

TIP @ 50 RESULTS FROM TIP TEXT-MINING ANALYSES

TIP@50: What have we learnt? Where is innovation policy heading?

11 December 2017







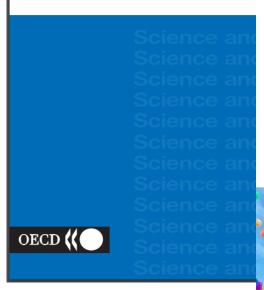


PATENTING AND LICENSING AT PUBLIC RESEARCH **ORGANISATIONS**



Commercialising Public

NEW TRENDS AND STRATEGIES















MEASURING SEHAVIOURAL ADDITIONALITY





Open Innovation in Global Networks

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Going one step further: Automatic text analysis techniques

- Analysis of text's contents, properties and characteristics allow not to read the text but to analyse and interpret representations of the information contained in those documents
- Application of different text-mining tools and techniques aimed at to extracting information from texts (including the digital platform CORTEXT (www.cortext.net) and iFora database and visual interfaces, Taltac and Spad, Iramuteq and visual interfaces



Going one step further: Automatic text analysis techniques

- **Pre-processing of TIP documents** over 25 years resulting in a total of 116 reports and 160 agendas/summaries
- Presentation reflects perspectives from 4 teams'
 analyses with own methodologies & tools

Words of caution:

- Results are dependent on data and methods and explain differences in findings
- Results are sometimes preliminary and early assessments
- More detail is available from research teams



There is much more to explore

 Possible 12-13 March workshop in Paris (back-to-back with CSTP)

Agenda items:

- Full presentation of results of the text-mining analysis of the TIP corpus
- How to use semantic analysis for innovation policy (detect trends, analysis, etc.)
- Best practice of semantic analysis (strengths and pitfalls, data quality, etc.)
- "Hands-on" experience of the possibilities of textmining (and of its limitations)





Semantic analysis of 100 TIP reports using the IPP vocabulary

OECD Directorate for Science, Technology and Innovation

Andrés Barreneche, Alina Deniau, Michael Keenan, Blandine Serve

OECD Library and Archives

Frédéric Abrazian, Mary-Ann Grosset, Jan-Anno Schuur, Thierry Vebr

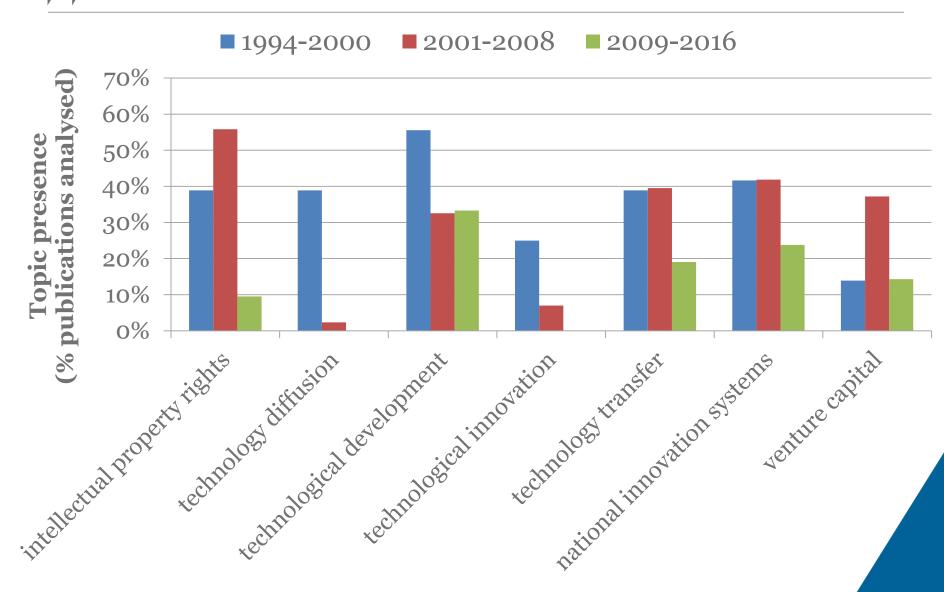


50 Most frequent topics 1994 – 2016



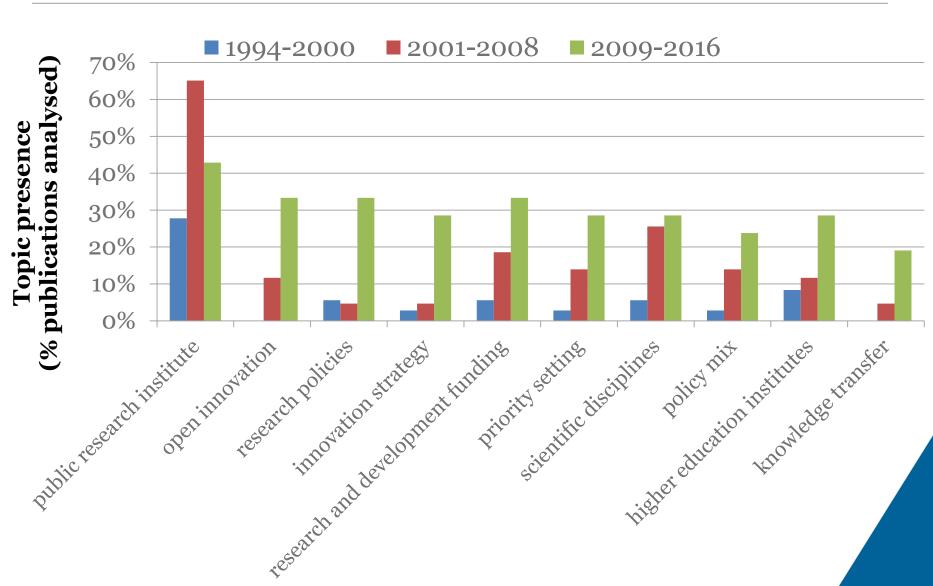


Topics becoming less frequent





Topics becoming more frequent





CAPP Research Centre for the Analysis of Public Policies

HINTS ON 50 TIP

UNIMORE INTERPRETS THE TEXTS FROM THE ARCHIVE OF OECD WPTIP'S

DOCUMENTS

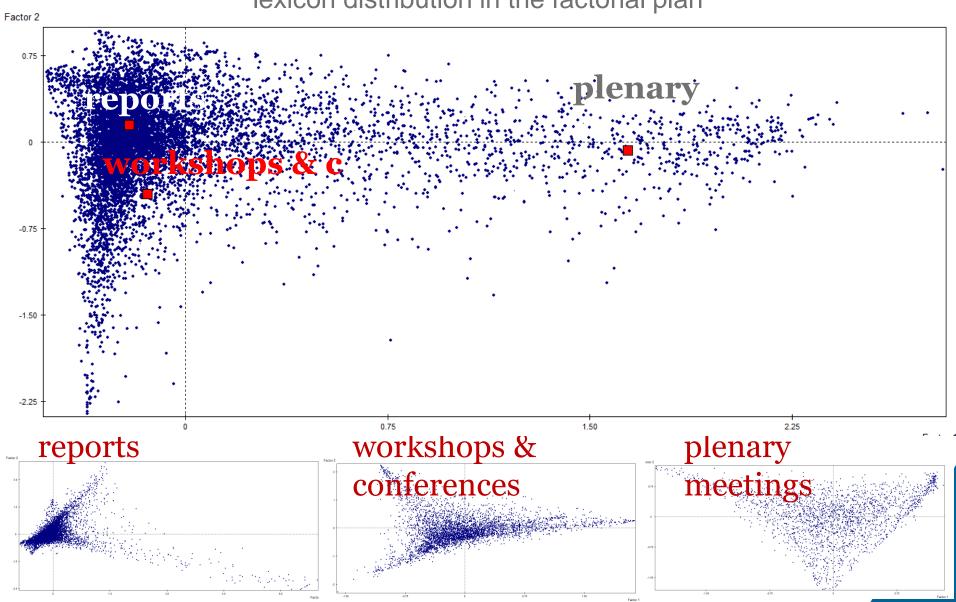
PRELIMINARY RESULTS

Margherita Russo and Pasquale Pavone



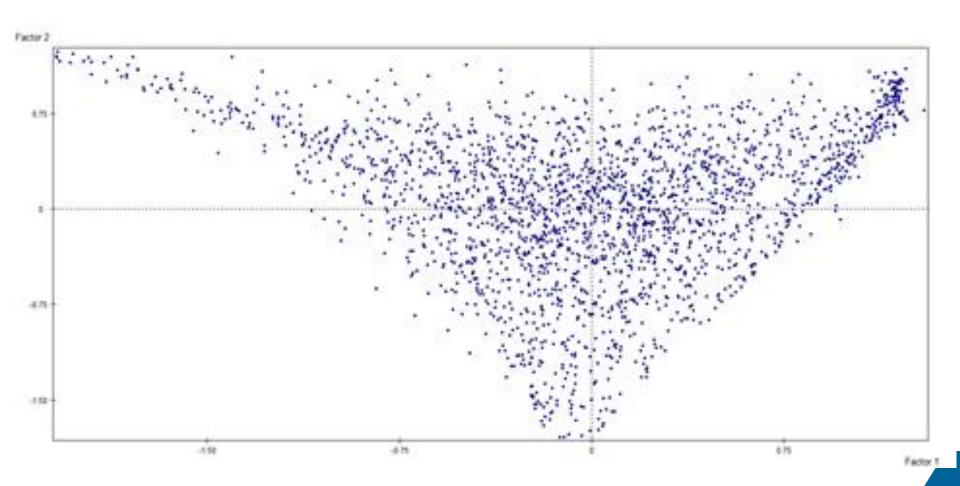
Corpus of texts

lexicon distribution in the factorial plan

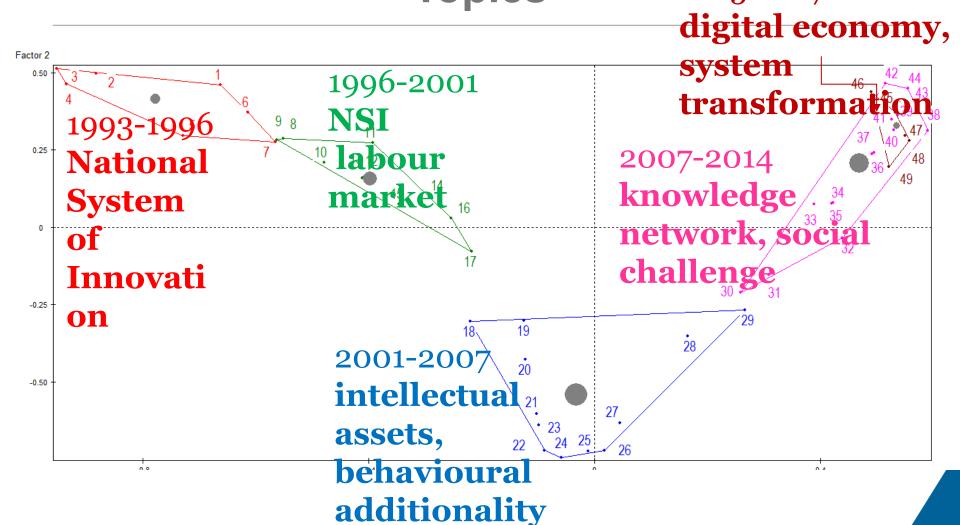




Plenary meetings 1-49

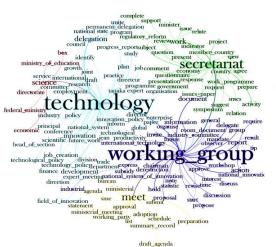


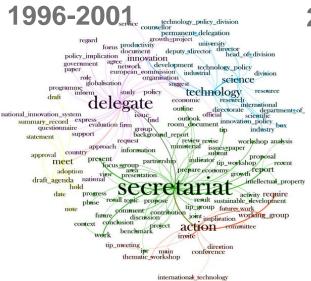
Plenary meetings 1-49 Topics 2015-2017

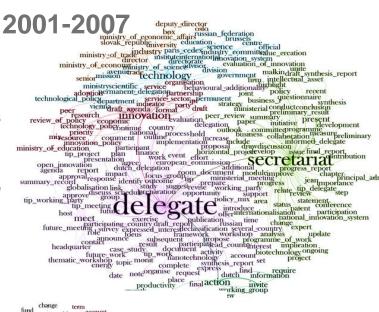


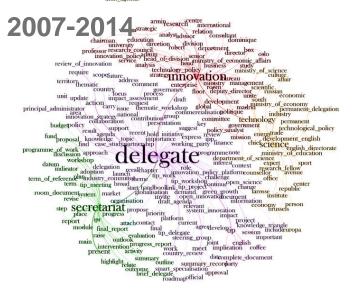
Plenary meetings 1-49 Organizational discourse_pivotal words

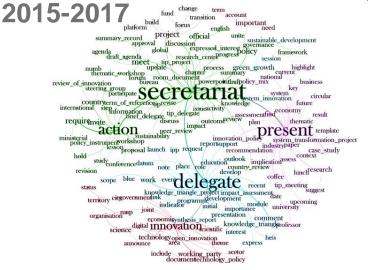
1993-1996











plenary meetings

1993-96

National System Innovation

1996-01

NSI labour market

2001-07i

intellectual assets, behavioural additionality

2007-14

knowledge network, social challenge

TOPICS

2015-17

digital economy, system transformation

venture capital

fiscal measures

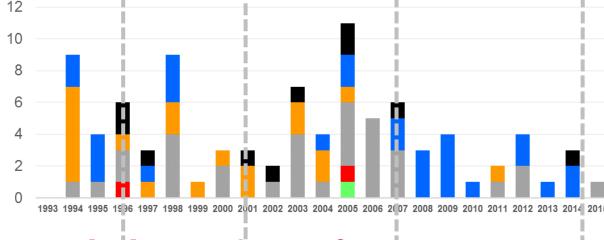
HEIs & research

KIBS, networking, science park, incubator environmental issues

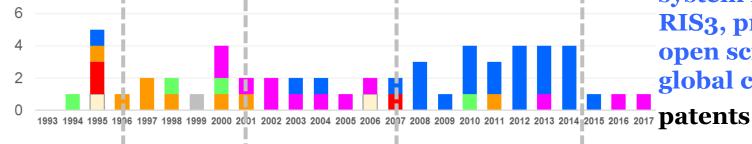
evaluation, 2015 2016 2017 behavioural additionality

> system innovation, RIS3, priority setting, open science, global challenge

reports



workshops & conferences





National Research University Higher School of Economics

Institute for Statistical Studies and Economics of Knowledge

Preliminary results of text mining study based on NRU HSE intelligentFOResightAnalytics (iFORA) system for

OECD Working Party on Innovation and Technology Policy (TIP)

http://issek.hse.ru

http://foresight.hse.ru

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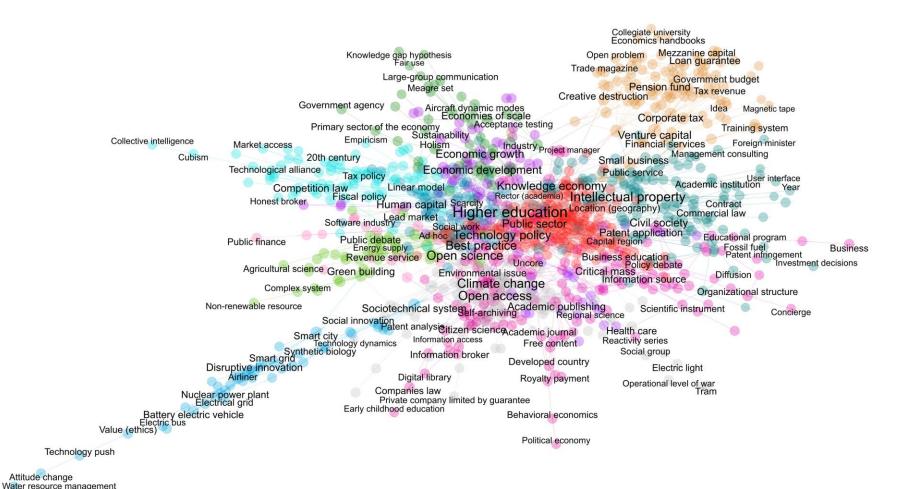


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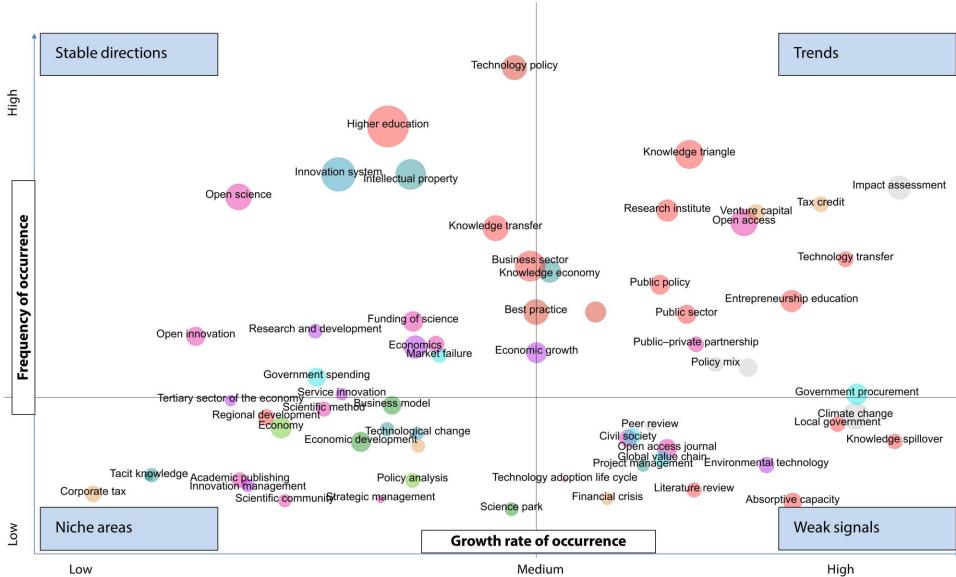


Semantic map of OECD TIP topics based on 1993-2017 period





Trend map of OECD TIP topics based on 1993-2017 period

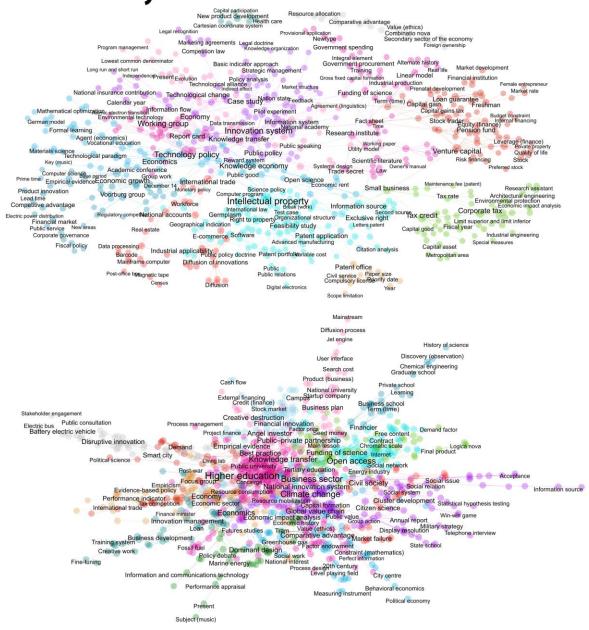




Structural comparative analysis

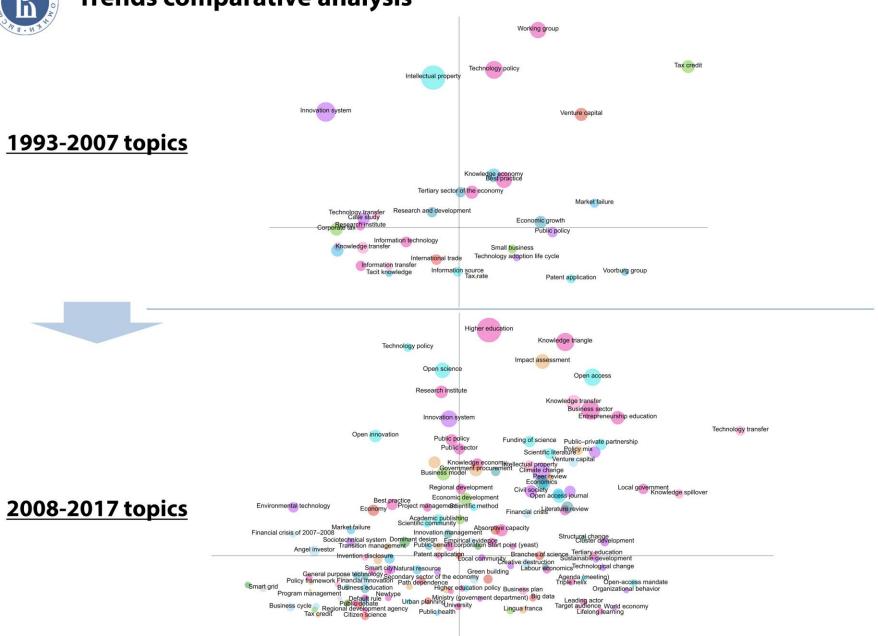
1993-2007 topics

2008-2017 topics





Trends comparative analysis















MANCHESTER

Policy mixes, policy processes & policy rationales: an analysis of OECD TIP working group 1994-2014

Philippe Larédo & Antoine Schoen



Themes: A focus on the 13 policy areas



POLICY AREAS	terms	P1	P2	P3	total
Public research	33	25%	25%	18%	23%
Knowledge transfer & commercialisation	23	12%	9%	9%	10%
Open science	4	0%	0%	10%	3%
Human resources	11	10%	3%	2%	5%
New and/or specific technologies	12	18%	6%	3%	9%
Services	9	3%	8%	1%	4%
Intellectual property	11	8%	16%	5%	10%
Tax incentives	9	5%	7%	1%	4%
Smart specialisation	7 4	0%	0%	10%	3%
Public private partnerships	7	2%	11%	17%	9%
Environment and green development	18	11%	5%	9%	9%
Global challenges	6	↑ 0%	3%	10%	4%
Other policy areas	13	4%	7%	5%	5%
	160	100%	100%	100%	100%

Number of terms per area

Occurrences of terms per area over the period P1=1994-2000; P2=2001-08; P3=2009-14

Two major results:

- 1) Unequal importance of themes: 5 themes represent 2/3rds of occurrences
- 2) only 4 areas are equally present over the period,
- 7 peak in only one period, 2 are nearly absent from one period



An overall views of links: 6 clusters highlighting 'sub' policy mixes

policy instruments

innovation to services
market failures policy mix
environmental sustainability
sustainable development green technology and innovation policy profiles environmental policy profiles
environmental policy policy areas policy frameworks policy profiles environmental innovations green growth
development and direction policy measurementices sector systems innovation
technology co-operation and technology make mic failures policy development
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software industry
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business strategies public investment in research
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search exemptions and additionally research results
Collaborative research and development
public private partnerships knowledge transfer
scientific research economic impacts exertly setting
open science contraction systems
business models public research and development
public research and development of public research
open access
open data

Clusters & their policy areas



Environment & New technology

Green Growth, Global challenges Smart specialisation policy instruments

innovation lo services market failures environmental sustainability sustainable developme green technology and innovation policy frameworks smart specialisation environmental policy policy areas green growth technology co-one wife mental (action agreem) c tailures policy measureer vices sector systems innovation policy development innovation performangement-side police technology diffusion programmes research base omic grewth international co-operation international technology co-operation innovation capacitgovernance arrangements knowledge base value charos ledge intensive services technology diffusion new technologies technology development snowledge flows

Tax Incentives Public private

weaton and research

open access

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and development activities industry-science relationships

venture capital globalisation and open in skating research public to technological knowledge technology fields ures intellectual property hechnology transfer research and development expenditures ppen in lavation model of impovation funded research taxbusiness essearch and development research use business strategies supporting research and development of partisations research exemptions additionality diffusion of knowledge llaborative research and development knowledge transfer public private partnerships commercial sing knowledge

Public Research K. commercialisation Open science

public investment in research policy interventions

Human

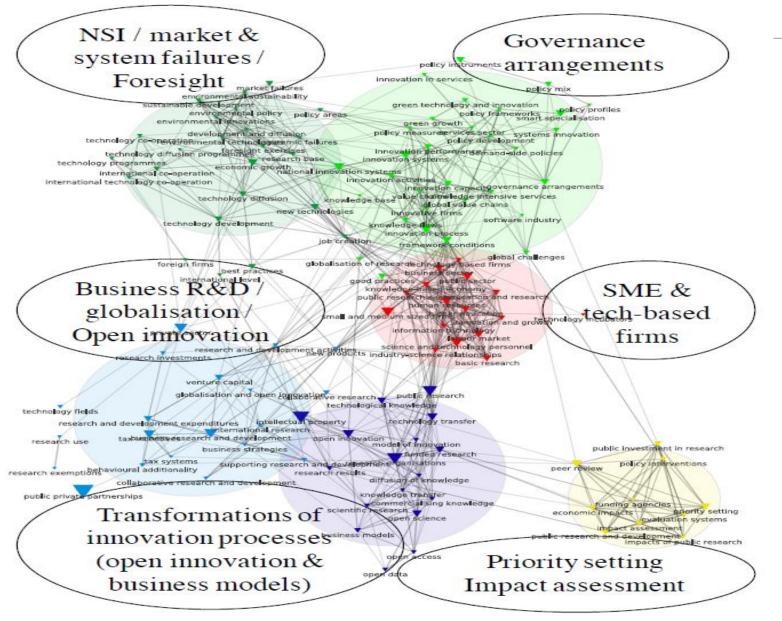
resources

funding agencies evaluation systems public research and developments impacts of public research

Policy processes & evaluation

Clusters: policy rationales & processes







Conclusions

- Innovation policy changed substantially over the past 25 years and 49 TIP meetings ...
- ... at the same time as a few themes have remained the same
- Semantic analysis itself and other new tools may mark new explorations of those very themes