



- Technology Foresight and roadmapping; priority setting -

Dr. Dirk Meissner

Deputy Head and Research Professor

Research Laboratory for Science and Technology Studies

Higher School of Economics - National Research University

Institute for Statistical Studies and Economics of Knowledge

A Foresight study is a participative process between actors from academia, business, government and other societal non governmental organizations with the aim to identify and assess potential future developments in science, technology, business and society.

- Long term focus
 - ☛ Time horizon between 10 and 30 years
 - ☛ Time horizon differ according to topic discussed
- Open and interdisciplinary discussion and communication
 - ☛ Exchange between actors from policy administration, industry, science and society
 - ☛ Interplay assessment between science, technology, economy, culture and social impacts is crucial
 - ☛ Network strengthening to implement results later
- Systemic approach
 - ☛ integrative approaches with different instruments and methods
 - ☛ Match of diverging interests and aims
- consensus:
 - ☛ Get all parties on board
- Commitment:
 - ☛ Clear responsibilities for studies and result implementation

Positive effects of Foresight studies

Networking of participants

- ☛ experts /stakeholders brought together and working together towards a common goal
- ☛ the study brought private sector representatives and academicians around the same table to form R&D vision
- ☛ Interaction between human sciences and natural sciences
- ☛ Bring together stakeholders from different fields
- ☛ Met warmly by high-level scientists and company CEO's

Stimulation of dialogue

- ☛ Open discussion & some changes in way of thinking
- ☛ Promote long-term thinking
- ☛ Stimulate future orientation
- ☛ Global Perspective independent of organization
- ☛ Enthusiasm of involved parties to think and conceptualize about the future

Influence on policy / innovation

- ☛ Positive impulse for innovation
- ☛ New governance
- ☛ Influence on public investments and trajectory development
- ☛ Direct contribution to policy making
- ☛ Increase of democracy in decision making

Varied

- ☛ Costs corresponded to the benefits gained
- ☛ Useful results
- ☛ Steep learning curve, teaching programme at university

But there were also negative experiences

Networking of participants

- Difficult to bring together all sorts of people and experts who are both specialist and generalists and are capable of being really objective and forward-looking, not focusing on their own interests
- Difficult to select expert panels representing all stakeholder groups
- Tricky to provoke the participant to extend their mind set over 10 years and longer
- Difficult to reach a common framework of communication between different scientific fields
- Aggressive position of some stakeholders seeking to dominate and influence the experts and working group

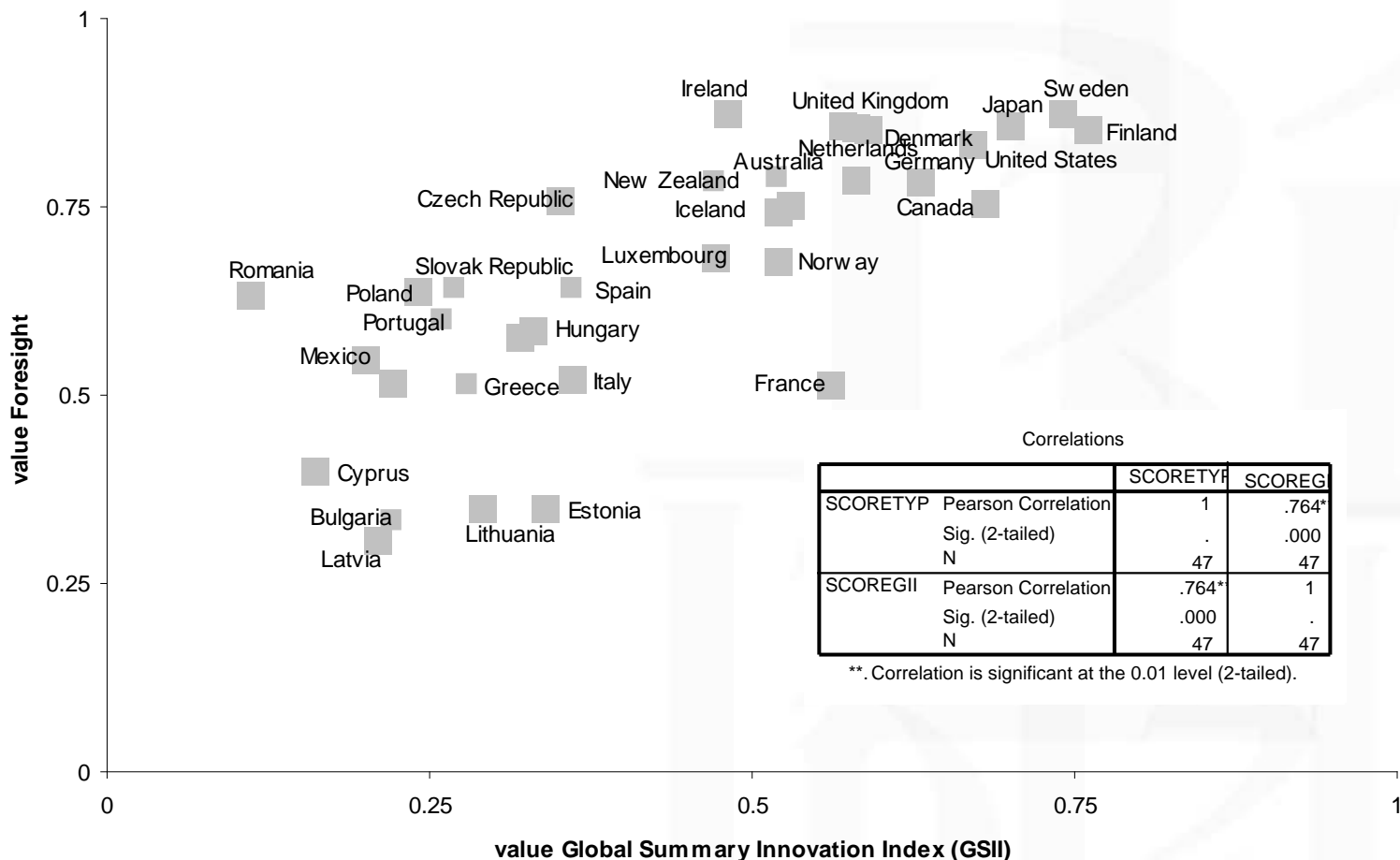
Influence on policy

- Delay in using foresight results for new policy
- Insufficient integration of results and analyses
- Policy makers does not necessarily adopt what experts suggest
- Secret political opposition by some senior members of government
- Decision-makers only superficially involved in actual foresight work
- Negative attitudes in government and academia

Varied

- Over budget and over time
- Too high expectation of echo in NIS
- Too many projects at one time
- Impacts necessarily indirect, not acknowledged
- Lack of methodology competence
- Lack of continuity in the funding to conduct a refinement of the results
- Lack of ability to market the results to industry
- Lack of adequate external consultants support
- Foresight culture needs time to develop. People are not familiar with this sort of thinking and methods
- General negative attitude because only accurate and precise predictions were acceptable

Significant strong correlation between Foresight and GSII



Response level	Fields / themes affected	Possible measures
Regional policy	<ul style="list-style-type: none"> • FDI attraction • Job creation • Spillover commercialization 	<ul style="list-style-type: none"> • Framework conditions adjustment – tax credits, subsidies • Targeted education policy • All in one migration measures
National policy	<ul style="list-style-type: none"> • STI governance • Future planning – one step ahead of other nations • Multilateral RTOs – others than large scale facilities • International framework condition agreements – IP, fiscal policy, labor law / codes 	<ul style="list-style-type: none"> • New dimension of priority setting • Strategic identification of future niches • External / foreign science marketing • Stimulate regional competition in country • Monitoring of competing countries



Foresight studies – strategic responses

Response level	Fields / themes affected	Possible measures
Corporate	<ul style="list-style-type: none">• Research / innovation strategy• External relations / PR• Product strategy• Corporate organization	<ul style="list-style-type: none">• Partnering strategies• Sourcing (in-/out)• Interface management departments• Focus on IP framework as top priority• Need for global IP regulation – no standalone national solutions
Institution (RTO/PRO/HEI)	<ul style="list-style-type: none">• Institution strategy• Funding structure and sources• Performance measurement• Global competition• Internationalization of institution	<ul style="list-style-type: none">• Equipment sharing• Changes in labor regulations – 24h operations• Foreign subsidiaries• Contract research / nucleus approach• Virtual networks

Response level	Fields / themes affected	Possible measures
Intermediary bodies	<ul style="list-style-type: none"> • IP commercialization • Invention disclosure management • Contract management / legal and financial issues • Service orientation 	<ul style="list-style-type: none"> • IP Portfolio building – cross institution portfolio establishment (national IP funds) • Increased focus on litigation rather than filing IP etc. • Coupled technical and management competences • Streamlined services • Active trend and progress monitoring



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Thank you for your attention!

dmeissner@hse.ru

Stipolicycoursehse@gmail.com

20, Myasnitskaya str., Moscow, Russia, 101000

Tel.: +7 (495) 621-2873, Fax: +7 (495) 625-0367

www.hse.ru