VTT TECHNICAL RESEARCH CENTRE OF FINLAND LTD

Foresight activities in Finland: actors, relations, and impacts on policy-making

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Structure of the presentation

- Foresight in Finland: a background in brief
  - Actors
  - Policy context
  - Technology foresight
- Examples of Finnish multi-stakeholder foresight exercises
  - FinnSight (Academy of Finland and Tekes)
  - Welfare through sustainable growth (Finnish government)
- Towards a co-operative foresight approach in Finland
  - Reorganisation of national foresight in Finland
- Conclusions

Foresight in Finland: a background in brief

Foresight is well established in Finland

- **Parliament** – Committee for the Future established 1993 – first permanent futures committee in the world
- **Government** – national outlooks, foresight platforms
- **Key support organisations for science, technology and innovation**
  - Research outlooks (Academy of Finland)
  - Priorities for innovation programme funding (TEKES)
- **Industry** – technology roadmapping, scenarios, etc.
- **Industry federations** – foresight and roadmapping in clustering initiatives
- **Universities and research centres (e.g. VTT)** – technology expertise and methodological support for foresight and technology roadmapping
- **European and Nordic initiatives** – active international collaboration

Transnational contexts of Finnish foresight

- **Foresight as a key component of the European Union's evidence-based policy during last twenty years or so**
  - FTA: Future-oriented Technology Analysis, conferences
  - EU's Joint Research Centres (especially Brussels and Seville)
  - European Social Fund's (ESF) national foresight exercises
  - Foresight in EU's framework programmes
  - Research project based on assignments of European Commission
  - Networks of research organisations, for example ETEPS (European Techno-Economic Policy Support Network)
- **Finland has been an institutional forerunner in futures studies and foresight**
  - The Committee for the Future 1993; academic futures studies; varied foresight projects, workshops and forums in different ministries from 1990s
  - Foresight is widely applied in state level and regional level policy-making
  - In the last couple of years, futures studies has been set up as a academic discipline at the University of Turku, Finland

Consensus-oriented policy culture in the Nordic welfare states

- **Despite differences in economy and practical politics, there is a common *policy culture* in Nordic countries**
  - Aimed at democratic participation
  - Favours consensus-based decision-making
  - Generally positive attitudes towards application of new technologies
- **Integration of multiple stakeholders in the policy-making**
  - Political parties
  - Industries and related institutions
  - Research and development institutions
  - Citizens
- **Nordic countries in the European context**
  - EU-level policies and research programmes (e.g. Horizon 2020) oriented towards ‘forward-looking’ approaches
  - Foresight is embedded also in the context of ‘grand challenges’
- **Nordic countries have multiple foresight actors and institutions, both governmental and private**

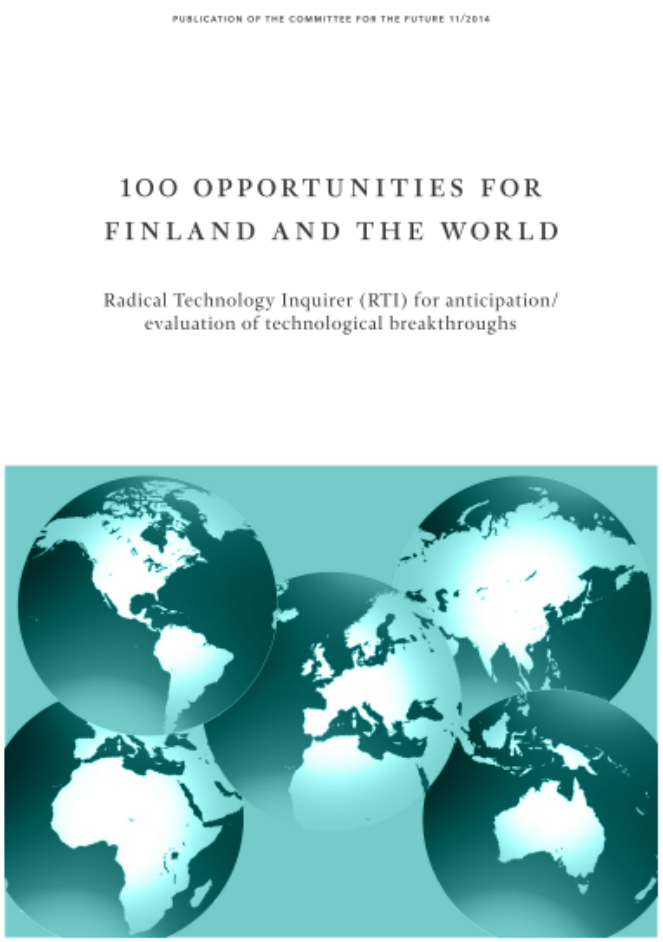
Key foresight actors in Finland

	Foresight actors
Governmental	• Ministry of Employment and the Economy • Ministry of Education • Finnish National Board of education • TEKES The Finnish Funding Agency for Technology and Innovation • Academy of Finland • SITRA The Finnish Innovation Fund • Parliament of Finland, Committee for the Future • Prime Minister's Office (PMO) • ELY Centres (former TE Centres)
Research organisations	• VTT Technical Research Centre of Finland Ltd • Systems Analysis Laboratory / Aalto University • Finland Futures Research Centre / University of Turku • IAMSR / Åbo Academy University
Companies and other organisations	• Industrial federations • Finnish Association of Graduate Engineers (TEK) • Confederation of Finnish Industries • Think tanks: Demos etc. • Private consultancies: big multinationals and smaller local companies

An example of recent technology foresight:

100 opportunities for Finland and the world: Radical Technology Inquirer (RTI) for anticipation/ evaluation of technological breakthroughs

- **Objective**: Identification of the most promising technologies, and the long term aim to make an panel-based interactive solution that could run in the web.
- **Results**: A list of 100 most promising technologies from the Finnish perspective:
  - A framework and criteria for assessing radical emerging technologies
  - Framework enables one to identify emerging technologies with different emphases and in different maturity levels.
- **Impact**: Project made for the Futures Committee of Finnish Parliament. The report got a lot of positive media attention.

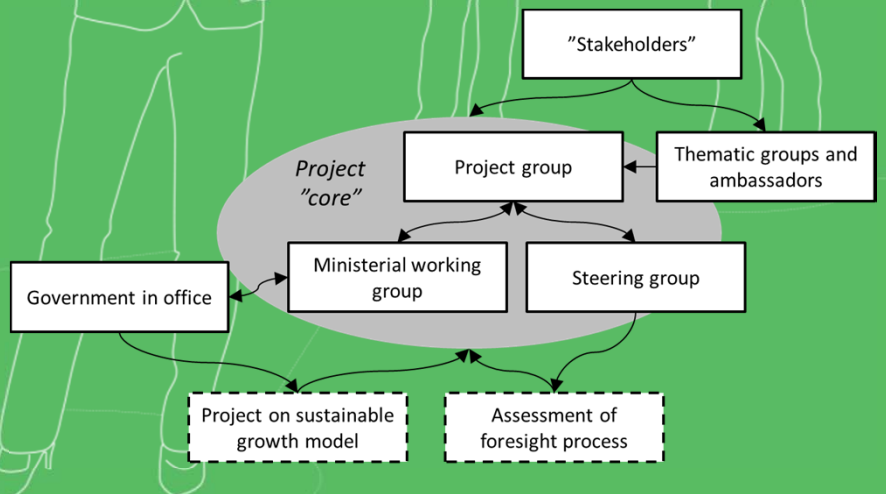


Linturi, Kuusi & Ahlqvist

Report published in Autumn 2013
English version in 2014

Examples of recent VTT technology roadmaps

- **Smarctic - Roadmaps to Arctic Opportunities.** VTT & University of Oulu 2015.
- **Cellulosic Value Chain Technology Roadmap for Government of South Australia.** VTT 2013.
- **Roadmap and Development Strategy for Victorian Government of Australia.** VTT & ICS 2009.
- **Green ICT Roadmap.** VTT 2009.
- **Roadmap of Ecomaterials.** VTT 2009.
- **Roadmap of Packaging.** VTT 2009.
- **Nutritech Roadmap on Intelligent Nutrition.** VTT 2009.
- **Service Science Roadmap.** VTT 2009.
- **Social Media Roadmap.** VTT 2008.
- **Roadmap of Digital Built Environment.** VTT 2008.
- **Roadmap of Building Services.** VTT 2007.
- **Transport System Technology Services**. VTT 2007



Examples of Finnish multi-stakeholder foresight exercises

Case 1: Finnsight (2006)

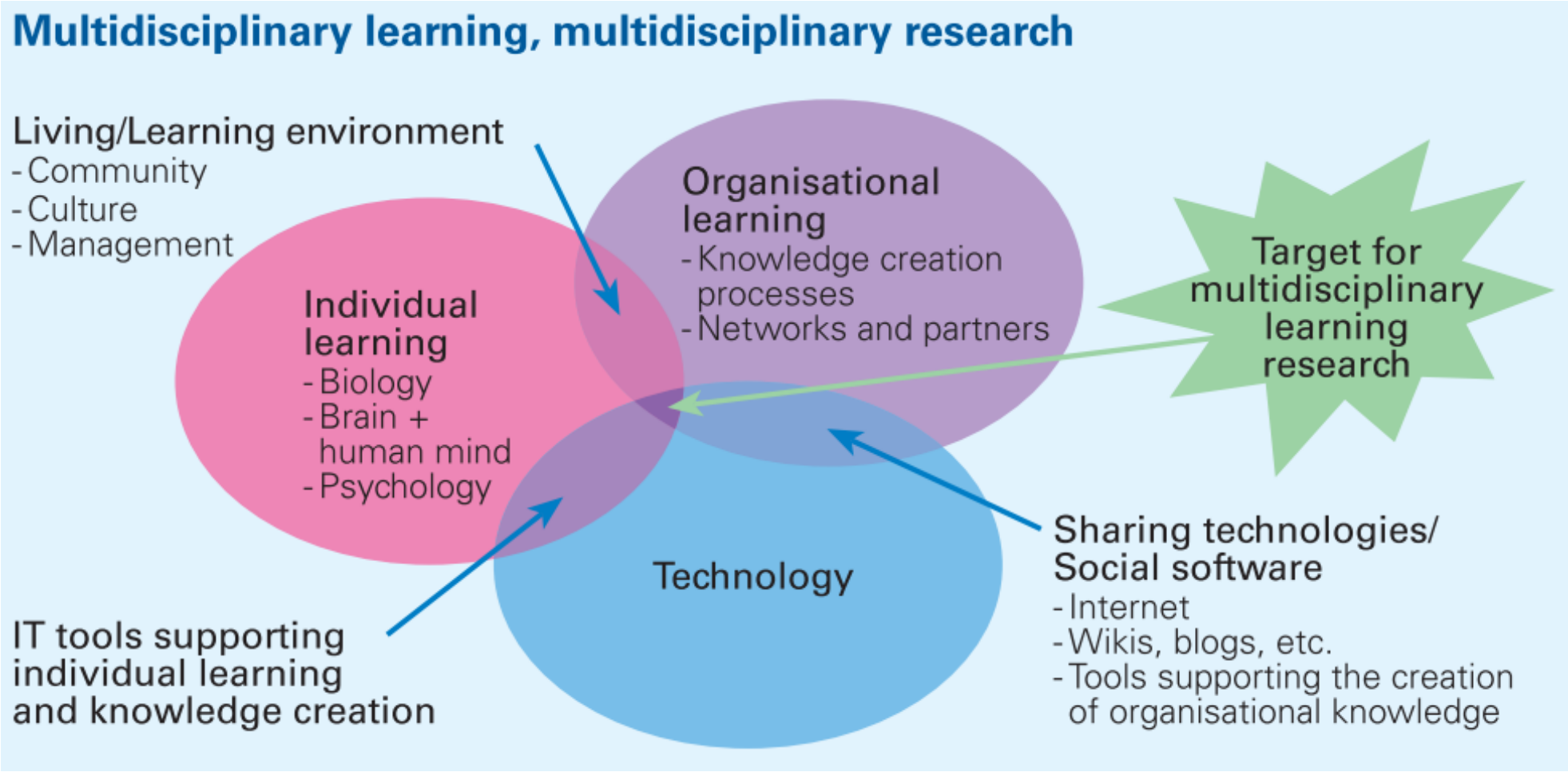
- **Foresight process of two Finnish science and research funding organizations**
  - The Academy of Finland
  - Tekes The Finnish Funding Agency for Technology and Innovation
- **The key stakeholder groups participated the process**
  - Research sector, public sector, private sector
  - Altogether some 130 experts
- **Foresight process was topically wide and based on panels**
  - Themes of the panels:
    - Learning and renewal of society through learning
    - Services and service innovations
    - Wellbeing and health
    - Environment and energy
    - Infrastructures and security
    - Bio-competencies and biosociety
    - Knowledge and communications
    - Understanding and human interaction
    - Materials
    - Global economy
- **The target year of FinnSight was 2015 – a time for review?**

Panel	Examples of focal competence areas
1. Learning and learning society	• Neurological, cognitive, motivational and social basis of learning • Practices of life-long learning, the education system and informal learning • Civic skills and competences, life control and social Innovations
2. Services and service innovations	• Business competence in services • Culture and adventure services • Renewal of public services
3. Well-being and health	• Physical exercise and nutrition research • Mental health and substance abuse research • Home care and telecare technologies
4. Environment and energy	• Operation of ecosystems • Water systems and water cleaning technologies • Smart sensors and new energy conversion and storage technologies
5. Infrastructure and security	• Environmental know-how and technology • Logistic know-how and security of supply management • Integration know-how
6. Bio-expertise and bio-society	• Complete use of renewable natural resources • Development of bioproduction • Measurement methods and diagnostics • Management and modelling of biological knowledge
7. Information and communications	• Sensor technology applications • Data mining, analysis, management and retrieval • Bio-information technology
8. Understanding and human interaction	• Multicultural competence • Life-long learning and understanding • Deep understanding of own culture
9. Materials	• Printed electronics • Biomimetic materials • Controlled synthesis of polymers
10. Global economy	• Assessment and management of global risks • Impacts of business globalisation on national economies • Management of innovation processes

FinnSight: examples of focal areas of competences identified by the panels

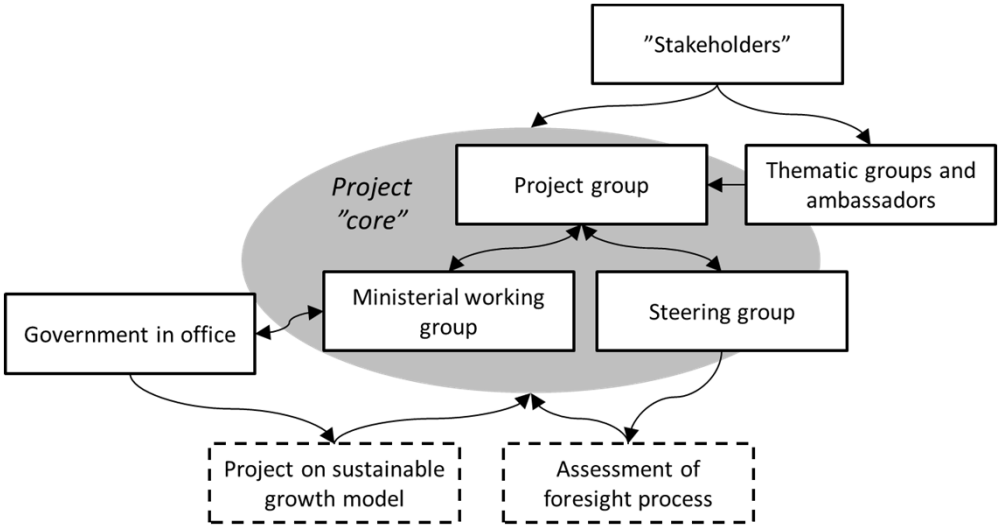
Salo et al 2009

Convergence in learning and research in FinnSight



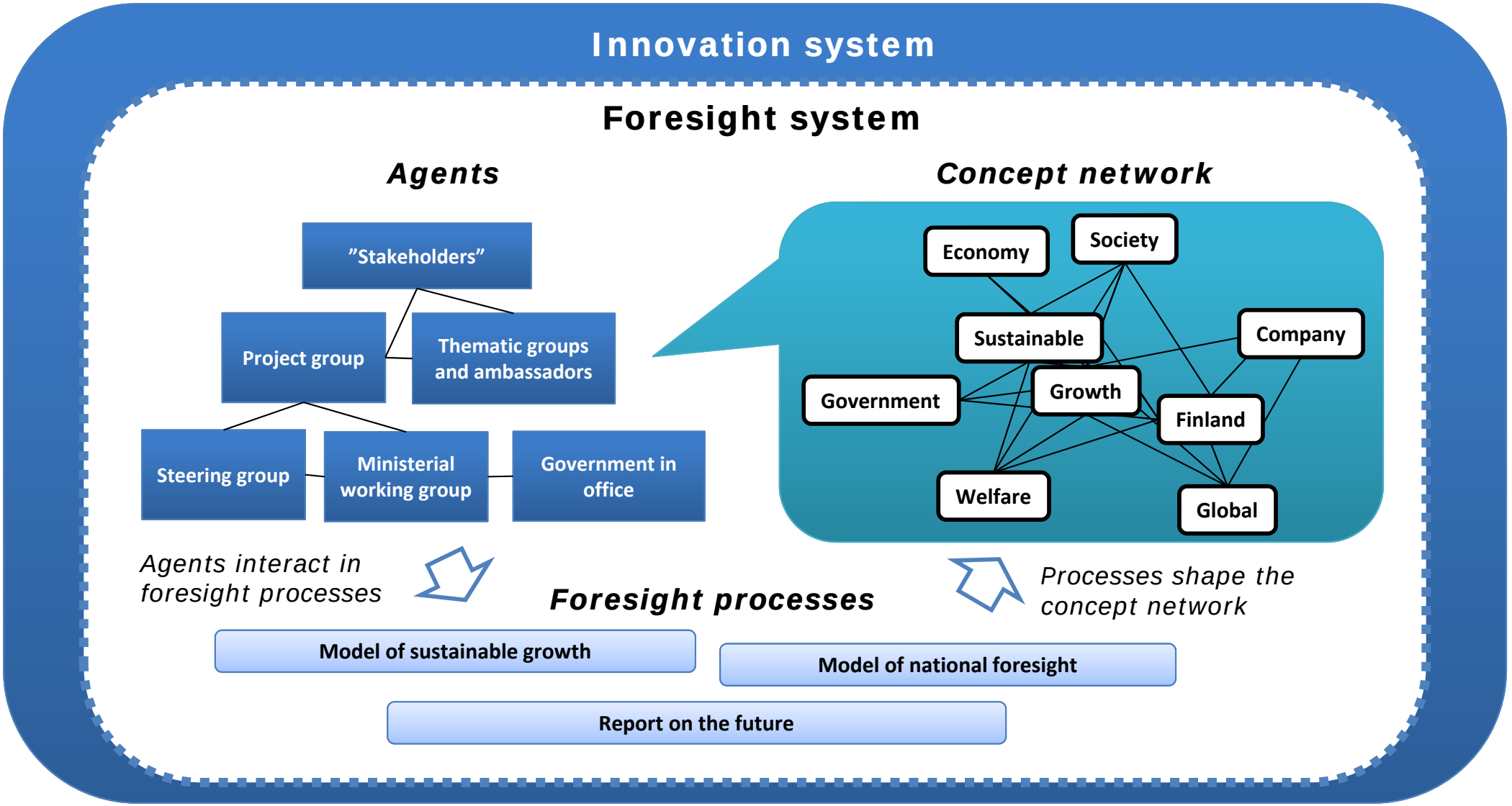
Case 2: Future report of Finnish government: ‘Welfare through sustainable growth’ (2013)

- **Finnish Government’s report on the future: ‘Welfare through sustainable growth’ (2013)**
  - Published once during each parliamentary term
  - The aim is to ensure continuity on cross-cutting across parliamentary terms
- **The 2013 report looks at the future of Finland to year 2030**
  - Focus on sustainable growth and wellbeing
  - Aim was to generate new insights for the future
- **The preparation of the report included new elements compared with the previous reports**
  - A separate participatory foresight phase that applied multiple channels for participation
    - Surveys
    - Workshops
    - Invited expert groups
    - An online platform



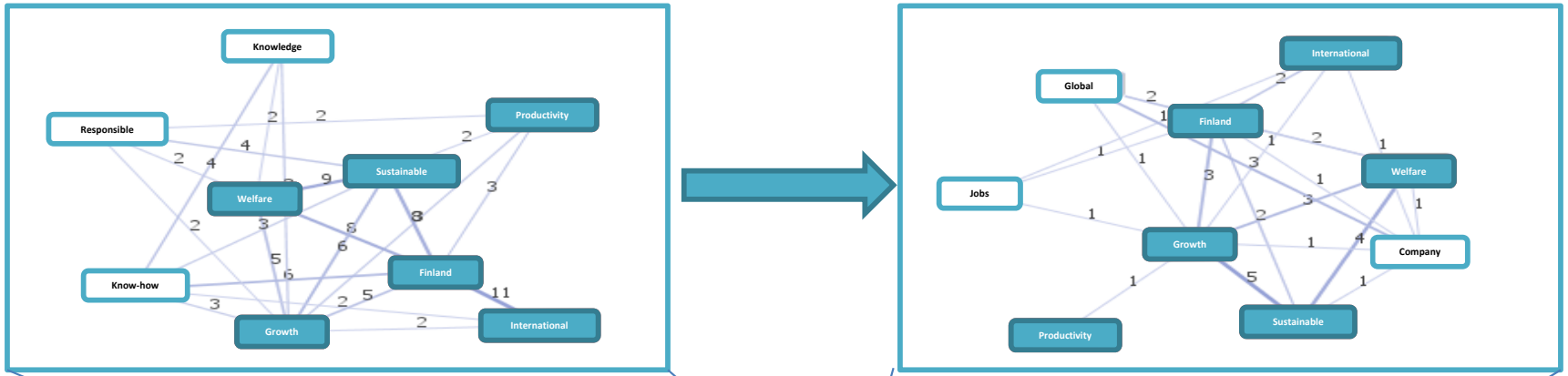
Dufva, Ilmola-Sheppard & Ahlqvist 2015

Conceptual framework for analysing the government's future report



Dufva, Ilmola-Sheppard & Ahlqvist 2015

Results: the transformation of the concept of ‘growth’



Changes in emphasis | **Reframing**

Economic growth (sustainability)	Responsible economy and sustainable growth	Sustainable growth	Economic growth is sustainable due to decoupling of material growth
Survey	**Feedback on themes by the government**	**Thematic group work**	

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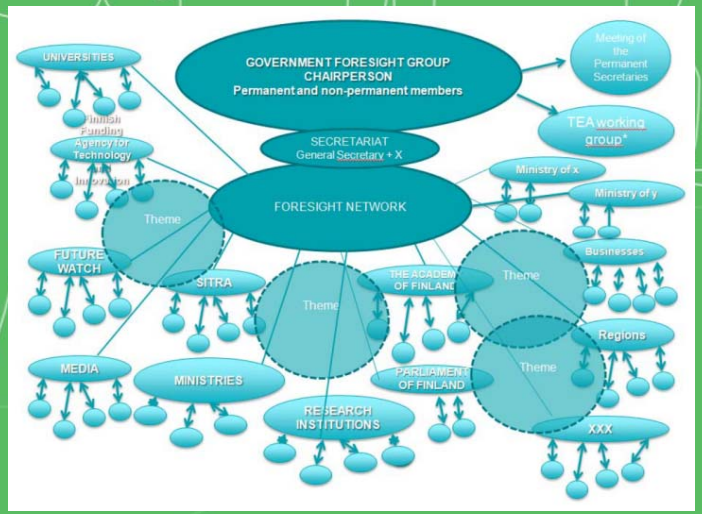
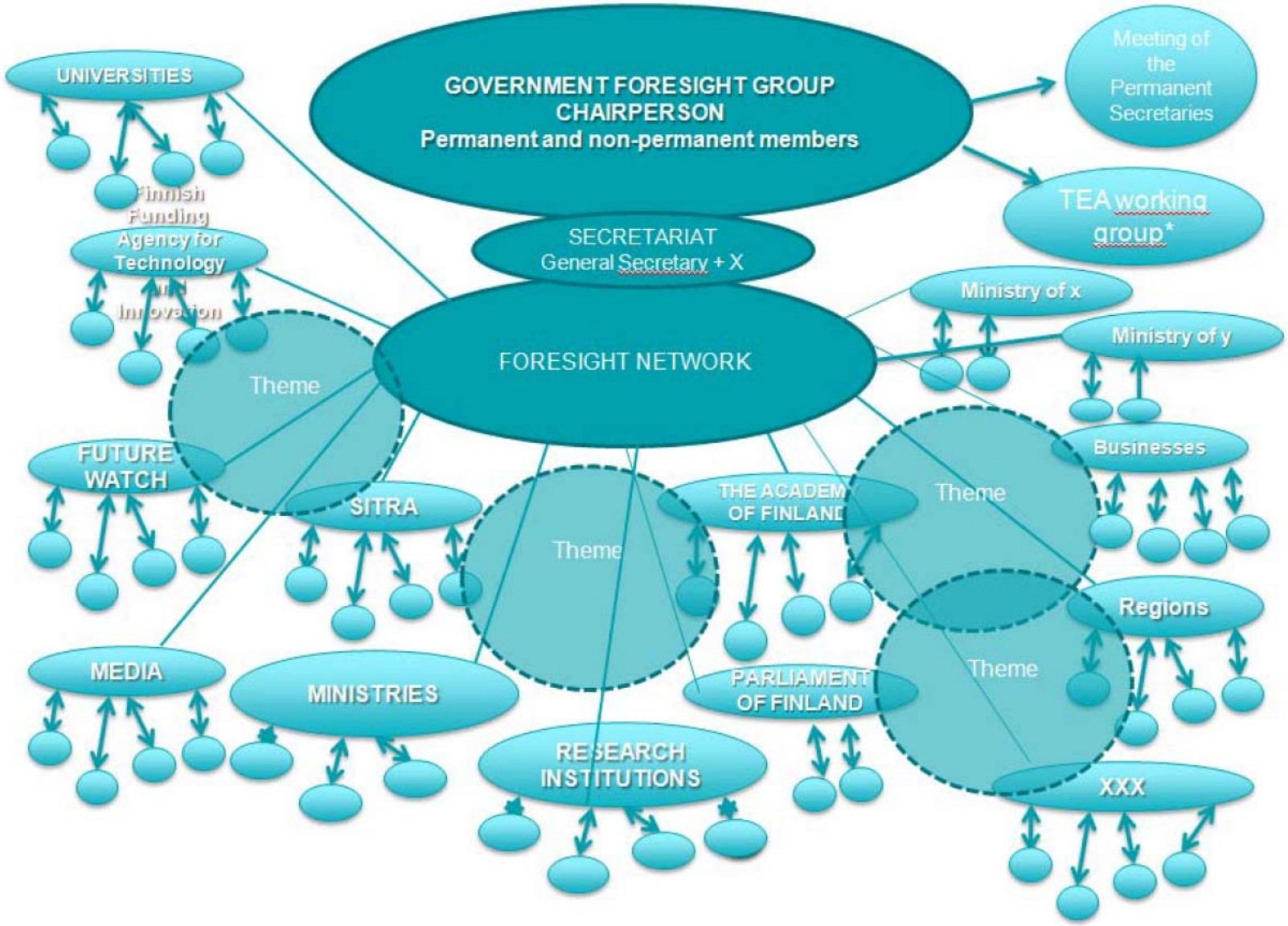


Towards a co-operative foresight approach in Finland

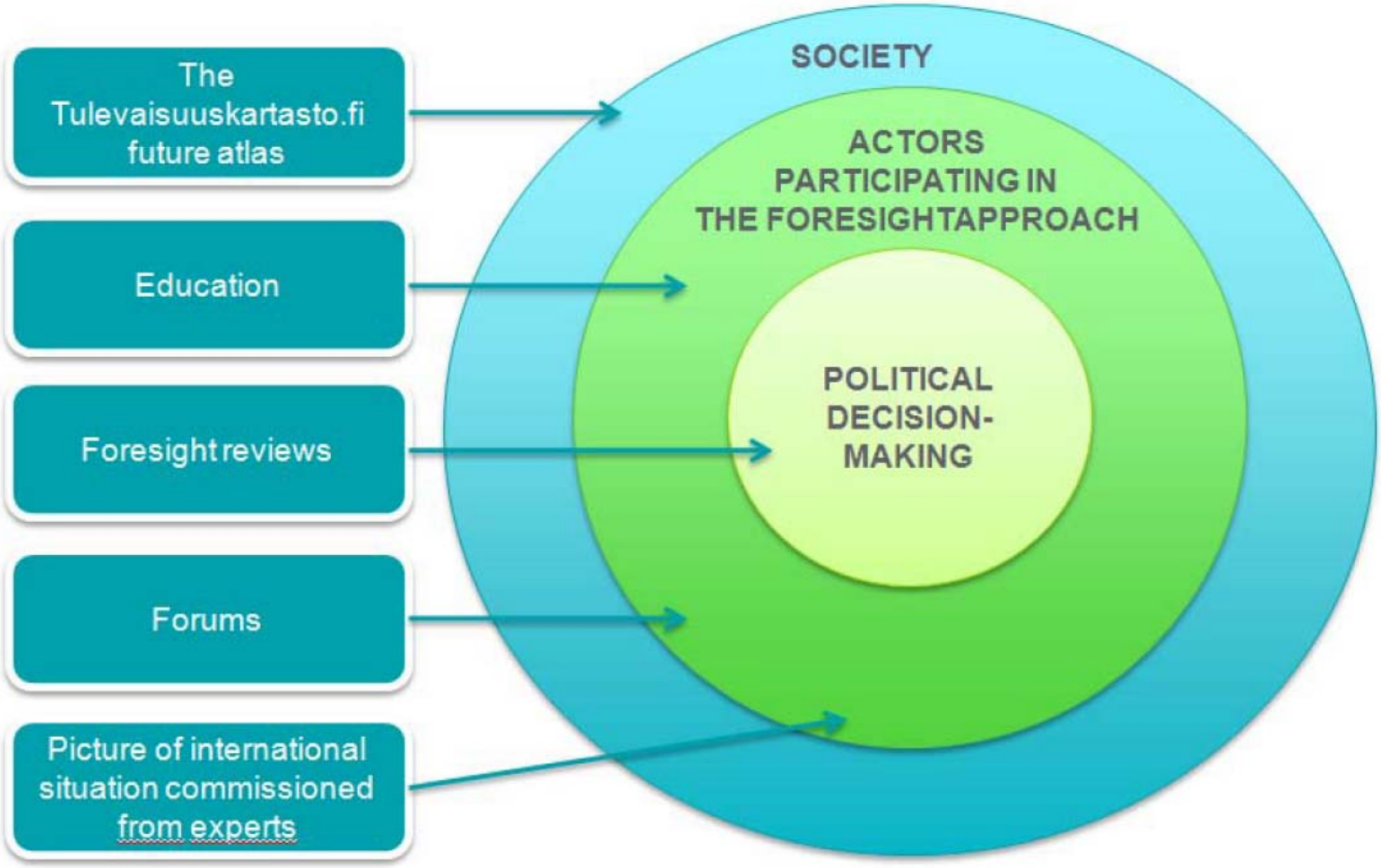
Towards co-operative foresight - reorganisation of national foresight in Finland

- **New ‘meta-actors’ aimed at national coordination**
  - ***The secretary at the Prime Minister’s Office (PMO)***
    - Coordination of the foresight cooperation
  - ***National Foresight Network (NFN)***
    - Facilitated be the PMO and Sitra the Finnish Innovation Fund
    - Open network, now over 200 foresight experts
  - ***Government Foresight Group: Foresight Pilot***
    - An expert group working under the auspices of PMO
    - The aim is to coordinate the use of foresight knowledge in the policy-making
    - Futures Committee, VTT, Finland Futures Research Centre, Sitra, Demos, universities, regional development organisations, Capful…
- **New foresight concepts and outputs**
  - ***Future pictures***
    - Built by the NFN for the Finnish parliamentary election 2015
  - ***Foresight Fridays***
    - Information channels in the NFN
  - ***Future atlas***

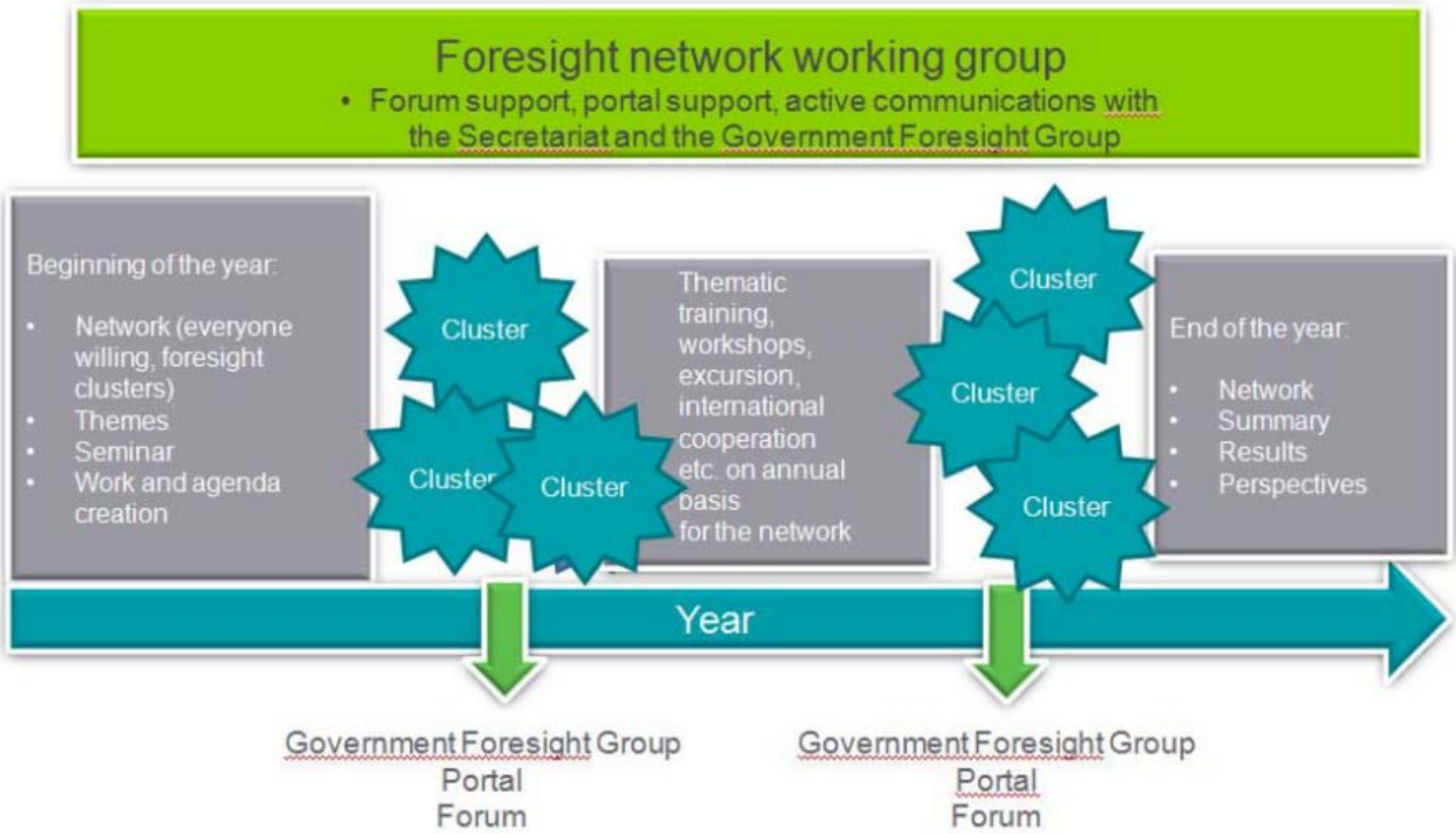
Actors in the emerging national co-operative foresight



Knowledge production structure in the emerging national co-operative foresight

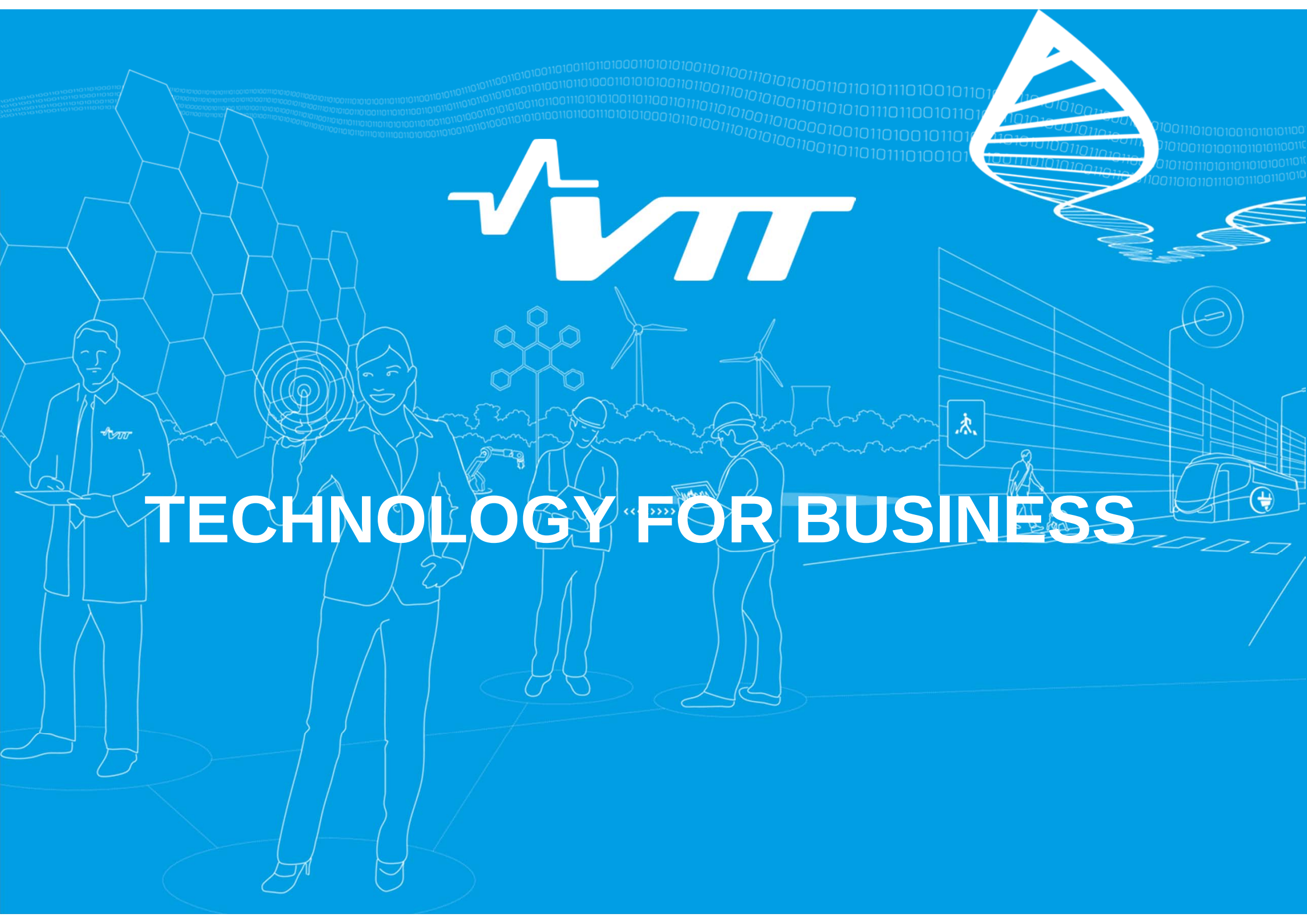


Operating model of the Foresight Network



Conclusions

- **Foresight and forward looking orientation deeply entrenched in the Finnish national governance**
  - Based on Nordic consensus-oriented policy culture
  - Multiple organisations aligned in the priority setting
- **The Finnish foresight is realised on multiple levels**
  - Wider multi-stakeholder processes
  - More targeted industry-oriented processes
  - Academic futures studies
- **The latest steps: towards a co-operative foresight approach**
  - Finnish government currently re-organising its foresight approach
  - New ‘meta-actors’: National Foresight Network and Foresight Pilot group
  - New foresight outputs: future pictures, futures atlas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