# The evolution of Foresight:

What evidence is there in scientific publications?

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### Biography

**Policy, Practice** & Impact



#### 2012 - present

- Professor of Innovation & Foresight
- Head of the Laboratory for Science & **Technology Studies**
- **Government Policy Advisor**

**Networking & Agenda setting** 

**Advisory &** 

Consultancy



#### 2006 - present

- Ph.D. in Foresight & Prospective Studies
- **Honorary Professor**

#### 2009 - present

A bi-monthly international journal championing futures studies

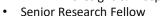
**Foresight** 

and literacy globally

- Editor-in-Chief: Foresight "The journal of Futures Studies, Strategic Thinking & Policy
- WoS ESCI & Scopus indexed
- Global outreach

### **Development**





#### **Capacity-building & Awareness raising**

- Executive Education (>15 years)
- Research Supervision (>50 graduates)
- Keynote Speeches (>70 countries)





emerald PUBLISHING

















### Futures Literacy: Concepts, evolution & the future

Innovation as an Beginning of Civilization Post World War Recurrent oil shocks economic driver Early Foresight 1950s 1960s 1980s 1970s Narrowly focused Innovation systems, Trend extrapolation, expert Multiple futures thinking The act of anticipation as a analysis (Delphi & crosstechnology-oriented due to increasing participatory approaches, basic human characteristic process & product benefits impact), computer simulations forecasting complexity & uncertainty S&T as a strategic Economic crises & climate Increasing frequency of Increasing pace of Science & Technology instrument with social & wild cards, shocks & change, energy & security economic benefits developments surprises issues 2000s 2010s 2020s **Future** 1990s Focus on Grand Challenges & Dynamic and adaptive Human-technology

Societal Problems and their

impacts

Recognition of the

and society

relationship between S&T

Foresight for S&T policy

making by government,

industry and others

collective intelligence & co-

evolution: Foresight-on-site

Foresight with increasing

use of data

### Five generations of Foresight

#	Characteristics	Conceptual rationale	Type of policy	Structure/design	Label
1	Prediction of Future Technologies	Science push model of innovation	Science policy	Expert group driven, elitist	Technological Forecasting
2	Using technology for markets	Demand pull model	Technology policy	Involves firms and policy makers	Technology Foresight
3	Broadening market perspective to include broader society	Demand pull, couplings, integrated model of innovation	Technology & Innovation policy	Socio-economic actors, interdisciplinary	Technology and Social Foresight
4	Broader scope, more distributed	Demand pull, couplings, integrated model of innovations, systems model	Innovation policy	Diverse actors, levels, goals and designs	Innovation Foresight
5	Sector or domain oriented Foresight activities	Mix of distributed Foresight programs	STI policy linked with industrial policies and strategic decision making	Wide set of actors from sectoral and industrial domains	Industrial Foresight

Georghiou (2008)

## Sources and number of publications

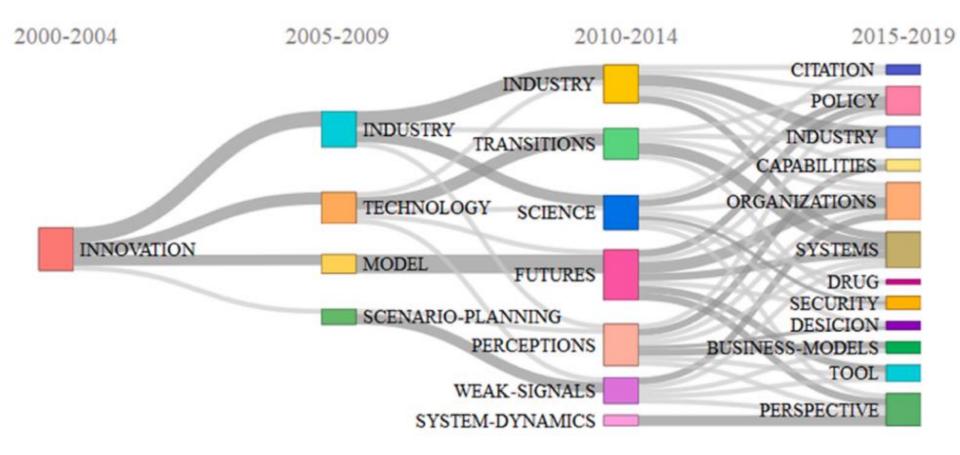
Journals	#*	Journals	#*
Technological Forecasting and Social Change	301	Journal of Forecasting	12
Futures	227	Technology Innovation Management Review	7
Foresight	100	European Planning Studies	7
Technology Analysis & Strategic Management	61	Research Policy	7
European Journal of Futures Research	56	R & D Management	6
Journal of Futures Studies	43	Creativity and Innovation Management	4
International Journal of Technology Management	19	Journal of Technology Transfer	3
Foresight And STI Governance	18	Technology In Society	3
Science And Public Policy	18	Strategy Science	3
On The Horizon	17	Journal Of Strategy And Management	2
Research-Technology Management	16	Business Horizons	
Technovation	14		

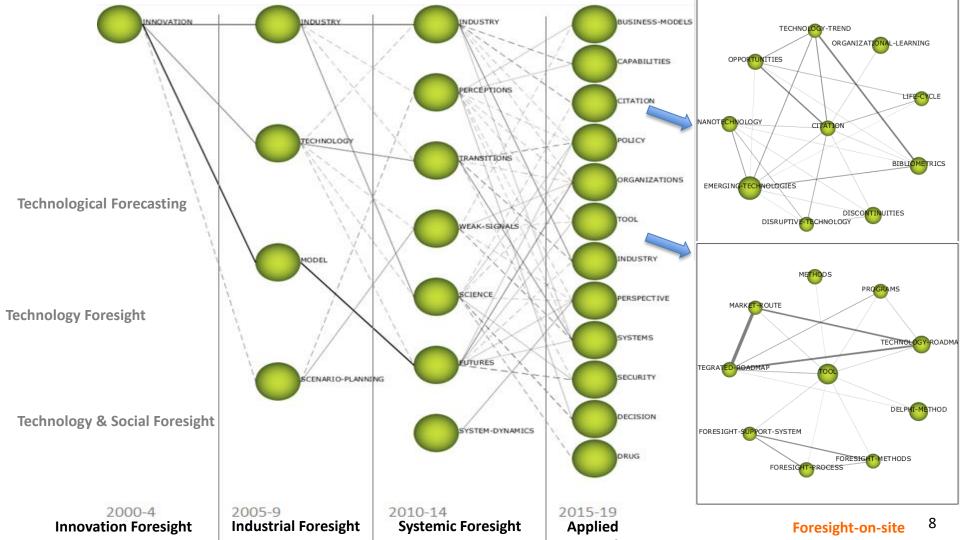
<sup>\*#:</sup> number of publications.

### Strategic diagram

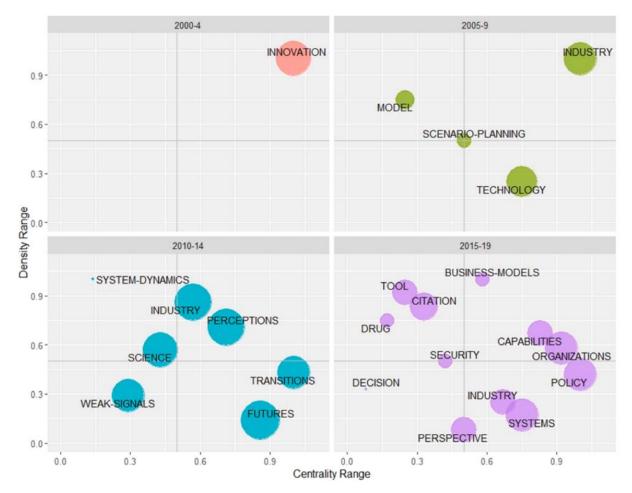
Density II. Highly Developed and I. Motor Clusters Isolated Clusters (central and developed) (peripheral and developed) Centrality III. Emerging or IV. Basic and **Declining Clusters** Transversal Clusters (peripheral and (central and undeveloped) undeveloped)

### **Evolution of concepts**





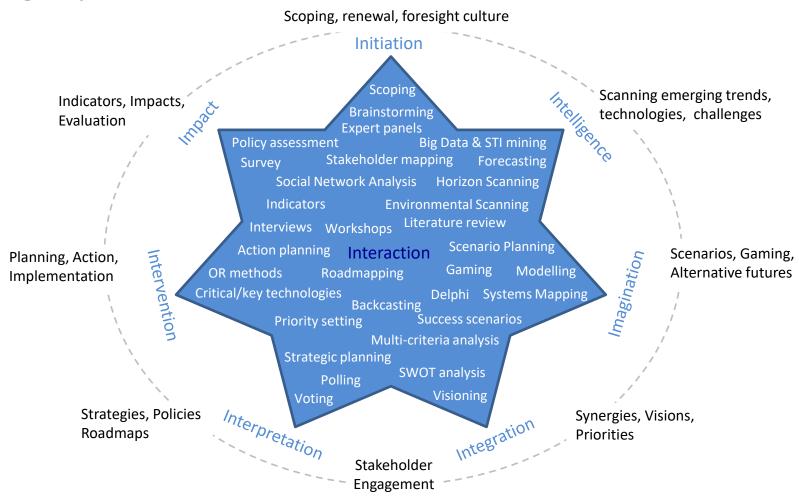
### Strategic diagrams for four periods



## New generations of Foresight

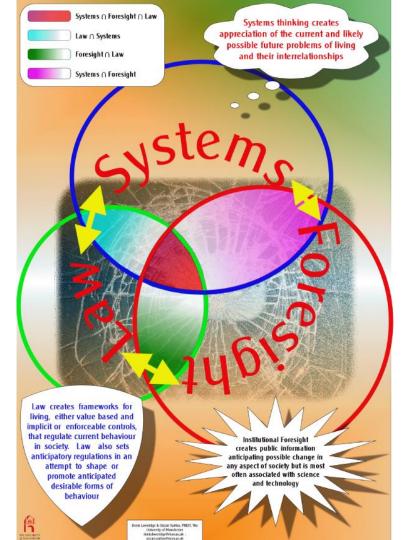
#	Characteristics	Conceptual rationale	Type of policy	Structure/design	Label
6	Systemic perspectives, orientation to grand challenges, globalization & localization	Global and large scale activities; quantitative and qualitative evidence-based studies	Systemic industrial, sectoral and thematic policies	Systems, actor-networks	Systemic Foresight
7	From concept to commercialization	Scientific and Industrial entrepreneurship, Data as new evidence along with expertize, Computer-aided activities	Translational Research, Technology, Innovation and Commercialization policy	Scientific, industrial & funding partnerships	Applied Foresight
8	Society and human-oriented futures; digital transformation; risks and resilience focus	Human-Technology Collective Intelligence	Integrated Technology, Economy & Social policies	Continuous and dynamic interactions of system actors on a regular basis with a future-oriented perspective as part of their routine	Foresight- on-site

### Foresight processes & methods



#### 2nd Mission of Foresight

Analyzing wider impacts of technological & social change: Ethical, Legal, Cultural, Value aspects



#### Foresight-on-site

- There is an increasing need that Foresight needs be closer to the sites of its application and integrated into not only policy-making processes, but also in operations and actions
- Foresight should go beyond bringing stakeholders in occasional or periodical activities. It should be brought closer to the sites of its application and should be on the agendas of all the stakeholders in their day-to-day activities
- Hence, there is a greater need for increasing the futures awareness and literacy, where individuals and stakeholders will gain the ability to understand how the future affects the present, and how the future can be shaped with present actions
- Foresight-on-site will go beyond the anticipation of future developments, and also have a 'second mission' to consider the further impacts of science, research, policies, and actions on society and humanity with ethical, legal, cultural, and value implications

#### Full reference

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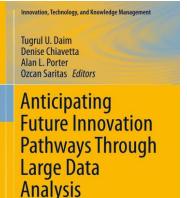
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Designing scientifically possible, economically feasible & socially desirable futures