

Learning about debated/recommended R&I policy mixes A semantic analysis of OECD documents Antoine Schoen - Philippe Larédo

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GOVERNANCE AND RELEVANCE: TOWARDS A NEW GENERATION OF
RESEARCH AND INNOVATION POLICIES

Outline

- A - Corpus & methodology
- B - Identifying policy areas
- C - Themes dealing with policy rationales, objectives & processes
- D - Preliminary conclusions
- E - Reflecting on results

A - Methodology

- 330 documents (reports, workshops, mandates, progress reports...)
- Mobilising the digital platform CORTEXT (www.cortext.net) for semantic analysis
- Based on an indexation of the central 'multi-terms' (not innovation but innovation systems) – de facto 312 different terms and on average 23 per document
- Two levels of analysis:
 - the vocabulary & its demography over 21 years
→ drives to identify 22 'themes': 13 policy areas, and 9 themes dealing with policy rationales, objectives and processes
 - the links between multi-terms
→ 6 overall clusters, that act 'de facto' policy mixes, and evolve over time (3 periods considered: 1994-2000; 2001-2008; 2009-2014)

B - Identifying 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	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

Policy areas: their relative importance & evolution over time / 1

- The dominance of public research
 - **Public Research** (23%) complemented by **knowledge management & commercialisation** (10%), both stable over the 3 periods
 - and in part further extended by the emergence of **Public Private Partnerships** (9% over the period, but 17% in the last period) & by '**Open Science**' (10% in the last period)
- The limited and vanishing interest for S&T domains, except environment
 - **New Technologies** represented 18% in the 1st period and went down to 3% in the last period
 - while **Environment & Greentech** weighted respectively 11 and 9% in the 1st and 3rd periods. Furthermore in the last period it is complemented by **Global Challenges** (10%, 4% overall)

Policy areas: their relative importance & evolution over time / 2

- Evolving situations in terms of procedural instruments
 - **IPR** builds one of the 5 important areas (10%) peaking in the 2nd period (16%) and losing ground in the 3rd (5%). A large part of it deals with IPR in the public sector
 - **Tax incentives** has never been a major topic (4% overall) and has lost most of its interest in the last period (1%)
 - Both are replaced in the last period by an new entrant, **Smart Specialisation** (10% in the last period, 3% overall).
- Interestingly **Human Resources** were a key issue in the first period associated with new technologies (10%) before becoming marginal (respectively 3% and 2% in the 2nd and 3rd periods)

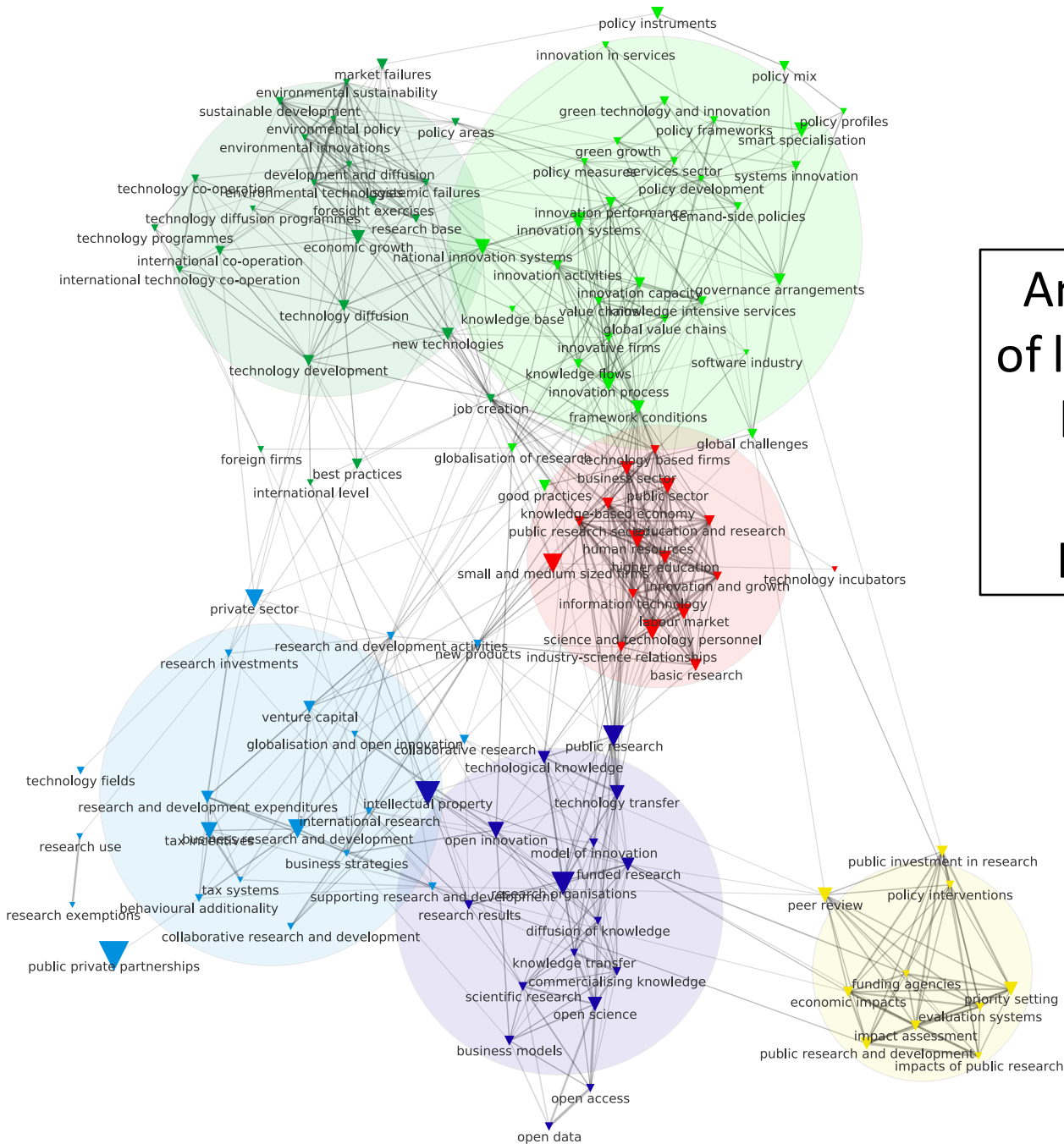
B – 9 themes dealing with policy rationales, objectives & processes

POLICY RATIONALES, OBJECTIVES & PROCESSES	terms	P1	P2	P3	total
Systems approach	3	10%	7%	4%	7%
Factors underlying observed changes	8	8%	3%	3%	5%
Internationalisation / globalisation	19	12%	7%	10%	10%
Overall situation of the business sectors	15	10%	16%	10%	13%
Transformation in innovation processes	20	6%	15%	18%	13%
Objectives of policies	21	17%	13%	14%	15%
Firms targeted	13	18%	5%	5%	9%
Policy processes: governance and practices	34	13%	21%	27%	20%
Policy processes: evaluation and impact assessment	18	6%	12%	9%	9%
	151	100%	100%	100%	100%

- As many terms and occurrences to justify policies than for policy areas
- nearly half focus on the changing environment (3 central aspects: changing innovation processes, overall business situation, globalisation)
- 30% deal with policy processes, with a clear focus on governance, good practices & evaluation
- 25% define objectives (with 10% concerning firms, mostly SME & start-up related)

Analysing linkages

- A semantic analysis delineating bottom-up core linkages and the clusters they build
- Two steps:
 - providing an overall view of clusters over the whole period
 - focusing on the post-crisis period
- The approach:
 - focusing first on policy areas in clusters
 - analysing then the connections with policy rationales, policy objectives & policy processes
- Some unexpected conclusions, seen as hypotheses for future enlarged work



An overall view
of links: 6 clusters
highlighting
'de facto'
policy mixes

Environment & New technology

Green Growth, Global challenges, Smart specialisation

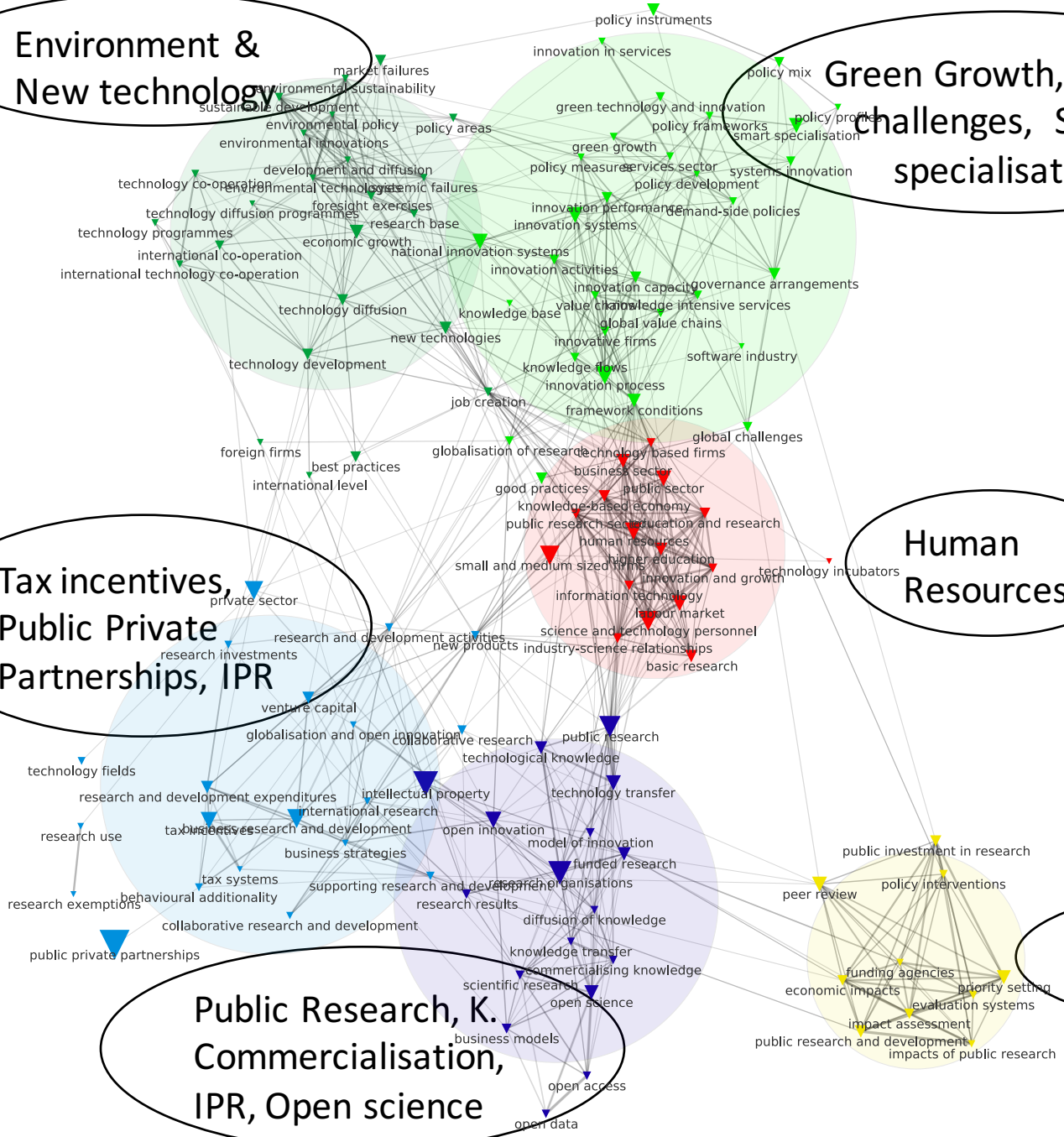
Clusters & their policy areas

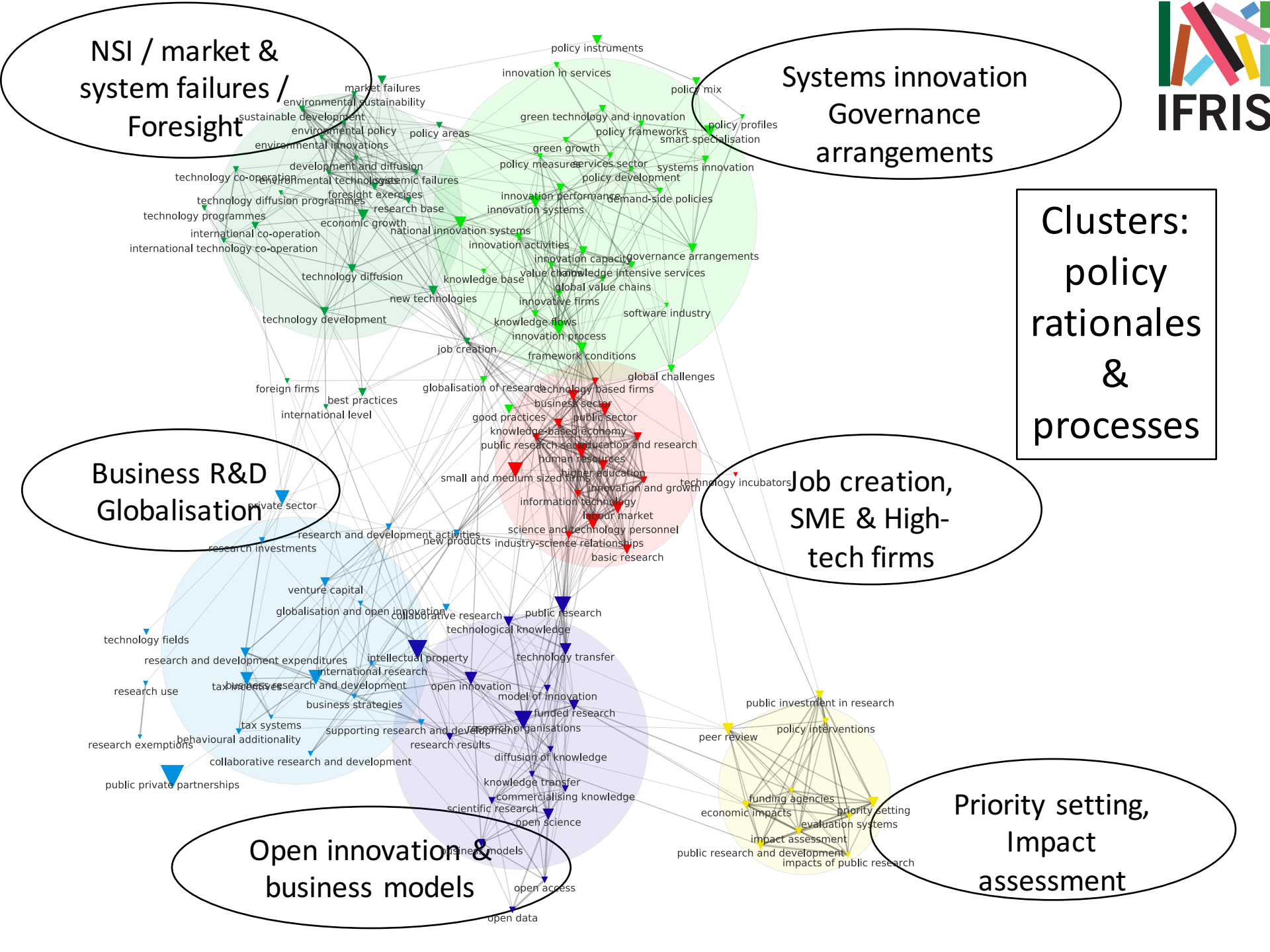
Tax incentives, Public Private Partnerships, IPR

Human Resources

Policy processes & Evaluations

Public Research, K. Commercialisation, IPR, Open science





NSI / market & system failures / Foresight

Systems innovation Governance arrangements

Clusters: policy rationales & processes

Business R&D Globalisation

Job creation, SME & High-tech firms

Open innovation & business models

Priority setting, Impact assessment

1994-1999

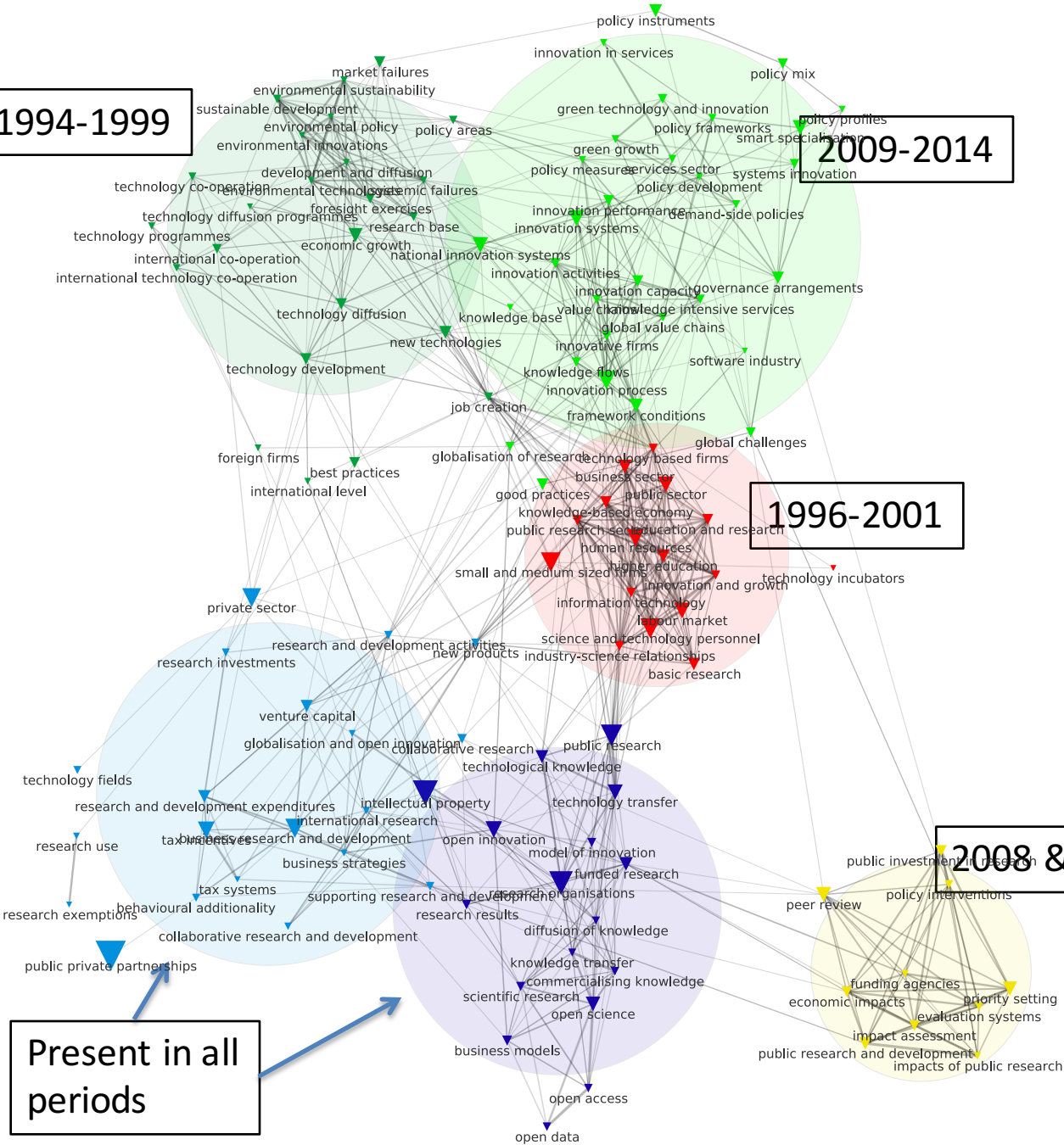
2009-2014

1996-2001

Clusters & their privileged years

2008 & after

Present in all periods

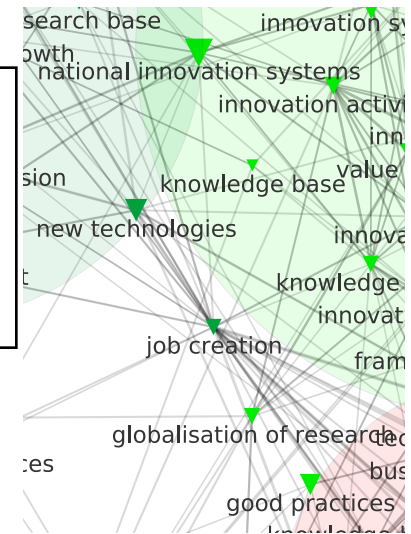




Links between environment & new tech cluster & the firm
 procedural cluster : *private sector & foreign firms*

Limited 'generic' linkages between clusters

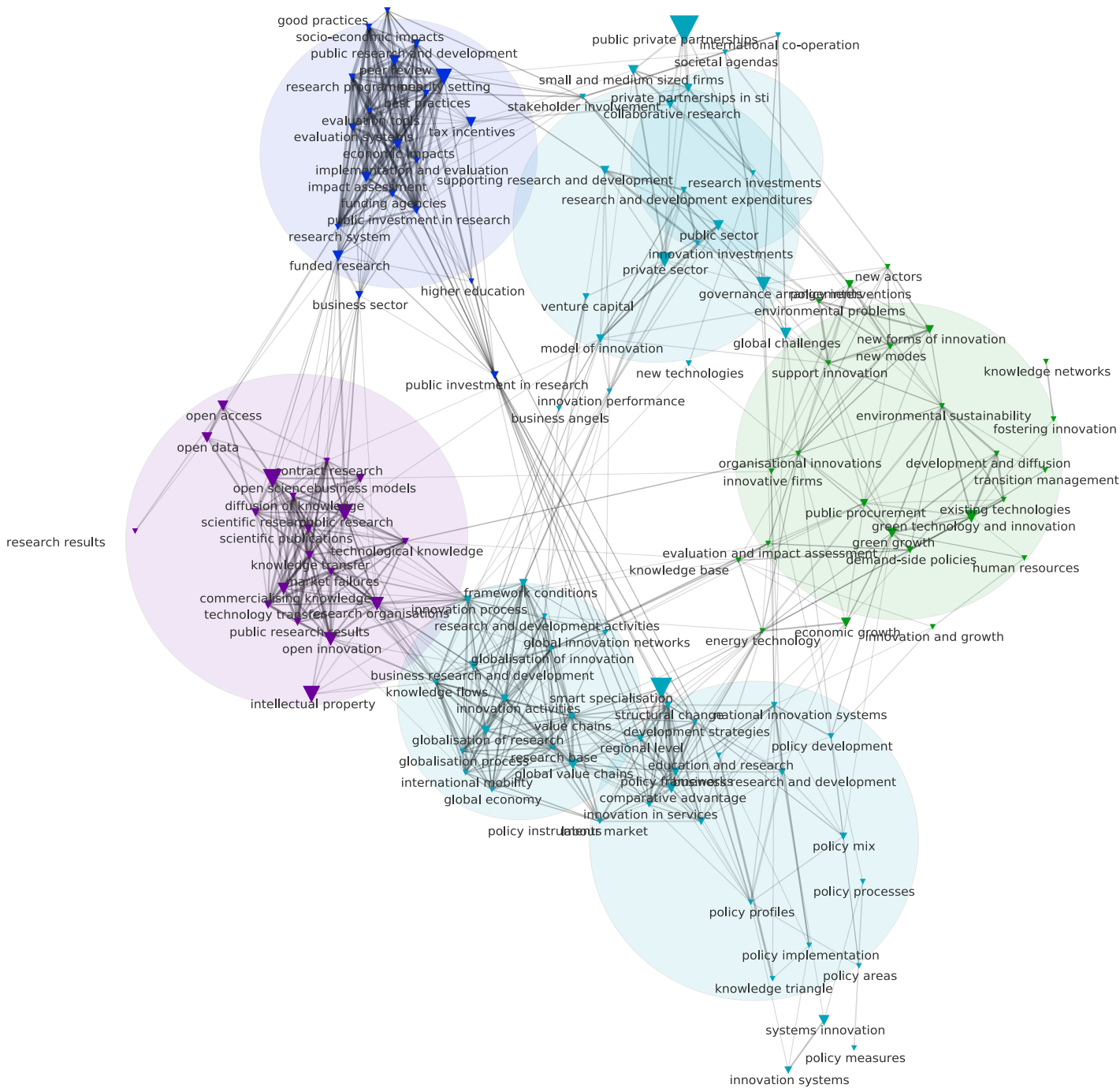
Links between environment / green tech clusters: *national innovation systems*
 And with HR cluster: *job creation*



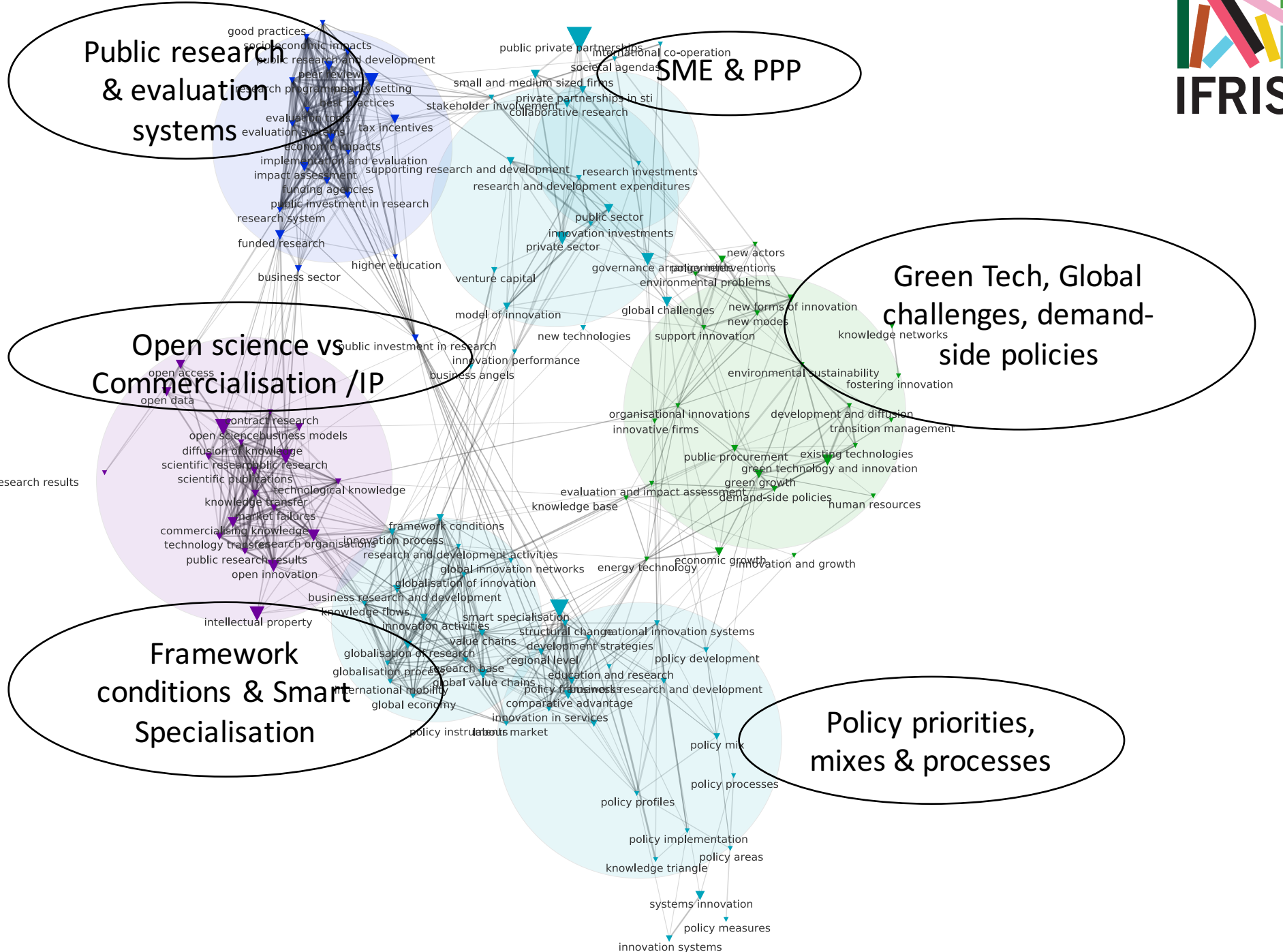
Links between firm procedural cluster and Public research cluster: *intellectual property & open innovation*

C - 4 preliminary conclusions

1. What is striking is the ‘internal strength’ of clusters - meaning a specific articulation between policy areas, policy rationales & in part policy processes – and the weakness of linkages (mostly of a ‘generic’ nature).
2. This underlines the lasting focus on public sector research, directly or indirectly (in particular relations with firms)
3. A striking phenomenon: the limited presence of new ‘tech’ (such as NBIC) vs the lasting presence of ‘environment’
4. The framing and evaluation of policies is a lasting preoccupation



How stable are these results: focusing on the post-crisis period (2008 & after)



Public research & evaluation systems

SME & PPP

Open science vs Commercialisation /IP

Green Tech, Global challenges, demand-side policies

Framework conditions & Smart Specialisation

Policy priorities, mixes & processes

Public investment in R&D

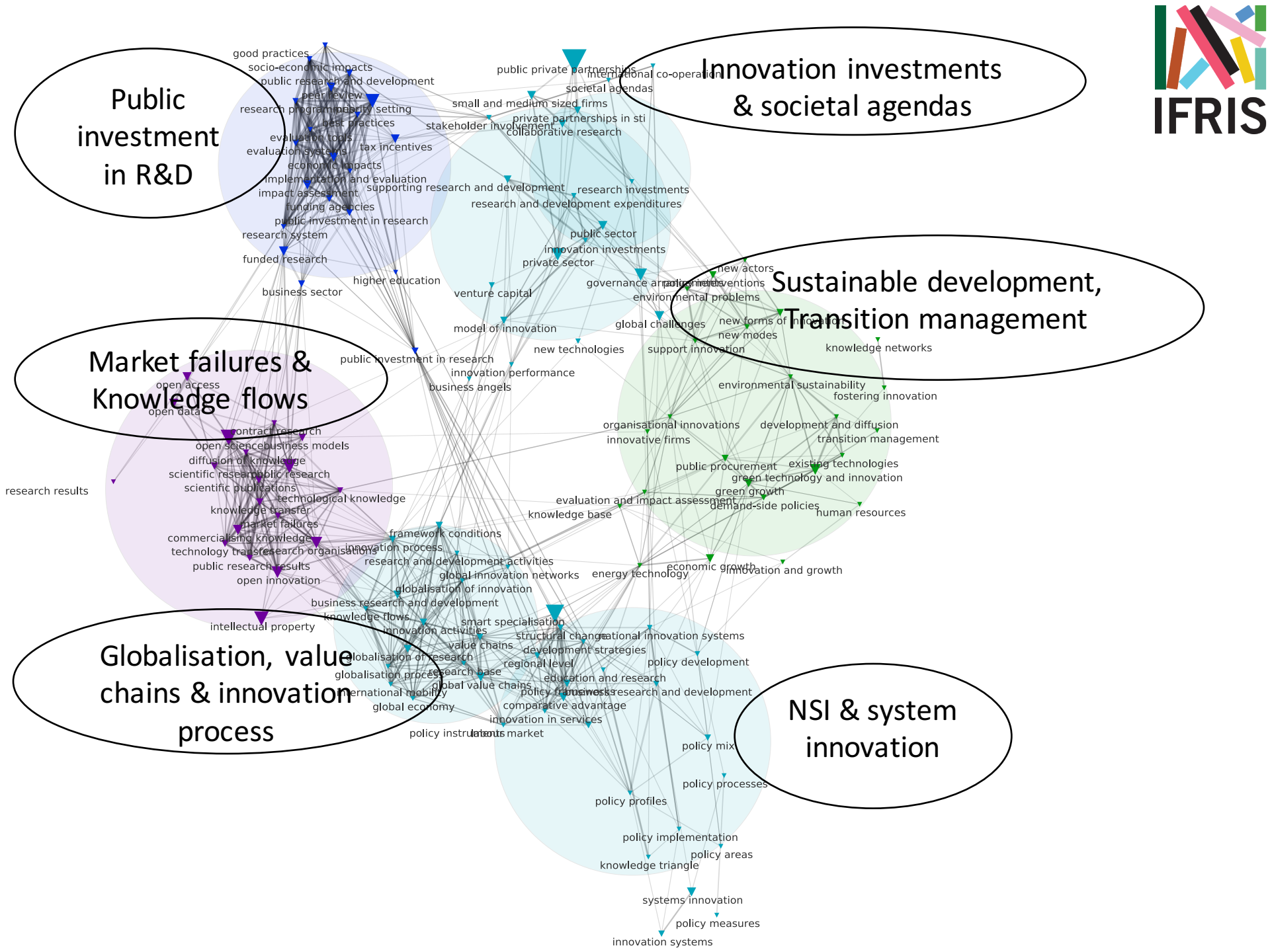
Innovation investments & societal agendas

Sustainable development, Transition management

Market failures & Knowledge flows

Globalisation, value chains & innovation process

NSI & system innovation



The post crisis period: Changes observed

- We have now only one thematic focus, around global challenges, sustainable development & green technologies, associated with a new understanding of innovation processes (systems innovation) and new policy approaches – transition management & demand side policies
- This is complemented by a focus on ‘framework conditions’ and ‘smart specialisation’ (strongly linked to globalisation and value chains)
- Public investment in research remains central, with three developments about
 - performance and impacts of public research
 - a paradoxical tension between IP and commercialisation of knowledge on the one hand, and open science on the other
 - supporting SME and sharing the burden with large actors (public private partnerships)

D - Reflecting on results / 1

- Periodisation matters, meaning that policy debates evolve over time – but it requires that we better discuss the issue of policy ‘absorptive capacities’.
- We are struck by the importance given to rationales and analysis of the changing situation in the overall production of OECD forum: policymakers really try to understand!
- We are struck by the lasting relevance of Piganiol 3 macro objectives: nurturing the public sector, supporting firm innovation capabilities, addressing societal issues.
- Clearly the first –nurturing the public sector – has been and remains a core preoccupation, even with changing foci

Reflecting on results / 2

- We really question ourselves about policy mixes:
 - What we face are sets of 'targeted' or 'specialised' policy mixes that evolve over time both in their definition and in the instruments they mobilise.
 - But they remain poorly articulated
- The idea that we face one policy mix, embracing & articulating all dimensions does not seem realistic.
- And thus what does it tell us about the transformation of policies to become 'transformative policies' nurturing system change?