-food business

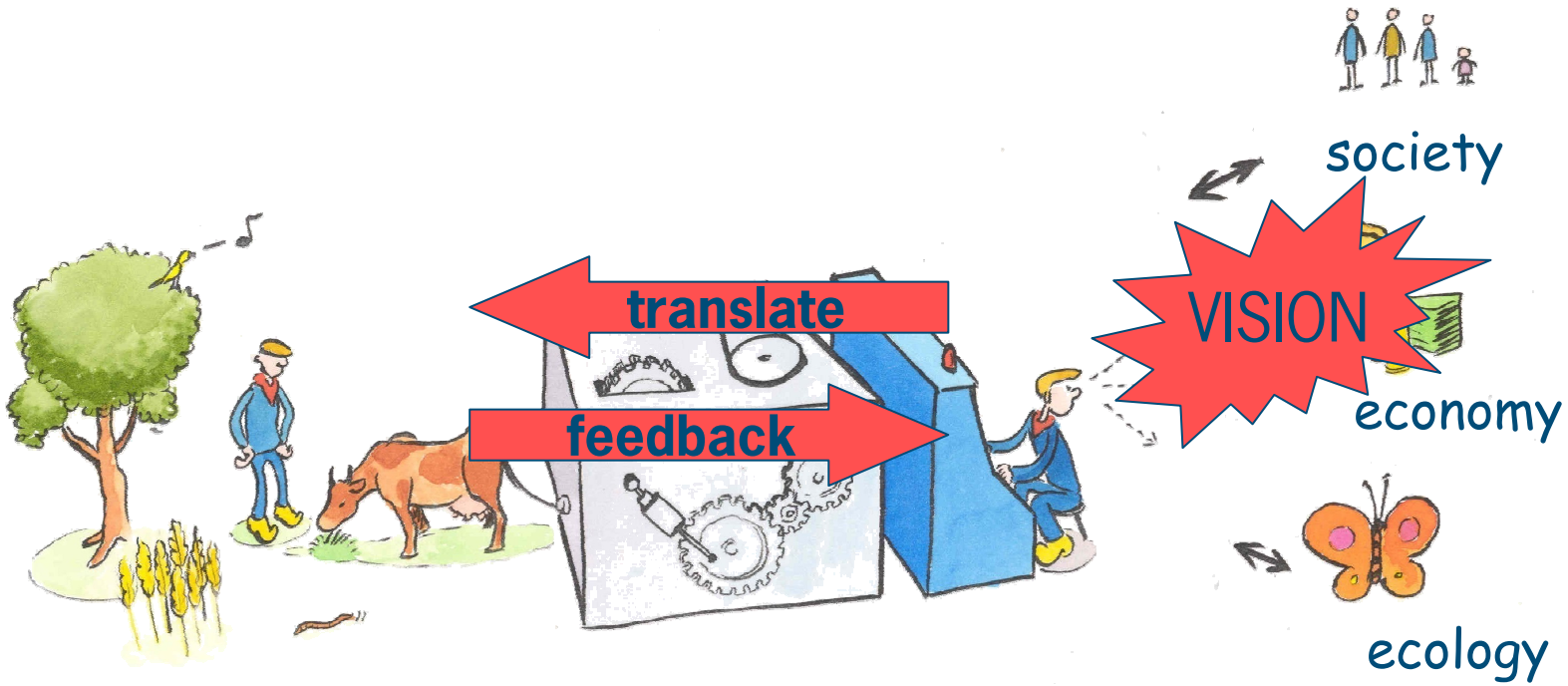
- Sector-specific characteristics include:
  - Fresh products
  - Seasonable production
  - Many SMEs particularly at farm
- Main challenges
  - 'license to produce'
    - consumers & society
    - food safety and transparency
  - Global competition (EU, WTO)
  - Demand-driven
  - Innovation: knowledge-based production
- Operate in multi-dimensional, dynamic networks

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

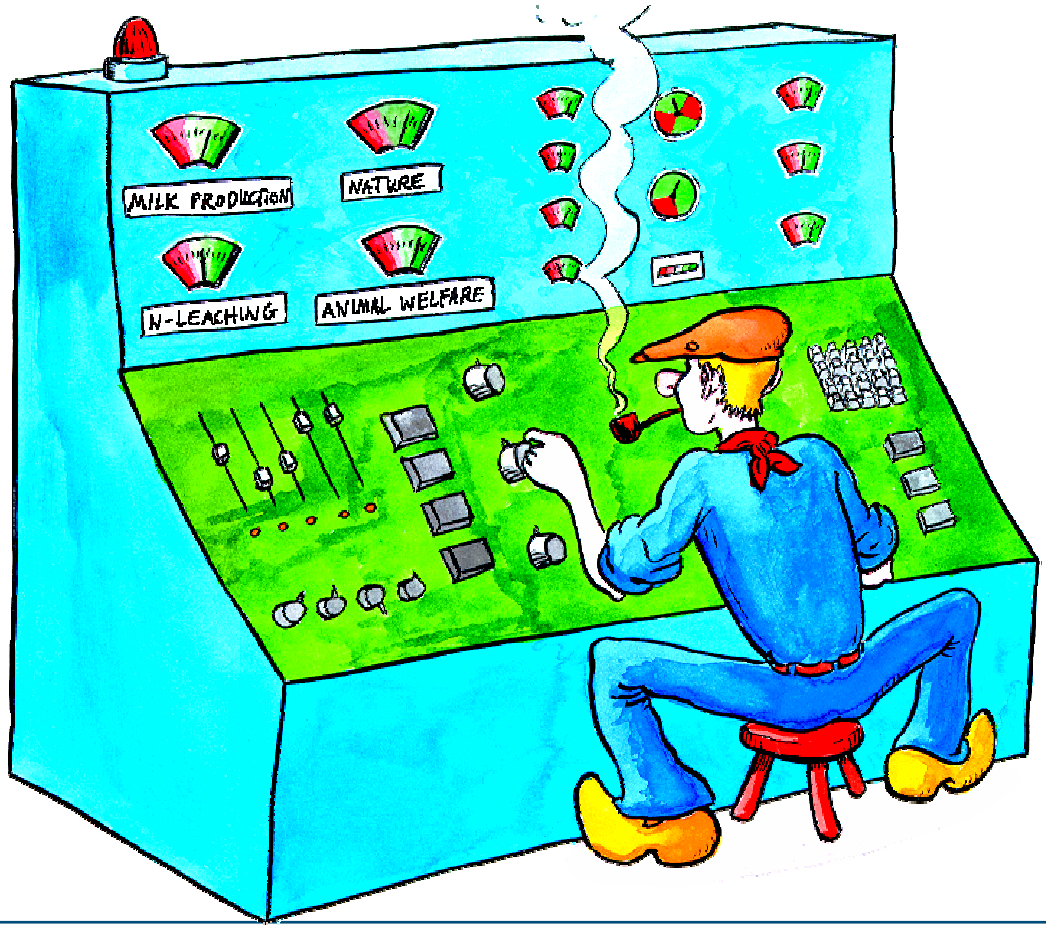
- information for communication and control
- ICT plays a crucial role



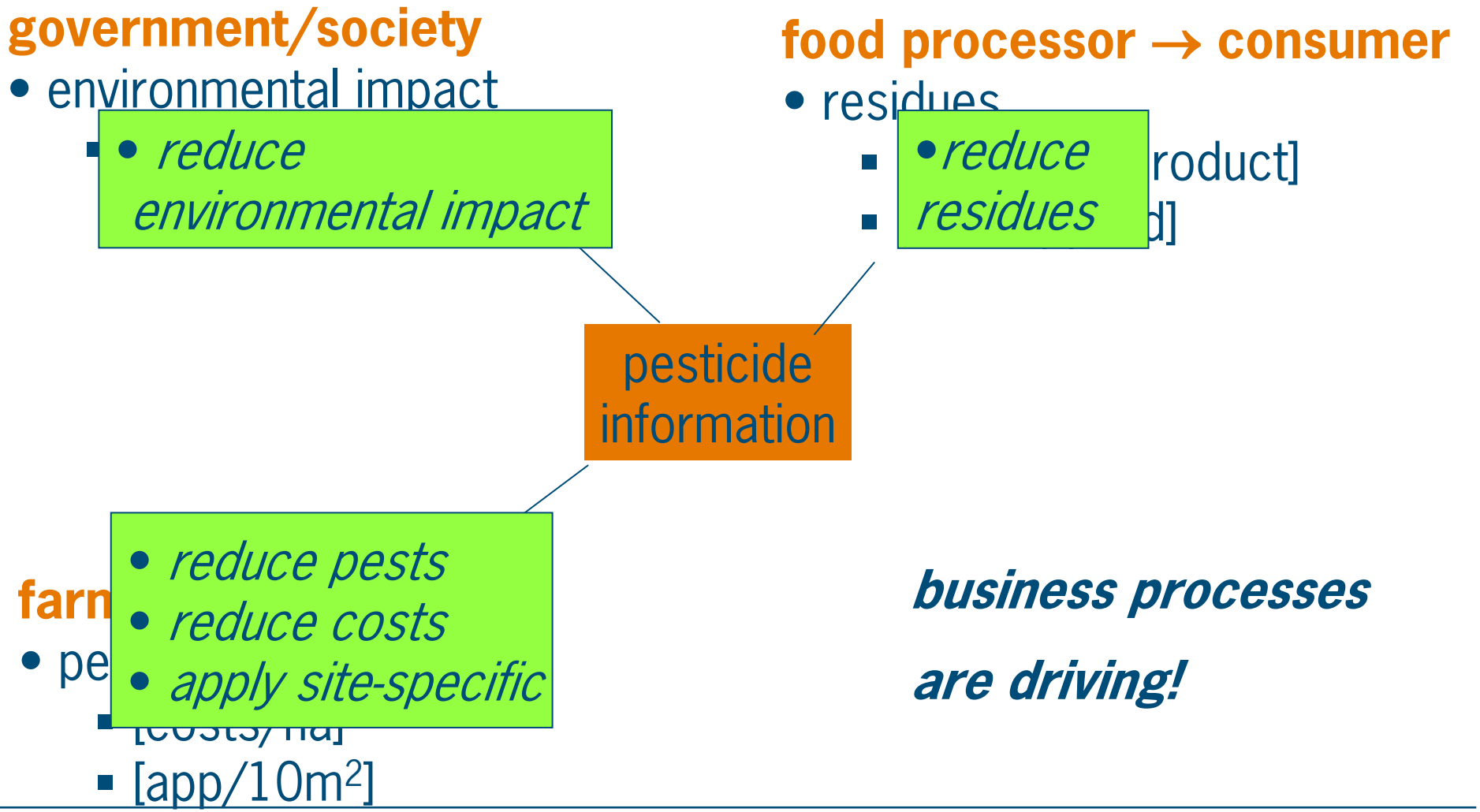
Sustainable Agriculture: how to make it work?



Monitoring and control



Problem definition by example for pesticide application



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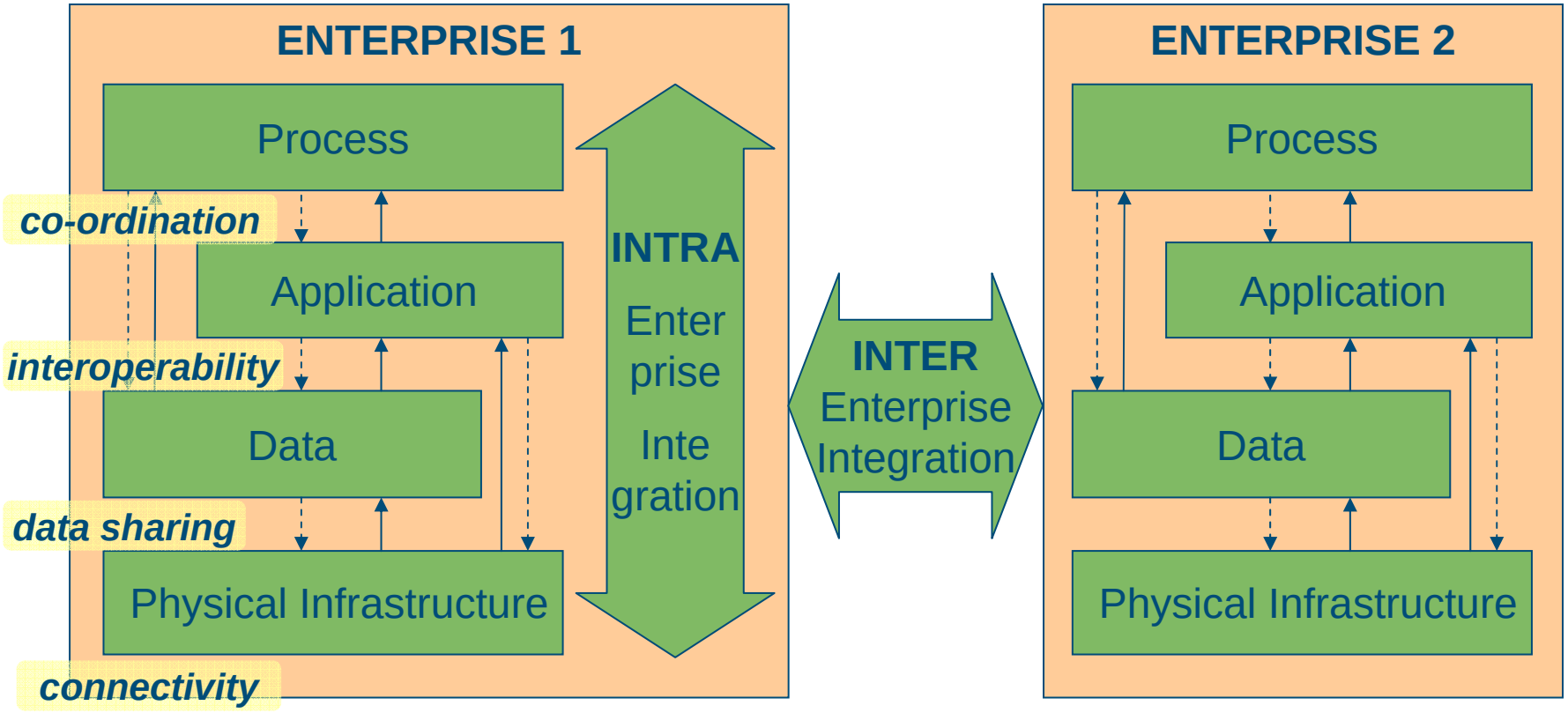
Information Integration Framework



Adapted from Giachetti 2004

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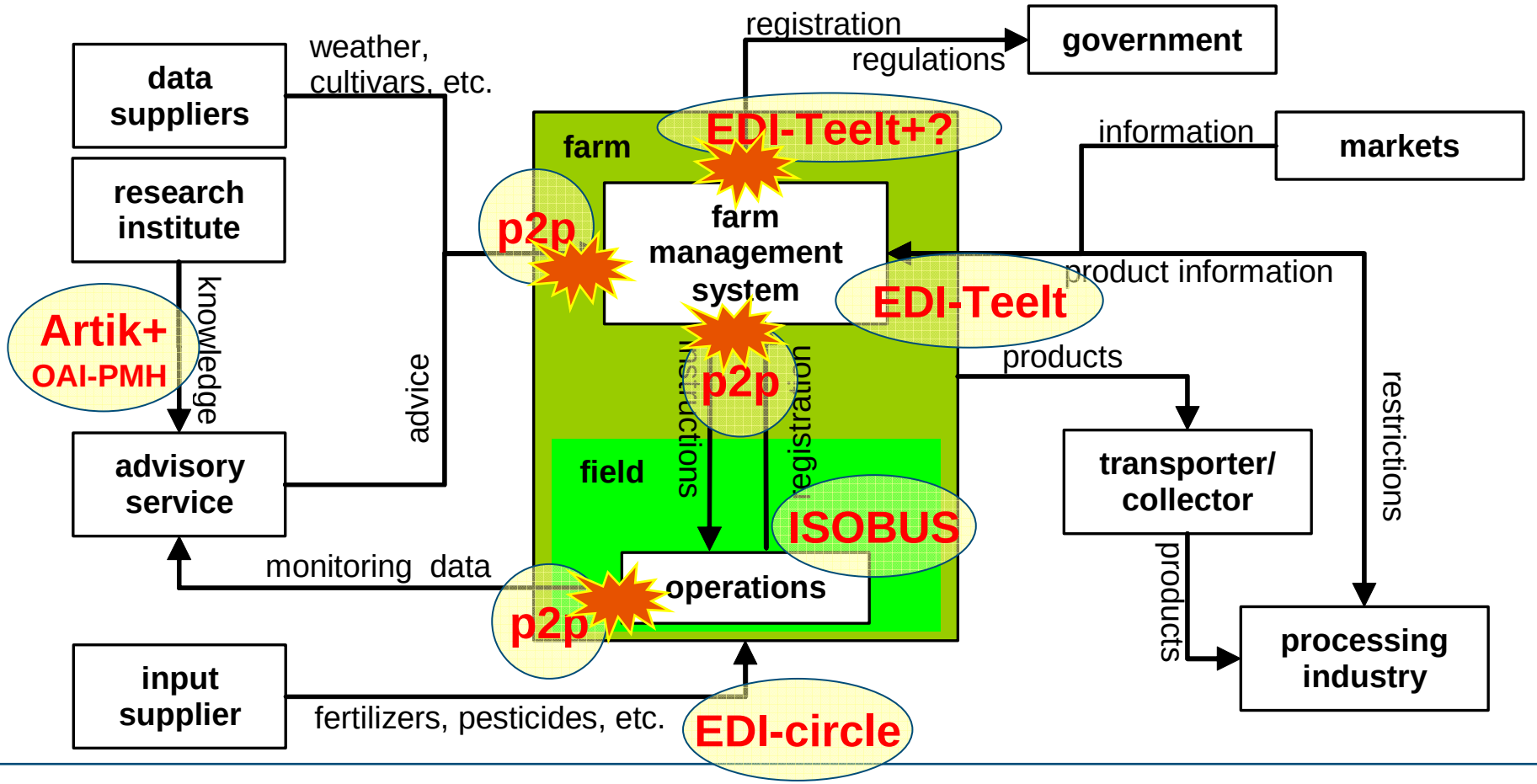
Current situation arable NL: many point-to-points



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Vision for the future – design spec's

- 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
- 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)
- Sector-specific, open models and standards
  - Based on cross-industry models/standards (e.g. OpenGIS, ebXML, XBRL)
  - Standards organizations

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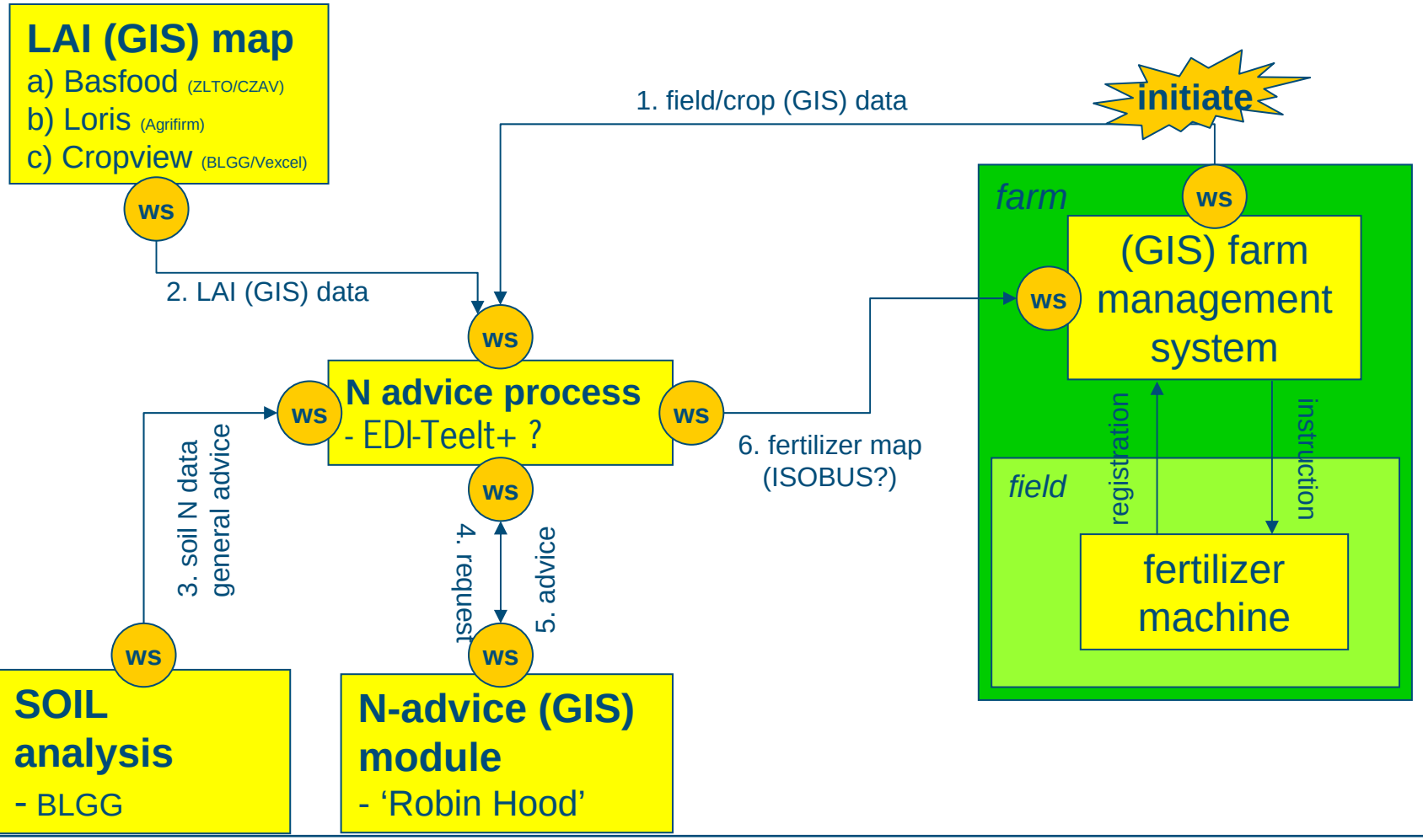
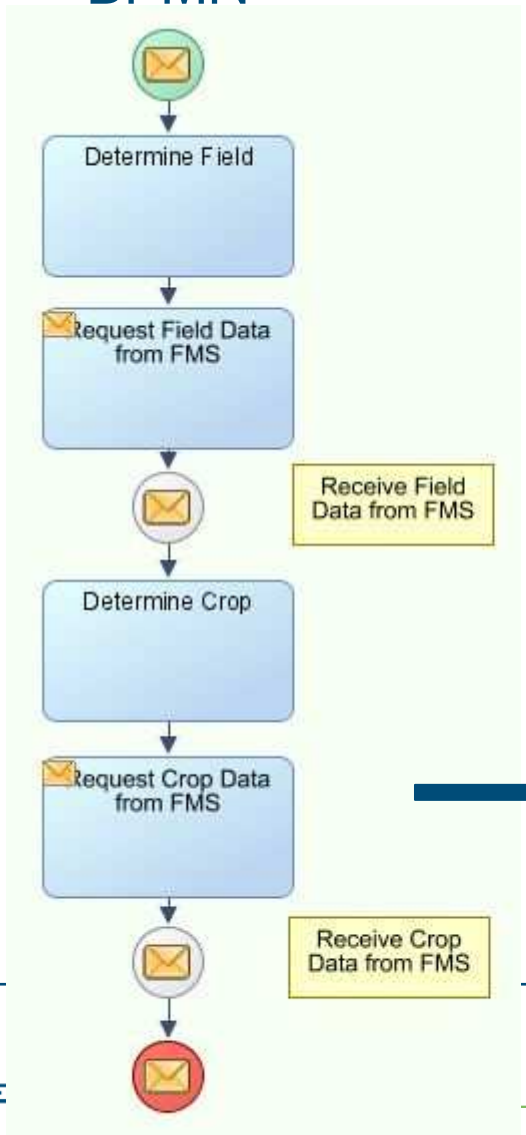
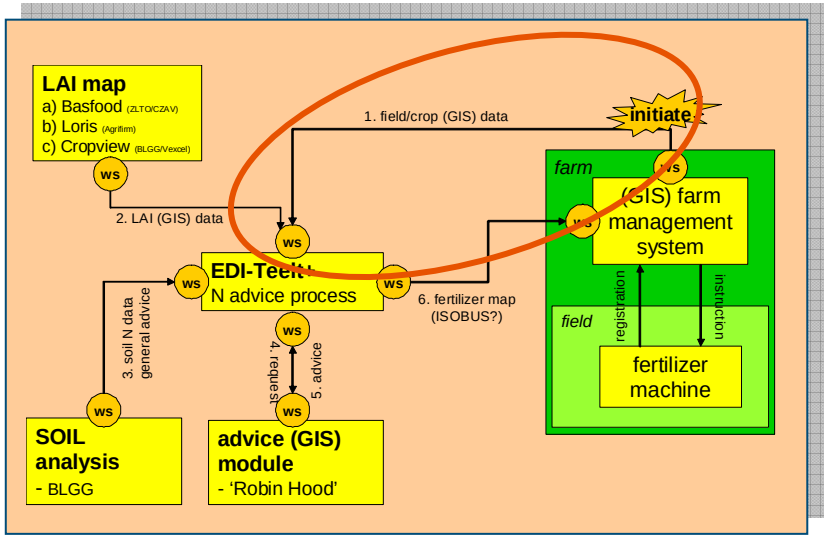
KodA I&S: geo-fertilizer advice



Obtain field and crop data: BPMN to webservice

BPMN





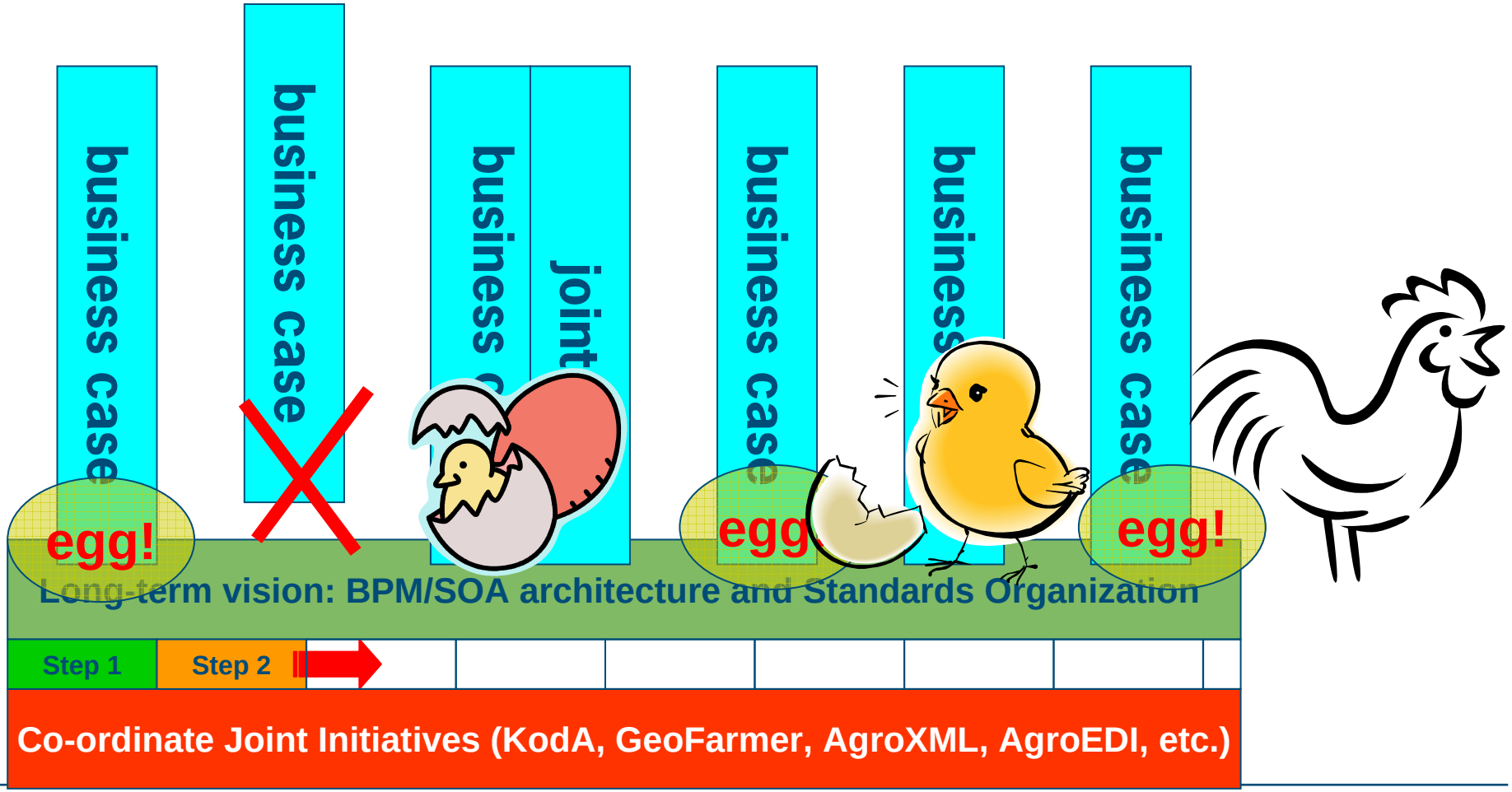
BPEL code → web service

Keys for development

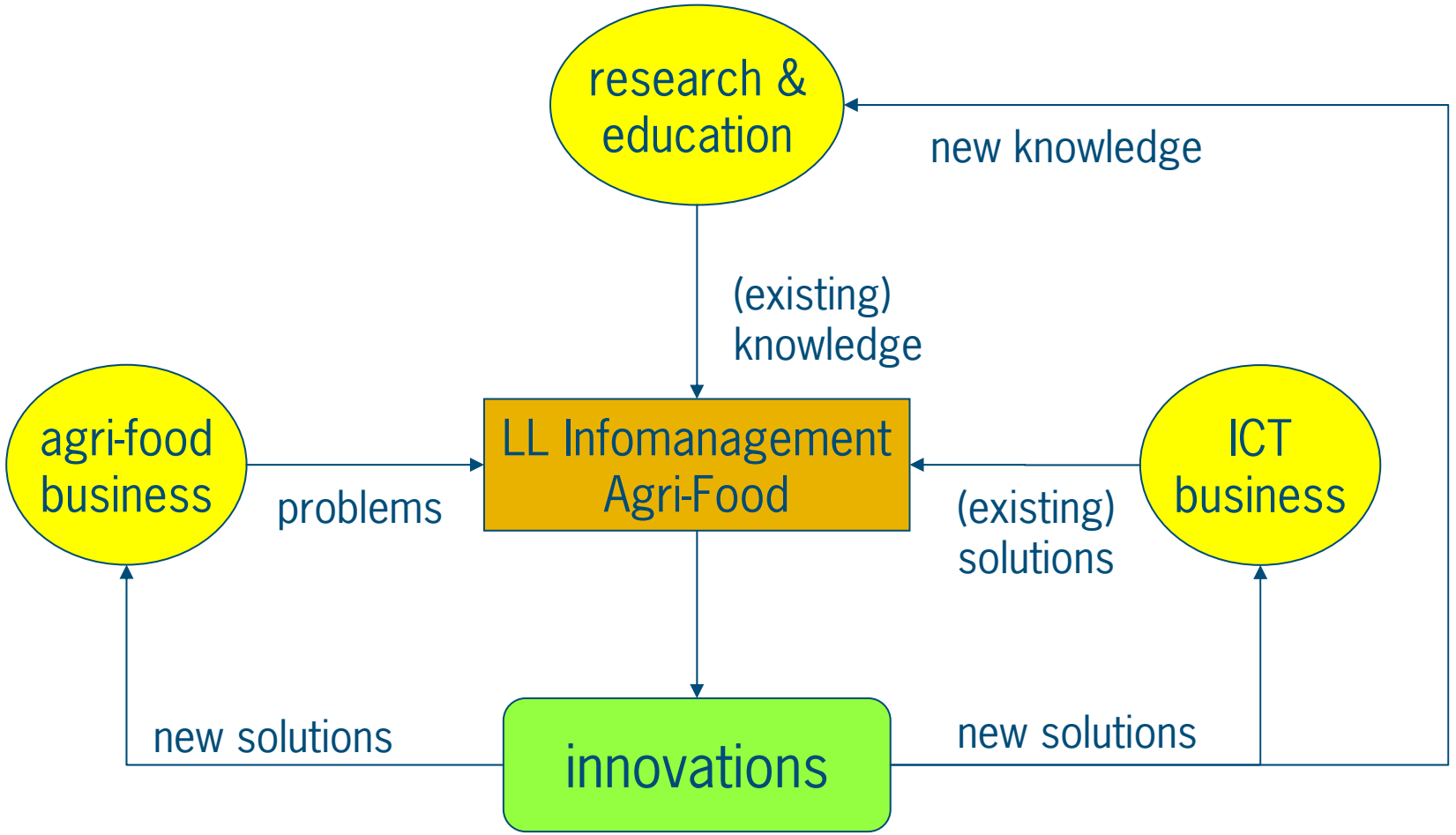
keys:

- business processes are leading
- involves several actors → platform independent approach
- many processes/webservices
  - need for architecture
  - need for central co-ordination on:
    - standards
    - ownership
    - quality, availability, etc.
- Software as a Service (SaaS)

Solving chicken-egg dilemma: a golden egg approach



Living Lab Information Management in Agri-Food



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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 (including the end of the chain!), 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

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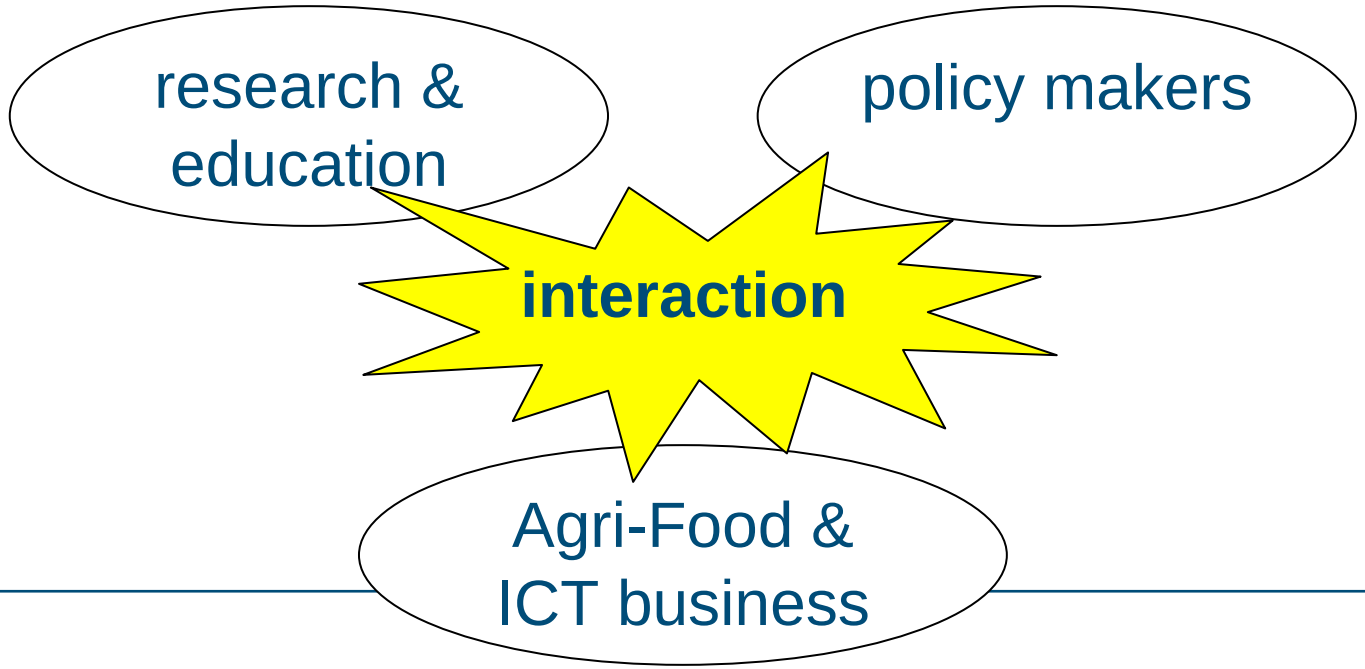
agriXchange

- Group of people, working on harmonization of agricultural data exchange at a European and global level
  - animal focus group
  - arable group with temporarily a special focus on spatial data ➔ SDIC for the INSPIRE directive
- Founded in Hamburg, november 2007
- Supported by EFITA and CEN\Agro
- Next meeting 13 May 2008 in Praha, embedded in the International Conference on Information Systems in Agriculture and Forestry
- Aiming at setting up a EU concerted action project (or SCP)

- Call for abstracts: expected in April/May '08
- Look at www.jiac2009.nl



Thank you for your attention!

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