



## **NORDIC ICT FORESIGHT**

**Views on the ICT applications based on the earlier material**

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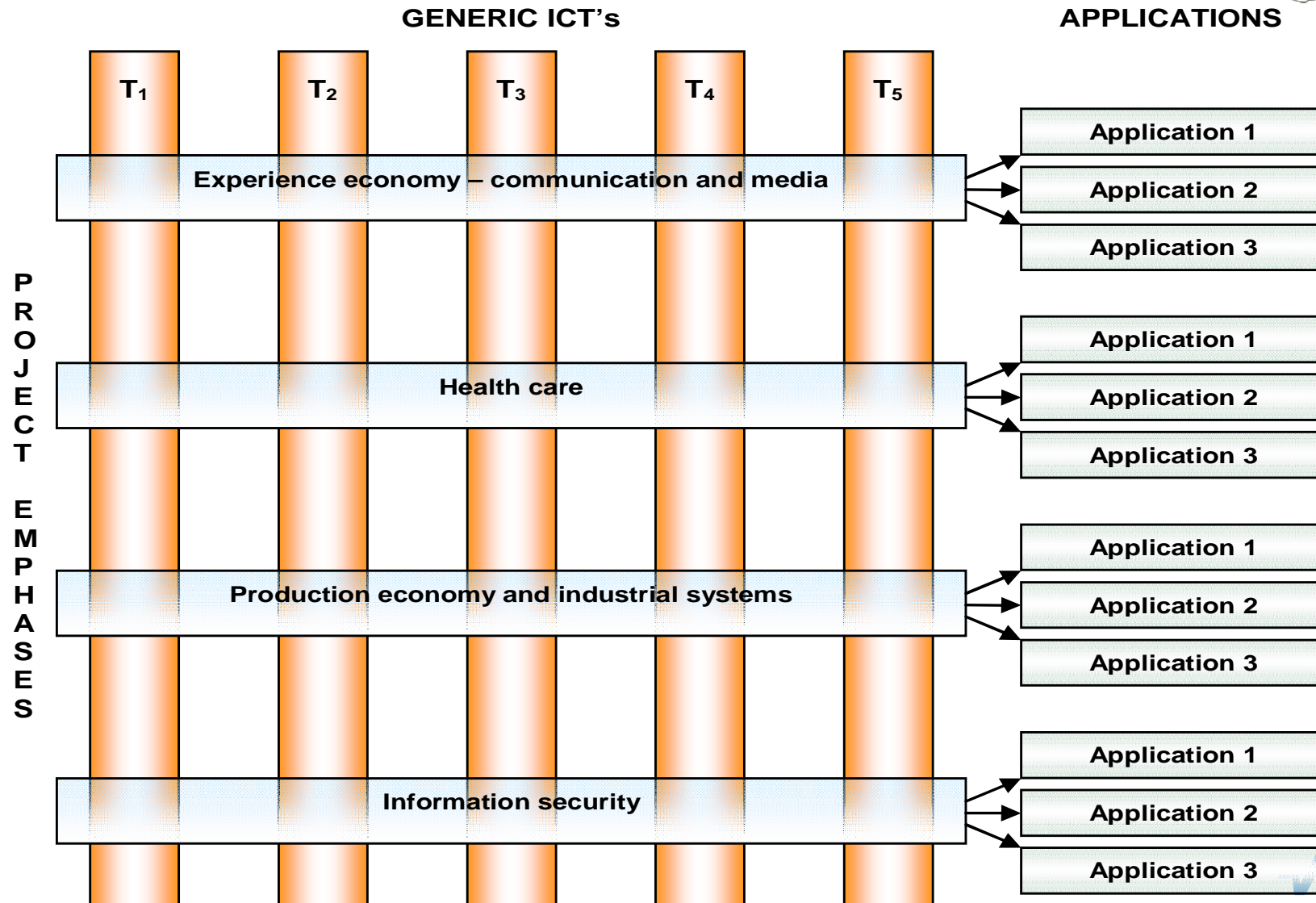
**VTT Technical Research Centre of Finland**

**Technology Foresight and Technology Assessment**

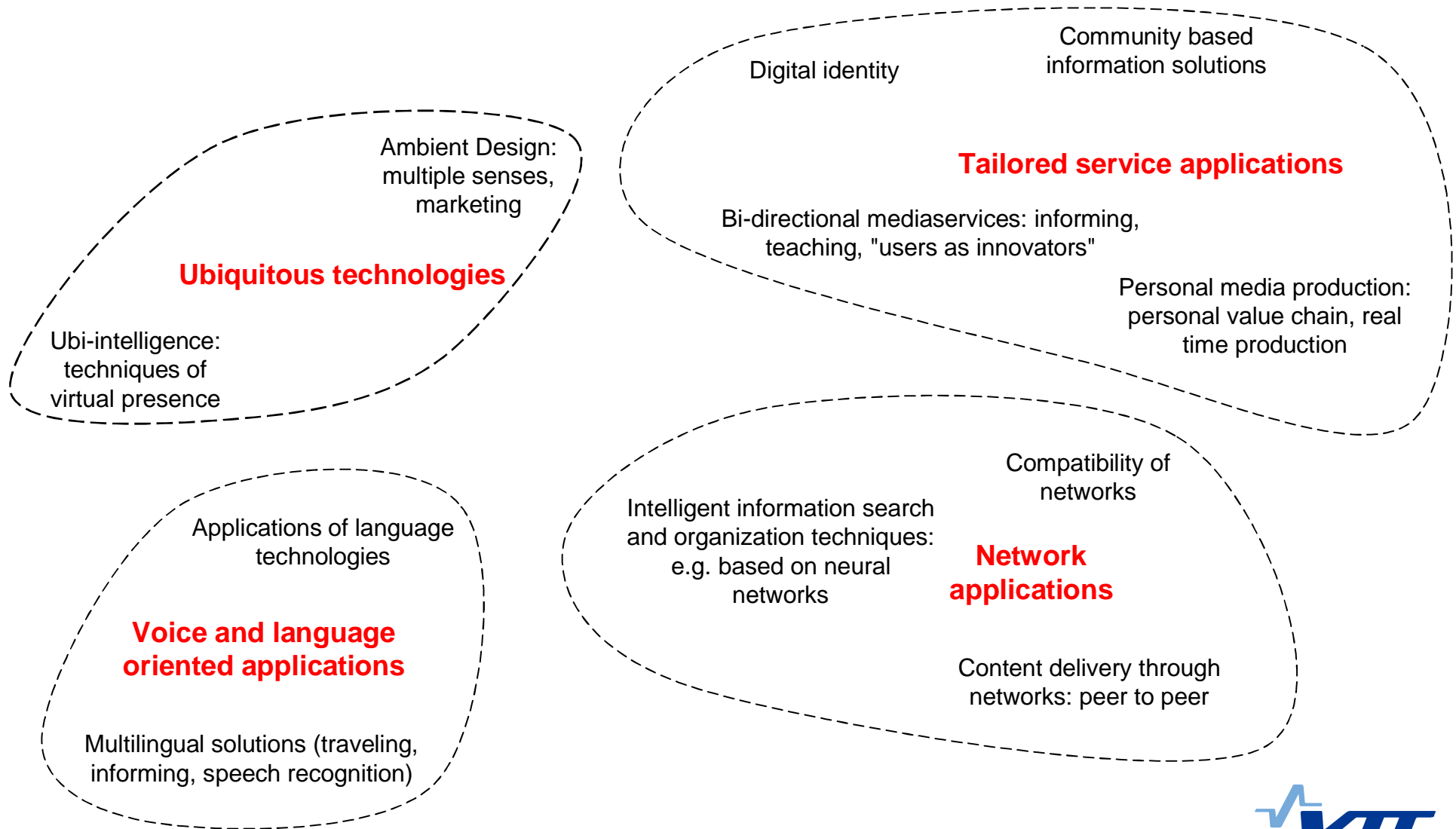
**30.5.2006, Hanasaari**



# Technological perspective of the project



# Experience economy I



# Experience economy II



Group phone calls      Global media network: you can see your favourite show anywhere

**Communication services**

Digital me      Free services with different devices

Expression and performance of civil rights via networks: voting, taxes      Mobile ID-TV

Intelligent paper and intelligent package

"Talking paper": sound + still image

**Hybrid media**

Tailored news: printed either to communication device or local printing service (communal printing)

Combinations of printed and electronic media: e.g. 2D code that is readable via camera mobile phone which connects the mobile phone to database

Home robots

**Technical solutions**

RFID tags      Printable electronics

Silent computer and digital technology: without background noise or humming

**Voice and language oriented applications**

Simultaneous translation services

Games

**Entertainment**

"Edutainment"

Games based on mobile positioning

Enhanced reality      Home virtual environments

**Virtual environments**

Multisensory environments and virtual learning platforms



# Health I



General ICT applications in health: pattern recognition, ubicomputing, mobility, hybrid media, dosing...

ICT based diet and nutrition systems

## Diagnostic and treatment applications

Chip laboratories

Virtual diagnostics, distance diagnostics

Nano / picosensors

Gathering and analysis of information: diaries, training calendar, prevention

Systems that monitor and assist elderly people living in homes: controlling the changes in health, monitoring day-to-day activities

## Personal healthcare, "home medicine"

Vital sign data capture / collection

Technology assisted training: modular technologies

National health databases

## Medical information processing

eHealth & ePrevention: knowledge based, data warehouses, data mining / drilling



# Health II



Adaptive, intelligent home: conditions adapt to inhabitants' health conditions

Systems that monitor patient's condition in real time: especially in the case of emergency (elderly people etc.), real time diagnostics

**"Home medicine"**

"Every home" service robots

ICT home treatment: free self service systems, health centre and pharmacy systems, additional services, "mobile service and competition" automata

Basic technology, tailored interfaces

**Assisting and socially activating applications**

Intelligent user centred services for the senior housing: technologies that activate everyday social contacts

Brain interface: for the seriously disabled

**Documentation applications**

Documentation in the doctor's reception: records of the doctor's instructions in the net, crisp instructions in the net and as a print

Self treatment

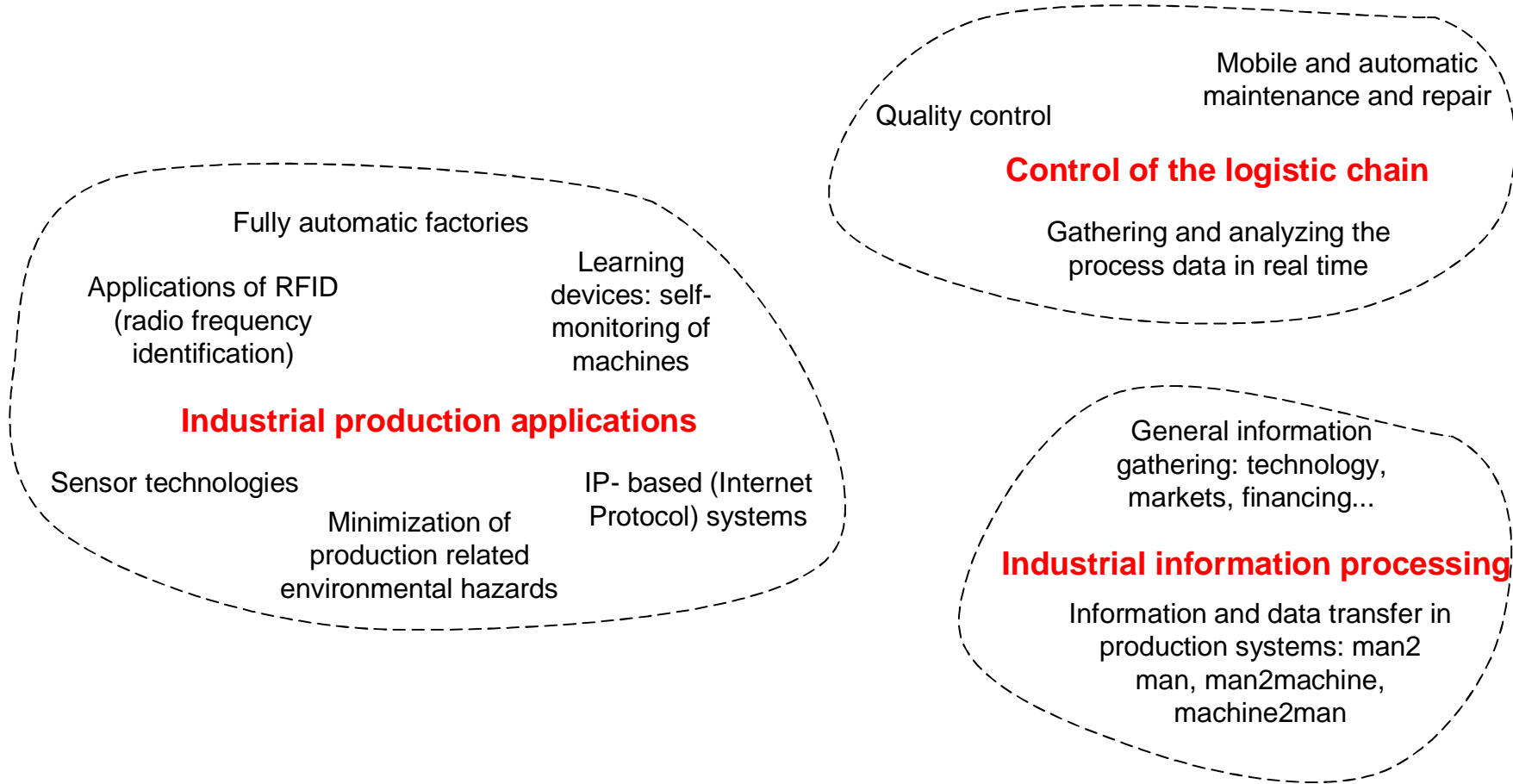
**Applications for the control of allergies**

Diagnosis

Prevention



# Production economy I



# Production economy II



Convergence of all of the life cycle systems

**Convergence of information systems**

Convergence of information: the performing, controlling and packing of information is combined via sensors, then combined information moves to be compared with planned information

Combination of 3D visualization and simulation

**Simulation applications**

Simulation of micro level phenomena in different fields : electronics, nanotechnology, fabrication of medicines, material technologies

Multi-sensory process control and robotics: input / output

Automatic reasoning systems: error seeking, production optimization

Applications enabling telework and mobile work

**Industrial production applications**

Environmental measuring systems and services: security, "emission trading" and emission control

Mobile maintenance systems

New interfaces: tangible, wearable, embedded

Mass tailored production lines: on demand systems, no storages





# (Information) Security I



Invisible information security: ad hoc, availability, PMAC + PMF, mobility...

## Security in environments and networks

Automatic control in open spaces: e.g. figure identification for cameras

Biometric tags

## Biometrics

Security of biometric information: prevention of malpractices

Dynamic privilege management

Long term preservation

Integrity

## Confidentiality in general

Identity management

Non-reproducing technologies



# (Information) Security II



## Biometrics

Biointifiers: reliable electronic system, bioidentity

## Security in environments and networks

Distributed networks: important information is directed to different network

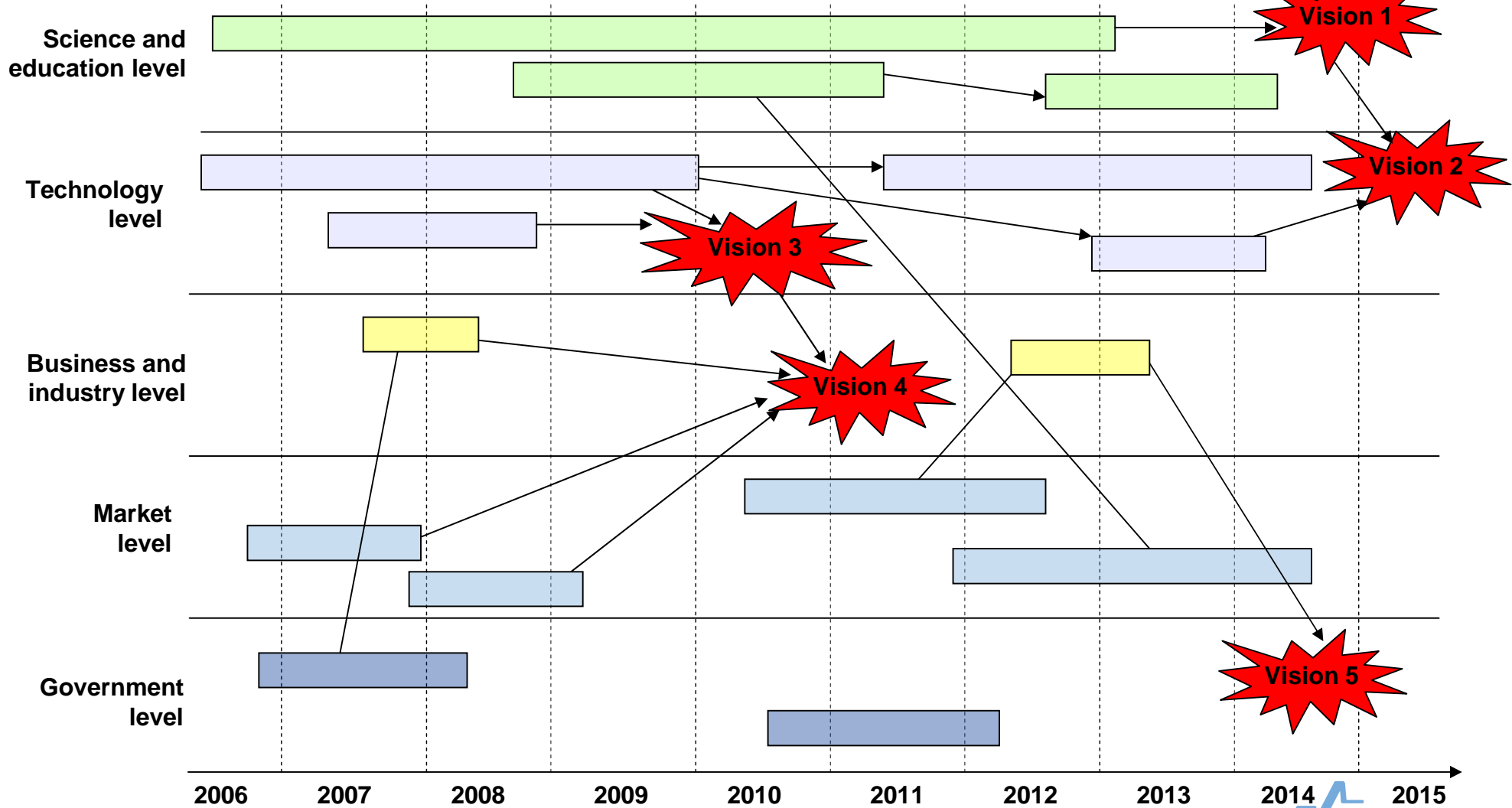
Animated agents that endorse the trust of the users

## Confidentiality in general

IPR in the industrial information processes: rights to use, billing, software licences like in the entertainment (2)

Virus-free "internet"

# Draft roadmaps



## THANK YOU!

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