



Innovating in Nordic Style: Technological Prospects in the Nordic ICT Foresight Project

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Technology Foresight and Technology Assessment

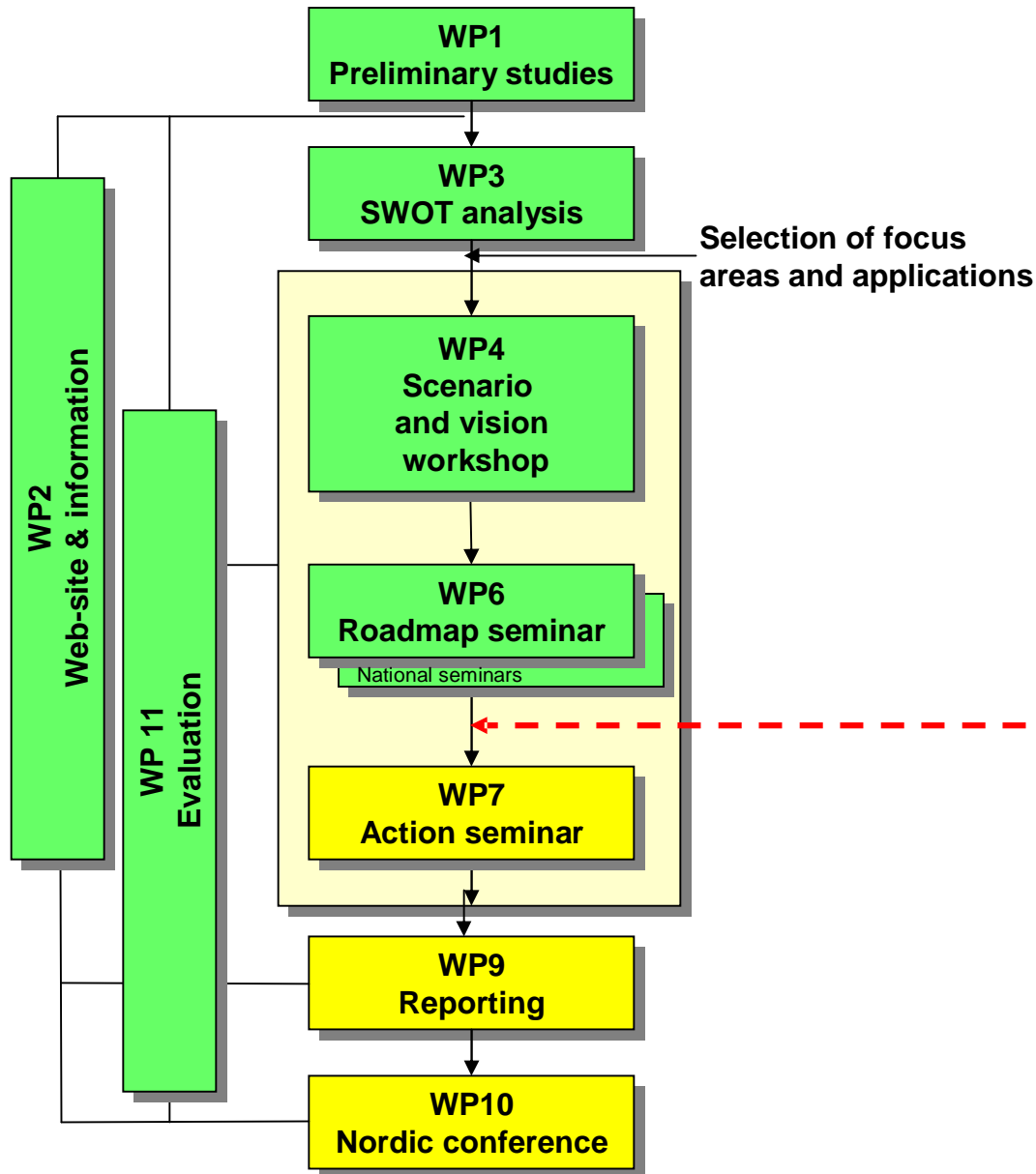
Changing foresight practices in regional development

7.–9.6.2006, Turku



Project idea and objectives

- **To identify, select and present scenarios illustrating the prospects for possible future applications for ICT technologies with respect to technology, application and market issues**
- **To explore the roads to commercialisation**
 - provide solutions where ICT can provide positive contributions to societal wellbeing
 - identification of unique market opportunities with longer-term growth potential
- **To explore appropriate ways of implementing the innovative ICT applications and systems**
 - prioritise research, development and commercialisation of ICT
 - consider the required infrastructure technologies
- **To estimate and compare the implications of the ICT applications in Nordic countries (Denmark, Finland, Norway, Sweden)**
 - assist in developing appropriate framework policies that facilitate the developments in desired directions
 - build roadmaps up to 2015 of the developments in ICT's
- **Metalevel aim > To consider the elements that are unique in Nordic ICT culture <**
Is there a specific Nordic innovations "style" in ICT's?



Nordic ICT Foresight project coalition



Research / core partners

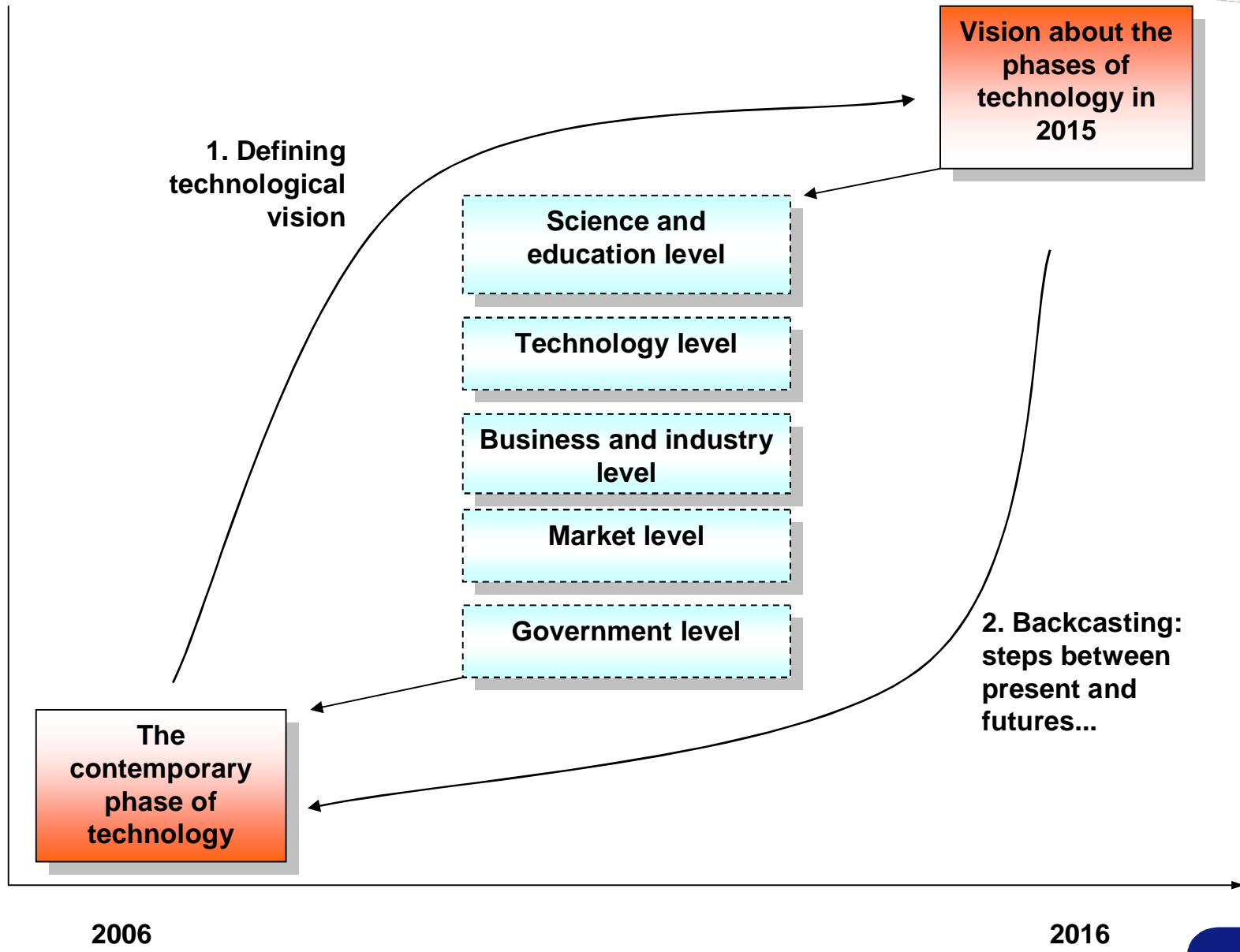
1. DTI, Danish Technological Institute (Denmark)
2. FOI, Swedish Defence Research Agency (Sweden)
3. SINTEF, Foundation for Scientific and Industrial Research at the Norwegian Institute of Technology (Norway)
4. VTT Technical Research Centre of Finland (Finland)

Cooperation partners

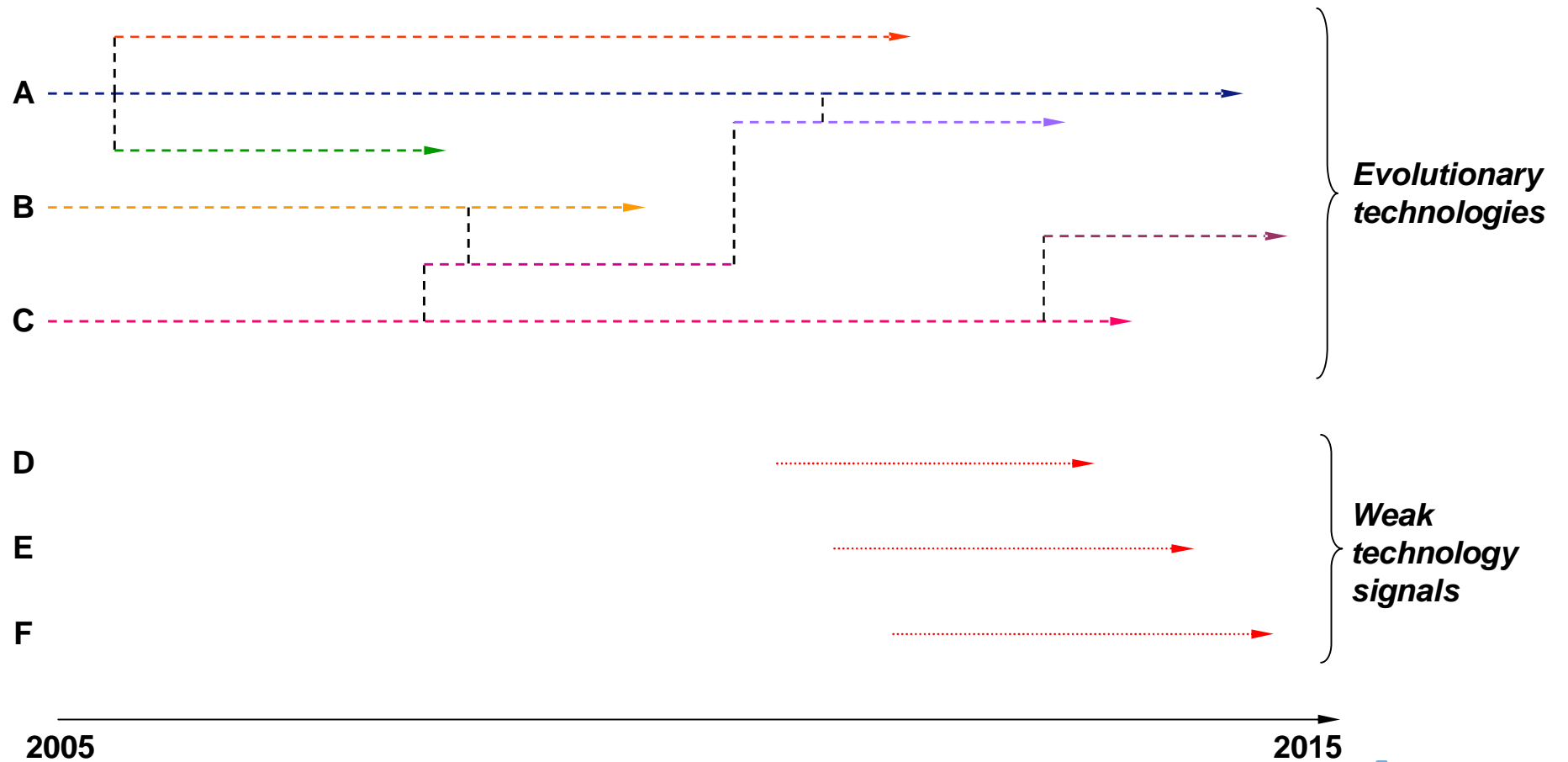
5. Confederation of Danish Industries (Denmark)
6. The Danish Society of Engineers (IDA) (Denmark)
7. Ericsson Microwave Systems (Sweden)
8. Vinnova (Swedish Innovation System Agency) (Sweden)
9. Göteborg Pediatric Growth Research Center at Göteborg University (Sweden)
10. Abelia (Norway)
11. LO (Landsorganisasjonen) (Norway)
12. The Research Council of Norway (Norway)
13. SIVA - The Industrial Development Corporation of Norway (Norway)
14. Oslo Innovation Center (Norway)
15. Nokia Corporation (Finland)
16. Sitra (Finland)
17. Stakes (Finland)
18. Technology Industries of Finland (Finland)
19. TEK, Finnish Association of Graduate Engineers (Finland)



General framework



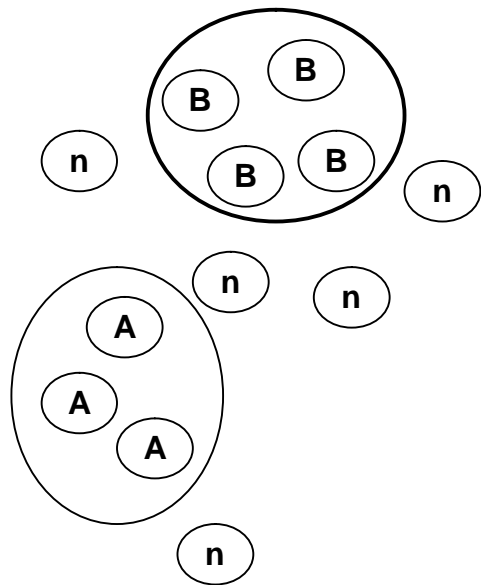
Evolutionary technologies and weak technology signals



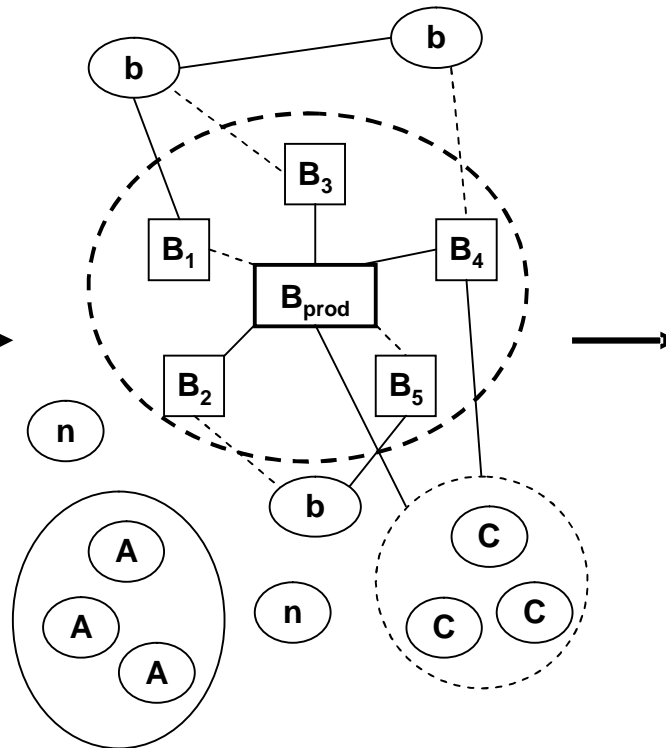
Convergence of IC technologies



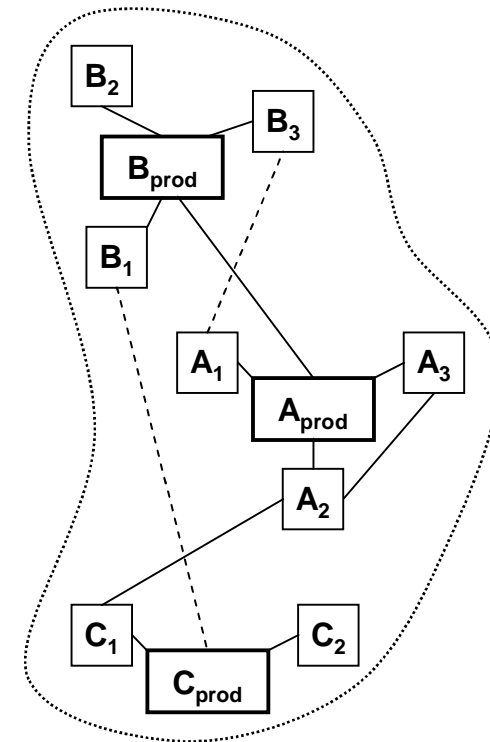
SEPARATE TECHNOLOGIES AND PRODUCT GROUPS



MODULARIZATION OF TECHNOLOGIES AND INCREASE OF INTERRELATIONSHIPS



CONVERGENCE AND COMPATIBILITY OF MODULAR PRODUCT GROUPS – HETEROGENEOUS NETWORKS



2000

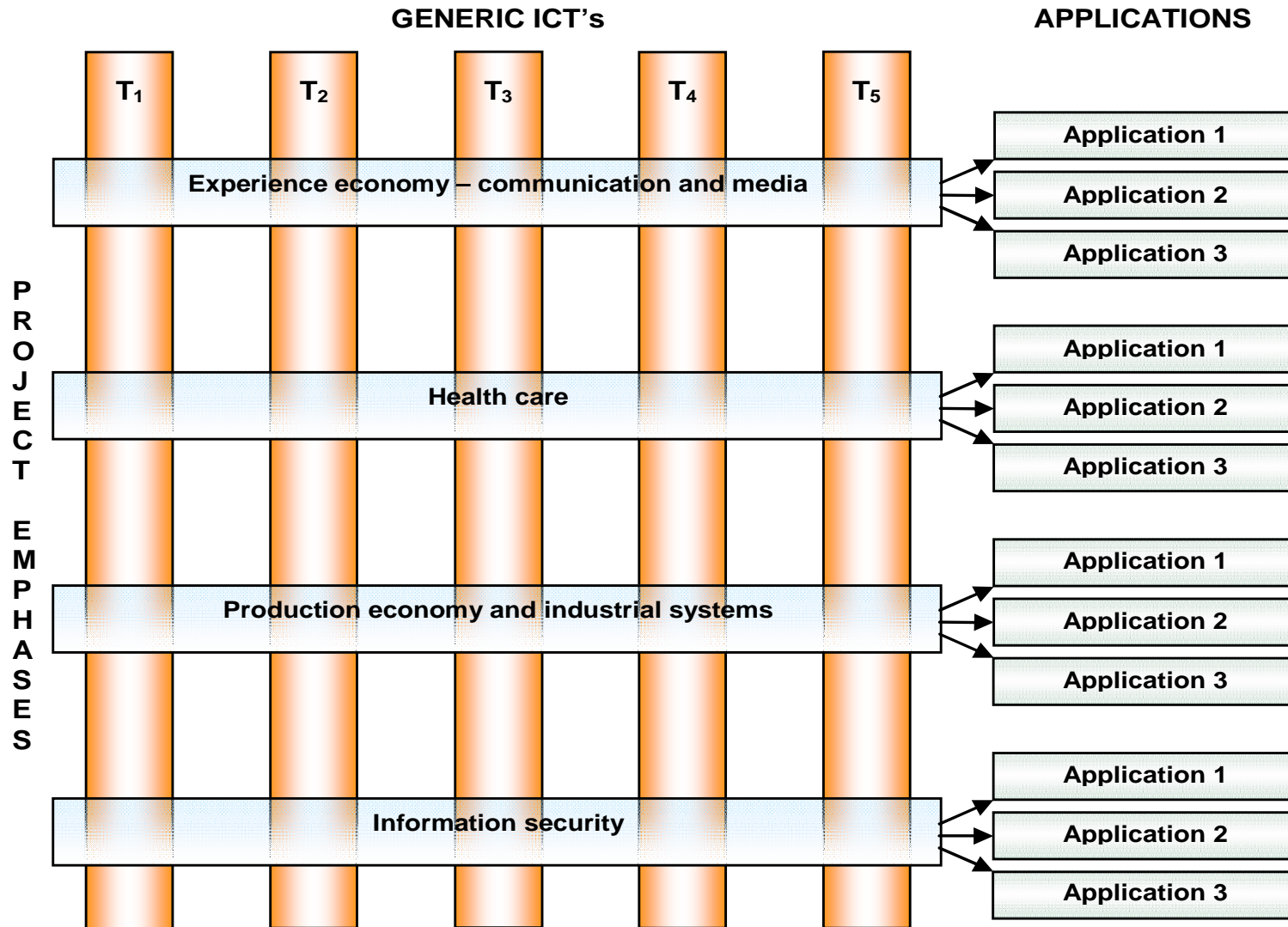
2020



Thematic fields of the project

- The project focus areas were defined by the project partners in the beginning of the project (planning of the proposal, first core group meeting). These are:
 - **Experience economy** (media and communication)
 - **Health care**
 - **Production economy** (industrial automation, production systems)
 - **Security** (emphasis on information security)

Applications, generic technologies and project emphases



National SWOT analyses (Norway, Sweden, Finland, Denmark) – December 2005



- The aim of the SWOT analyses was to identify and characterise the main differences in the ICT developments
 - In Norway, SWOT was carried out as a workshop (1 session)
 - In Sweden, it was completed as a small scale questionnaire
 - In Finland, SWOT was carried out as a workshop (1 session)
 - In Denmark, SWOT was completed as a four workshops concentrating on the project emphases
- The main results of the SWOT analyses on the website(<http://nordic-ictfore.vtt.fi>)

Scenario and vision workshop in Bålsta, Sweden 9.–10.2.2006



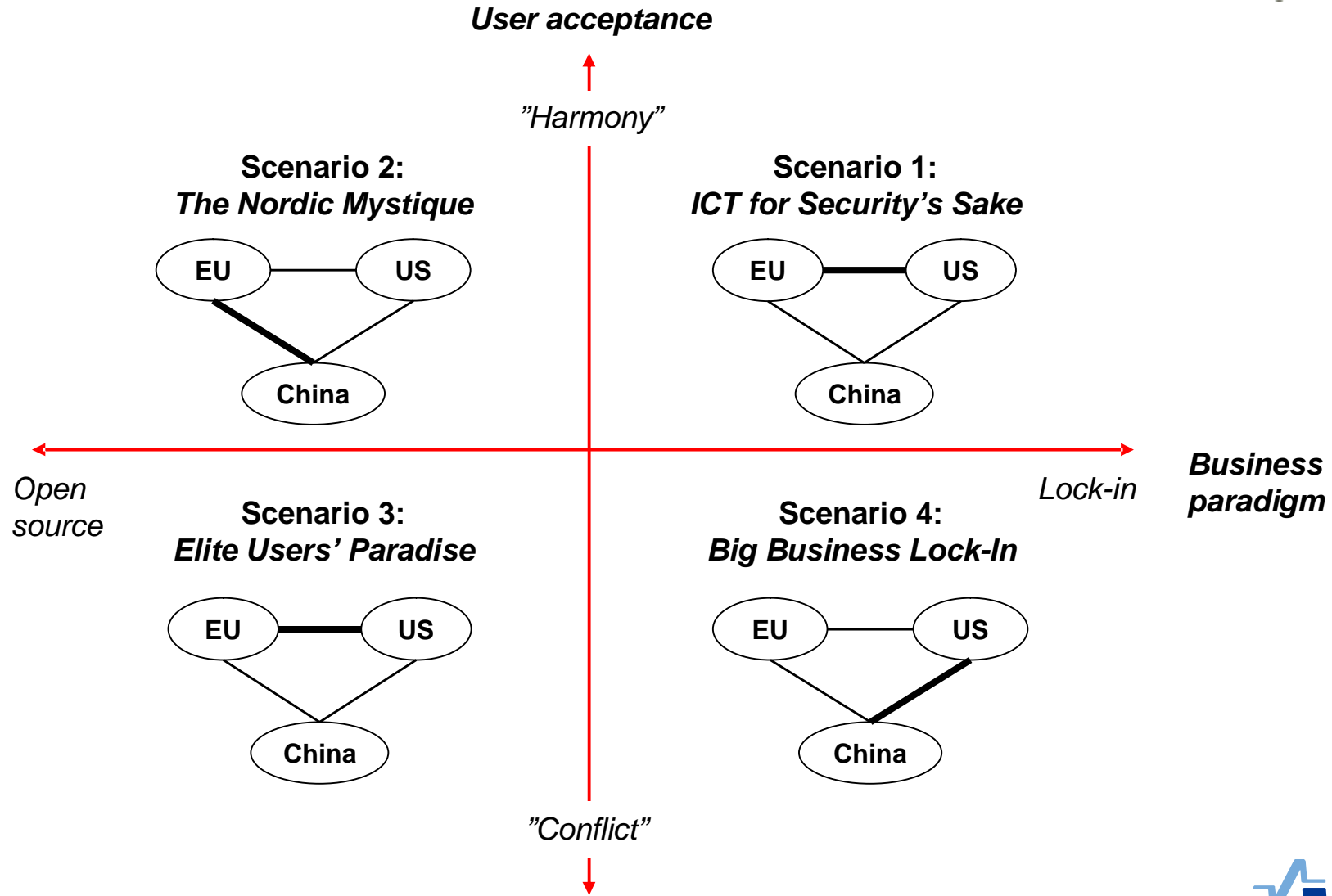
- Organized by FOI
- Two themes
 - visions of the ICT applications
 - outline a draft set of external scenarios for the socio-technical environment of ICT's in the Nordic region (time horizon 10 years)
- Workshop was built on the application of Shell scenario method
 - Gathering of visions
 - Drafting and elaboration of scenario set
 - Evaluation of the vision according to the scenario set

Three examples of the evaluated visions



- 1. *Smart training*
 - Home exercise equipment
 - Virtual interface gives motivation via games
 - Virtual runner, run in the landscape
- 4. *All-sensors sports events*
 - A lot sensors are places at various strategic places in a sports event, e.g. football (the ball, the shoes, around arena), Formula 1, hockey (camera in the walls, the helmets, the goal),..
 - Create innovative online games based on sensor information; betting markets
 - Create new visual services
- 9. *Control system for efficient energy use*
 - A control system for e.g. efficient heating of buildings
 - Combination of sensors and optimisation algorithms decreases the energy need radically

Scenario axes

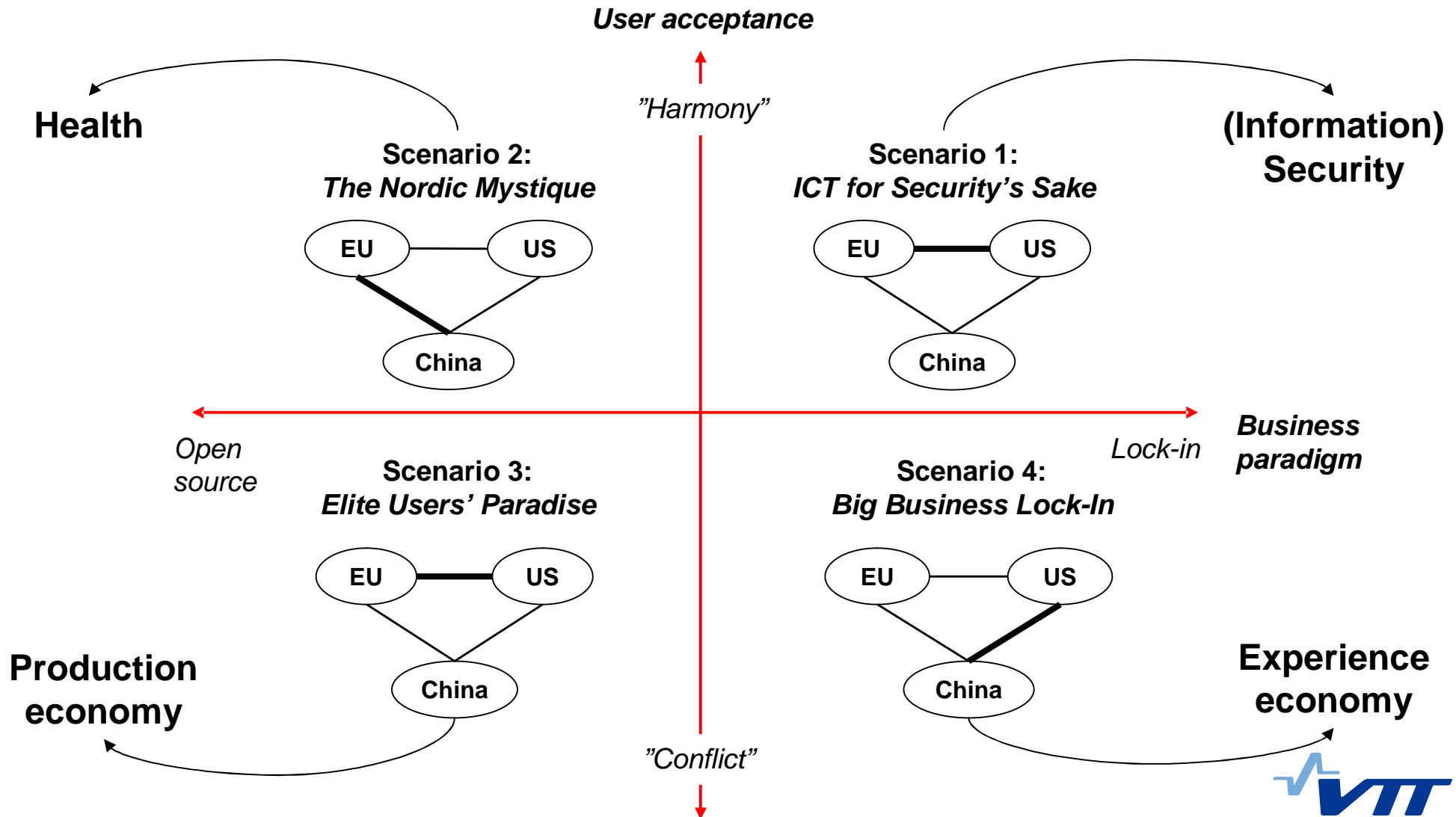


Roadmapping workshop in Espoo, Finland 30.–31.5.2006

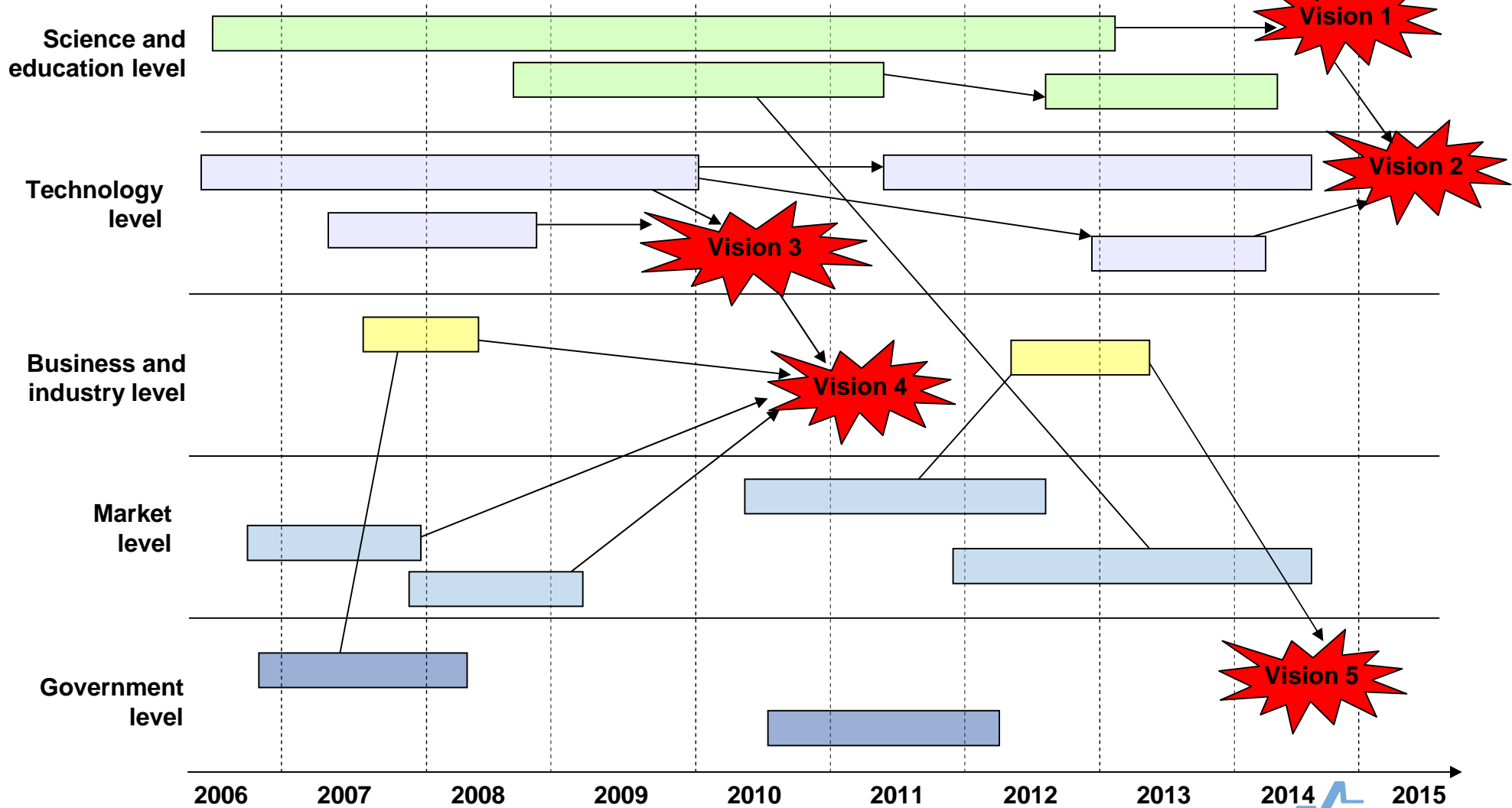


- Organized by VTT
- Application that links the results of the SWOT workshops and especially scenario workshop
- **Four roadmaps:** experience economy, health, production economy, information security
- **Five roadmap levels:**
 - 1.Science and education** (needs for scientific research, needs for competences)
 - 2.Technology level** (networks, terminals, content delivery, quality of service, security among others)
 - 3.Business/industry level** (business opportunities, business development in the match between technologies and markets, finance, industrial standards)
 - 4.Market level** (market mechanisms and end use markets)
 - 5.Government level** (industry policy, public R&D, early market stimulation, standardisation)

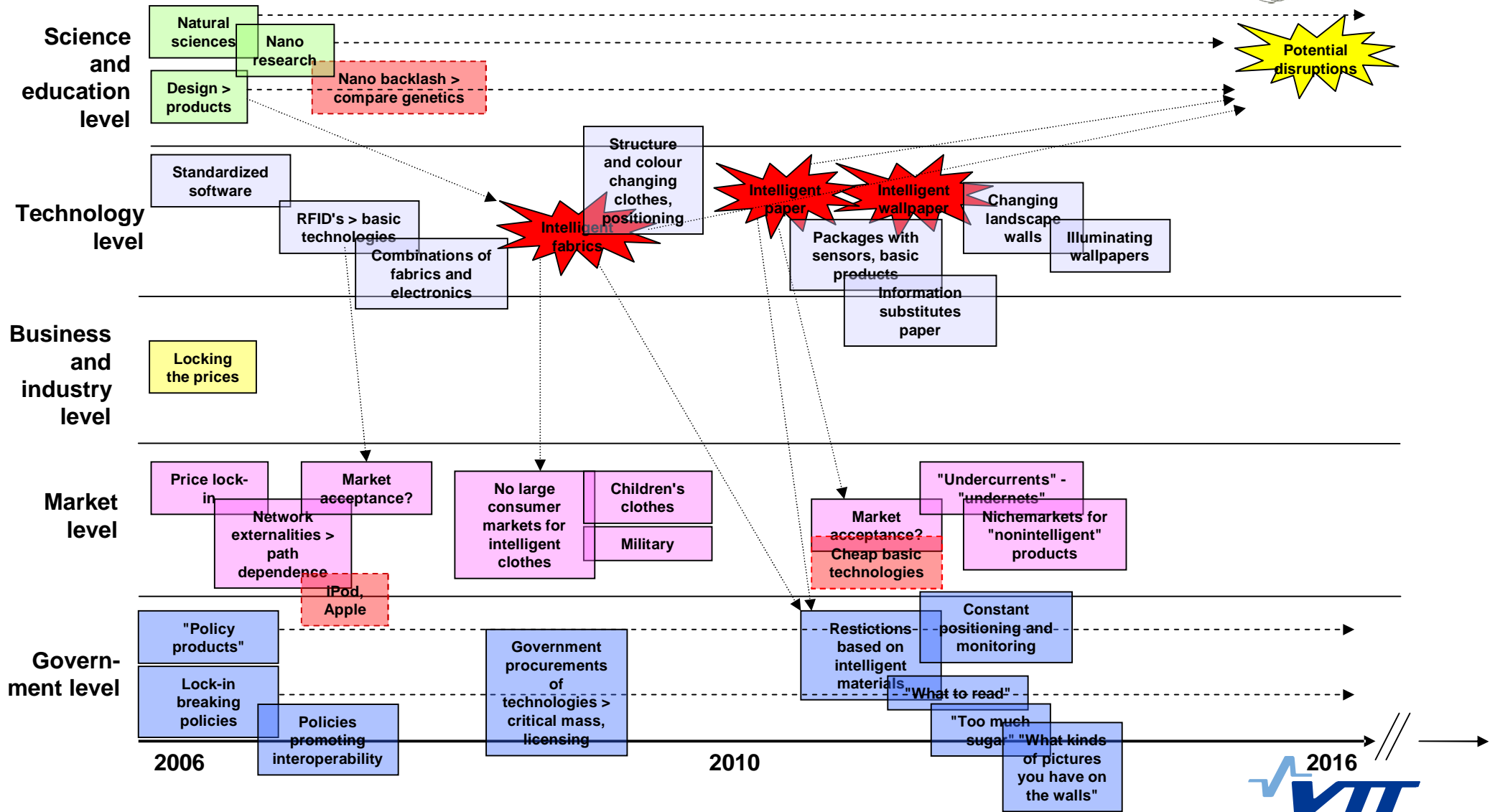
Four thematic roadmaps were created in different scenario settings



Outcome of the roadmap workshop



Draft roadmap of the intelligent fabrics and paper – experience economy



Conclusions - Short future of the Nordic ICT Foresight



- Presentation introduced the Nordic ICT Foresight project
- It discussed the project structure, methodology and reflected on the preliminary results
- **Future activities include**
- **2006**
 - Finalizing a reports on the SWOT workshops and scenario workshop
 - Elaborating the roadmaps
 - Constructing a report on the roadmapping workshop
 - The action workshop in October 2006, Norway
 - Writing the final report to the series of Nordic Innovation Centre
- **2007**
 - Preparing of the Nordic seminar with two other NICE projects: Nordic Foresight Forum and FOBIS (Foresight on Biosensors)
- After all the phases are through and material analyzed, the question about the Nordic innovation style can be raised and considered

Project website: <http://nordic-ictfore.vtt.fi>



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ICT FORESIGHT

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Scenario workshop

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THANK YOU!

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