• Smart specialisation – the concept and a few insights about Upper Austria

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(with the collaboration of Monica Coffano)

Intelligente Spezialisierung als regionale Standortstrategie
Linz
3 May 2016

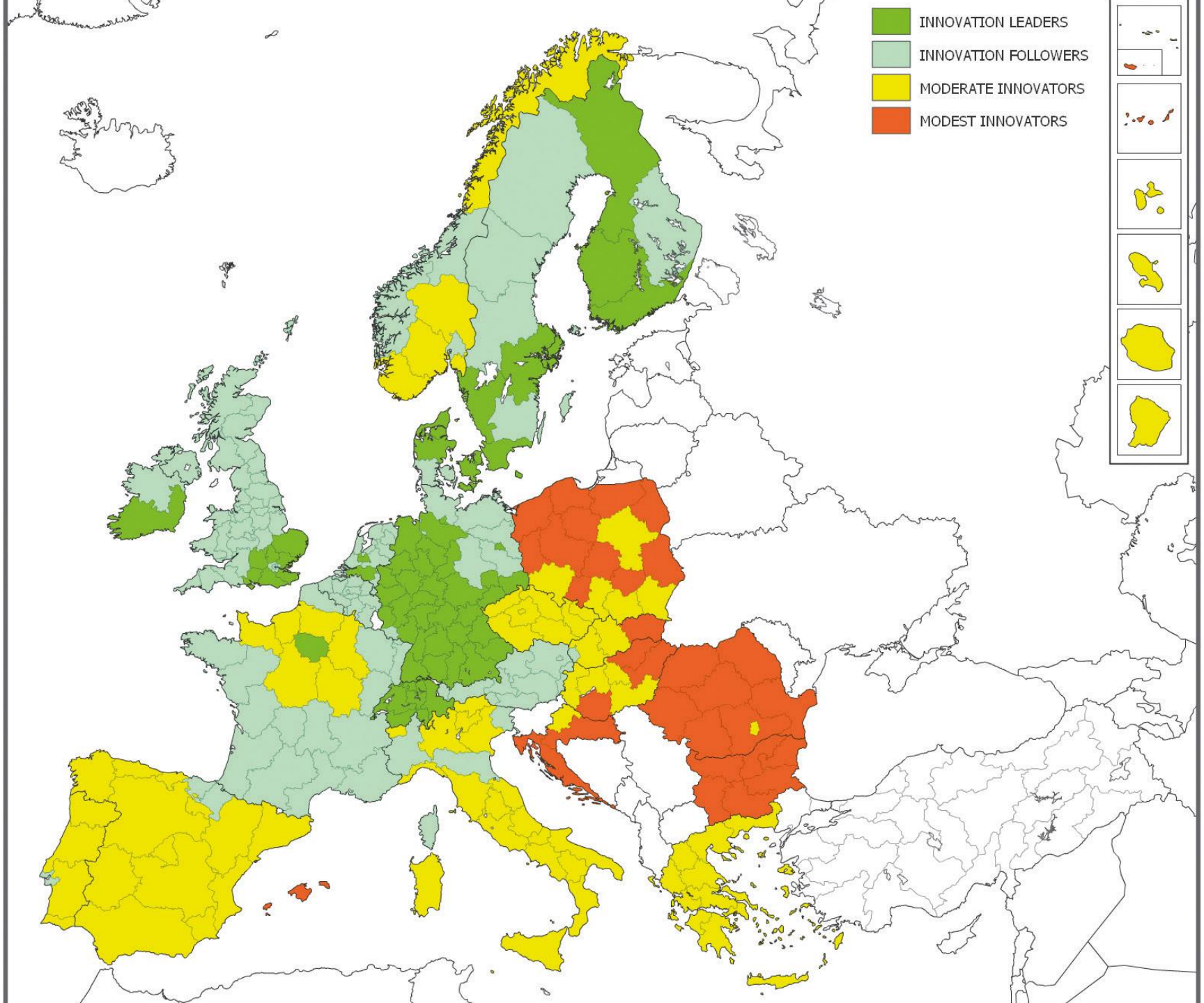
Innovativeness of companies
Business R&D expenditures
Product & process innovations
Patent intensity
Export-oriented region

Steel and metallurgy
Automotive
Chemistry, paper
Machinery, production technologies & plant engineering
Food industry
Environment/energy
Services

Industrial tradition
Human capital
Entrepreneurs/SMEs
Great neighbours
Policy (clusters)

Issues of concern

- **Upper Austria is not ranked as an innovation leader**
- Structural changes are slow
- Small size
- Big revolutions are coming


INNOVATION LEADERS
INNOVATION FOLLOWERS
MODERATE INNOVATORS
MODEST INNOVATORS

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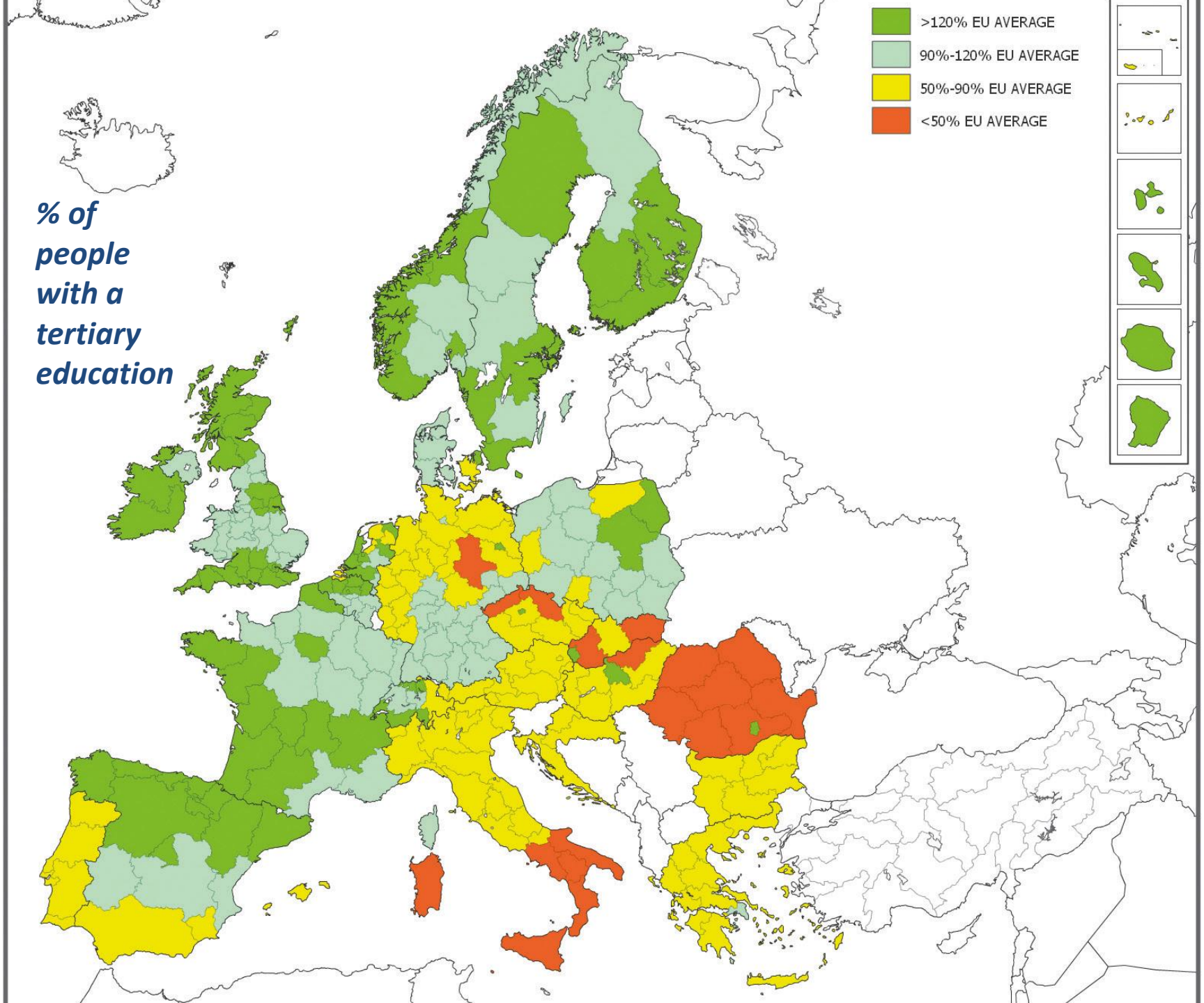
% of people with a tertiary education
>120% EU AVERAGE
90%-120% EU AVERAGE
50%-90% EU AVERAGE
<50% EU AVERAGE

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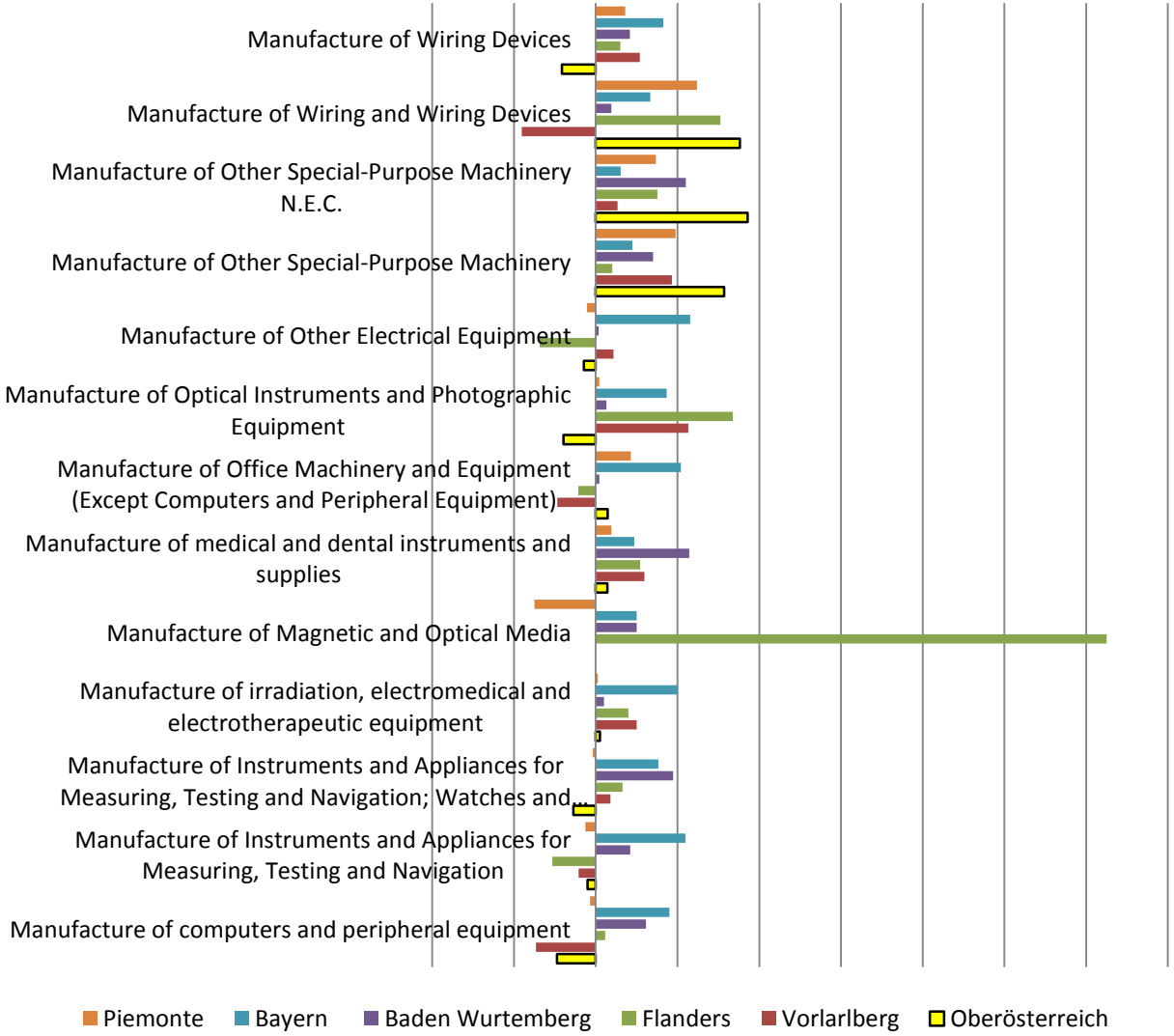
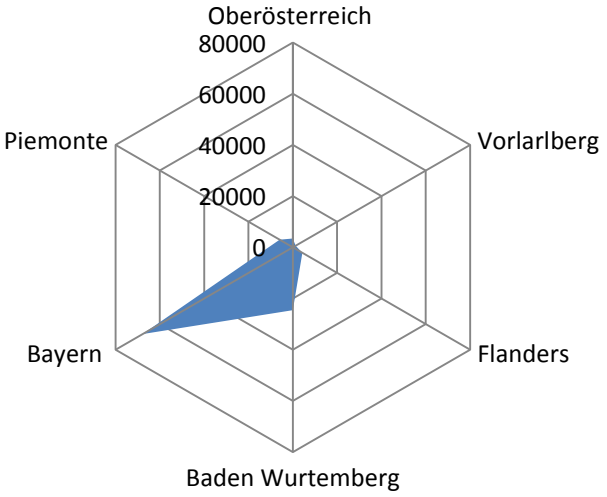
Small size

RTS Electro Mechanics and Optics



Electro Mechanic Optics

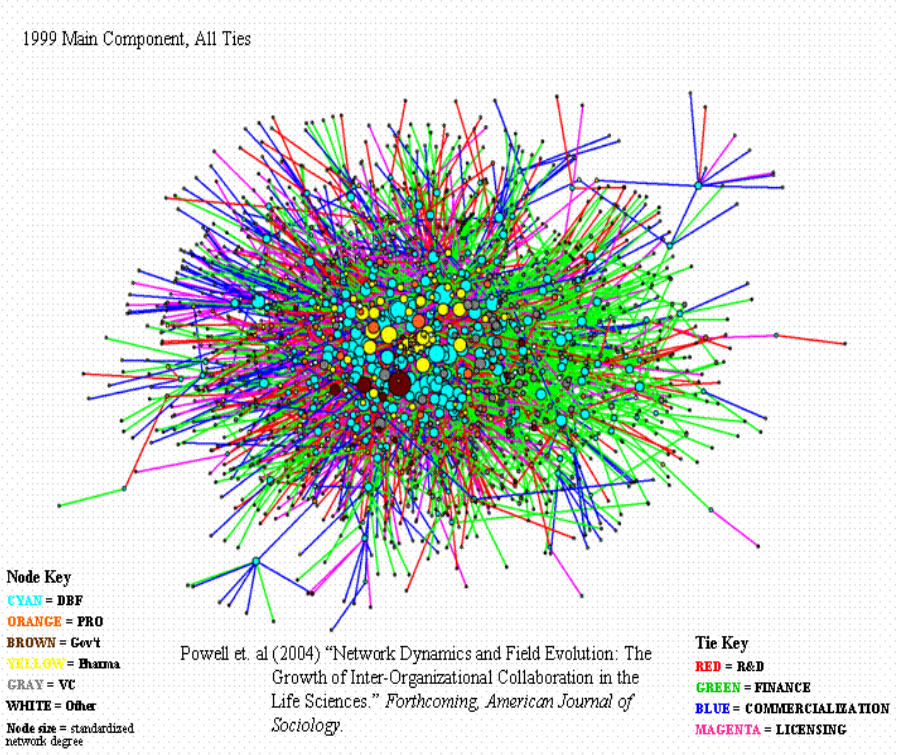


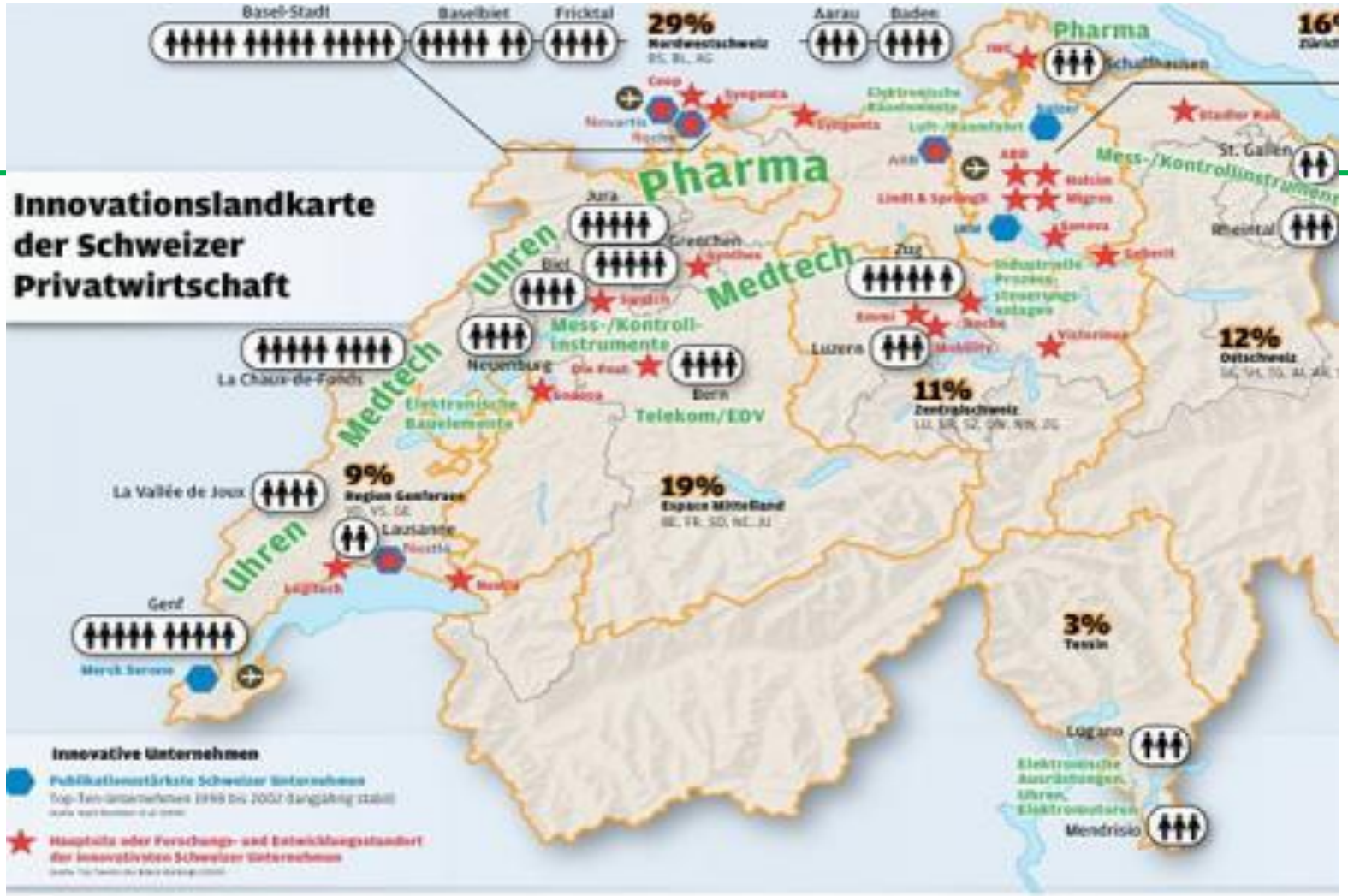
Small size

Most leading regions are 5 to 10 times larger

Critical mass as a key determinant

- Quantity – density of firms within the same and related industries
- Quality – large firms, Universities, complementary services
- Network & connection to outside (incl. crossborders)




Innovationslandkarte der Schweizer Privatwirtschaft
Basel-Stadt
Baselbiet
Fricktal
29%
Nordwestschweiz
Aarau
Baden
Pharma
Schaffhausen
Pharma
Jura
Uhren
Biel
Medtech
Zug
Mess-/Kontrollinstrumente
St. Gallen
Rheintal
Neuenburg
La Chaux-de-Fonds
Medtech
Mess-/Kontroll-instrumente
Elektronische Bauelemente
Bern
Telekom/EDV
Luzern
12%
Ostschweiz
11%
Zentralschweiz
La Vallée de Joux
9%
Region Genfersee
Lausanne
Uhren
19%
Espace Mittelland
Genf
3%
Tessin
Lugano
Elektronische Ausrüstungen, Uhren, Elektromotoren
Mendrisio
Innovative Unternehmen
Publikationsstärkste Schweizer Unternehmen
Top-Ten-Unternehmen 1998 bis 2002 (langjährig stabil)
Hauptsitz oder Forschungs- und Entwicklungsstandort der innovativsten Schweizer Unternehmen

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THE SECOND MACHINE AGE

WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES

Industry 4.0, big data, additive manufacturing, digitalization, sharing economy

The new △ : high edu, start ups - VC

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3 - Smart Specialisation: The Concept

Dominique Foray[15], Paul A. David[16] and Bronwyn Hall[17]

This brief introduces the basic concept of "Smart Specialisation" (SS) which has been a leading idea of the Knowledge for Growth expert group (K4G). The concept is spelled out in more detail in Policy Brief N° 1[18] in relation to globalisation. Other K4G Policy Briefs that refer to the concept are those on Catching-up Member States (N° 5) and on technology and specialisation (N°8).

Rationale for invigorating the R&D specialisation policy discussion

Addressing the issue of specialisation in the R&D and innovation is particularly crucial for regions/countries that are not leaders in any of the major science or technology domains. Many would argue that these regions/countries need to increase the intensity of knowledge investments in the form of high education and vocational training, public and private R&D, and other innovation-related activities. The question is whether there is a better alternative to a policy that spreads that investment thinly across several frontier technology research fields, some in biotechnology, some in information technology, some in the several branches of nanotechnology, and, as a consequence, not making much of an impact in any one area. A more promising strategy appears to be to encourage investment in programs that will complement the country's other productive assets to create future domestic capability and interregional comparative advantage. We have termed this strategy "smart specialisation."

Smart specialisation is expected to create more diversity among regions than a regime in which each region tries to create more or less the same in an imitative manner. The latter would almost certainly result in excess correlation and duplication of R&D and educational investment programs, which in turn would diminish the potential for complementarities within the European knowledge base. It is both an idea and a tool to help regions or countries to answer this critical question about their respective (and unique) positions in the knowledge economy.

[15] Chair of Economics of Innovation, College of Management at EPFL – Switzerland, and Vice-Chairman of the "Knowledge for Growth" Expert Group

[16] Professor of Economics at Stanford University, Professeur Titulaire of Innovation & Regulation in the Digital Economy at Ecole Polytechnique and Telecom Paris Tech.

[17] Professor at the University of California at Berkeley and Professor of Economics of Technology and Innovation at the University of Maastricht, Netherlands.

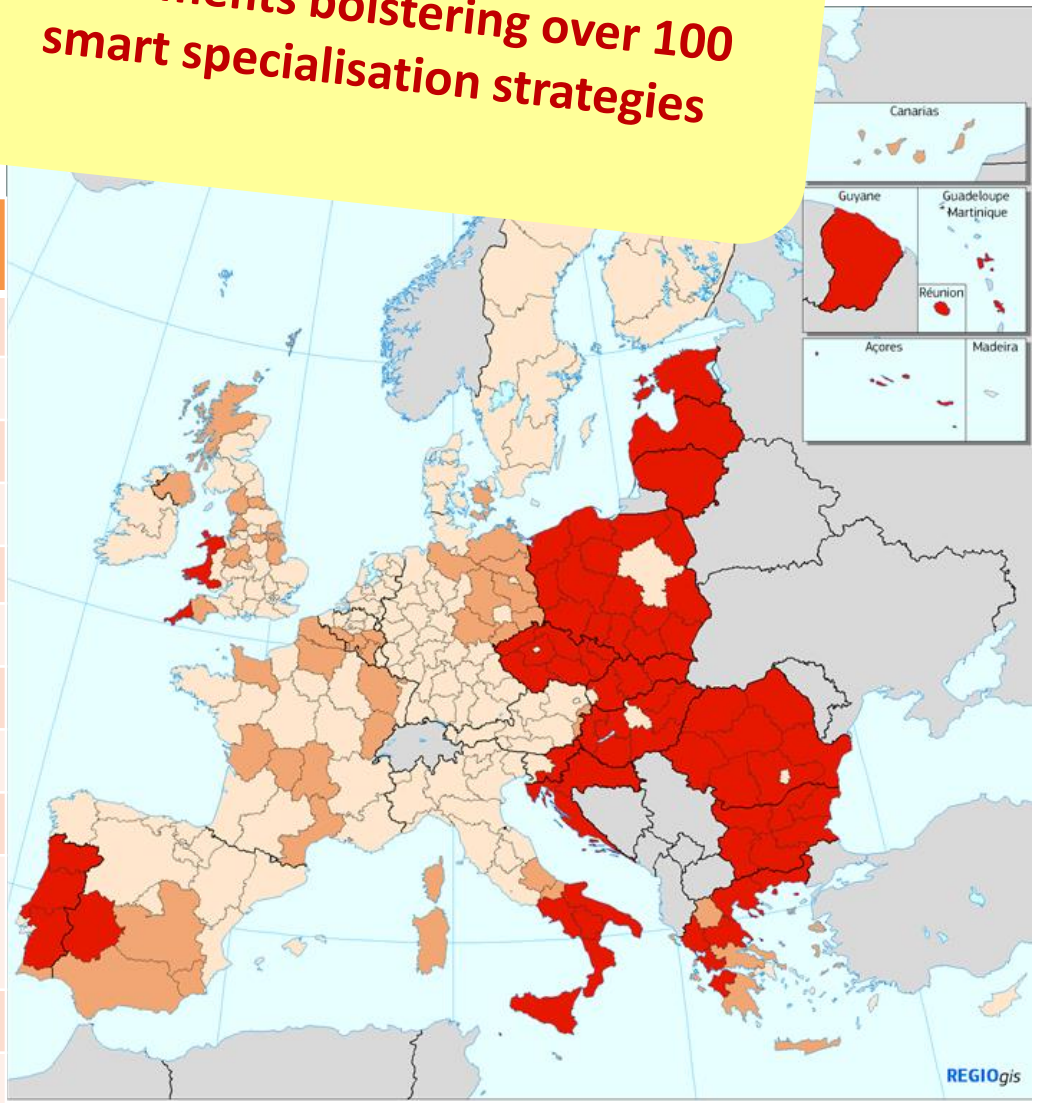
[18] Reports and Policy Briefs of the K4G expert group are to be found at: http://ec.europa.eu/invest-in-research/monitoring/knowledge_en.htm

Up to €100 billion for innovation investments bolstering over 100 smart specialisation strategies

Eligibility map 2014-20

- Less developed region (GDP/head: less than 75%
- Transition regions (GDP/head between 75% and 90%)
- More developed region (GDP/head: more than 90%)

	Billion EUR
Less developed regions	164.3
Transition regions	31.7
More developed regions	49.5
Cohesion Fund	66.3
European territorial cooperation	8.9
Of which	
Cross border cooperation	*6.6*
Transnational cooperation	*1.8*
Interregional cooperation	*0.5*
Outermost regions and northern sparsely populated regions	1.4
Youth Employment initiative	3.0
TOTAL	**325.1**



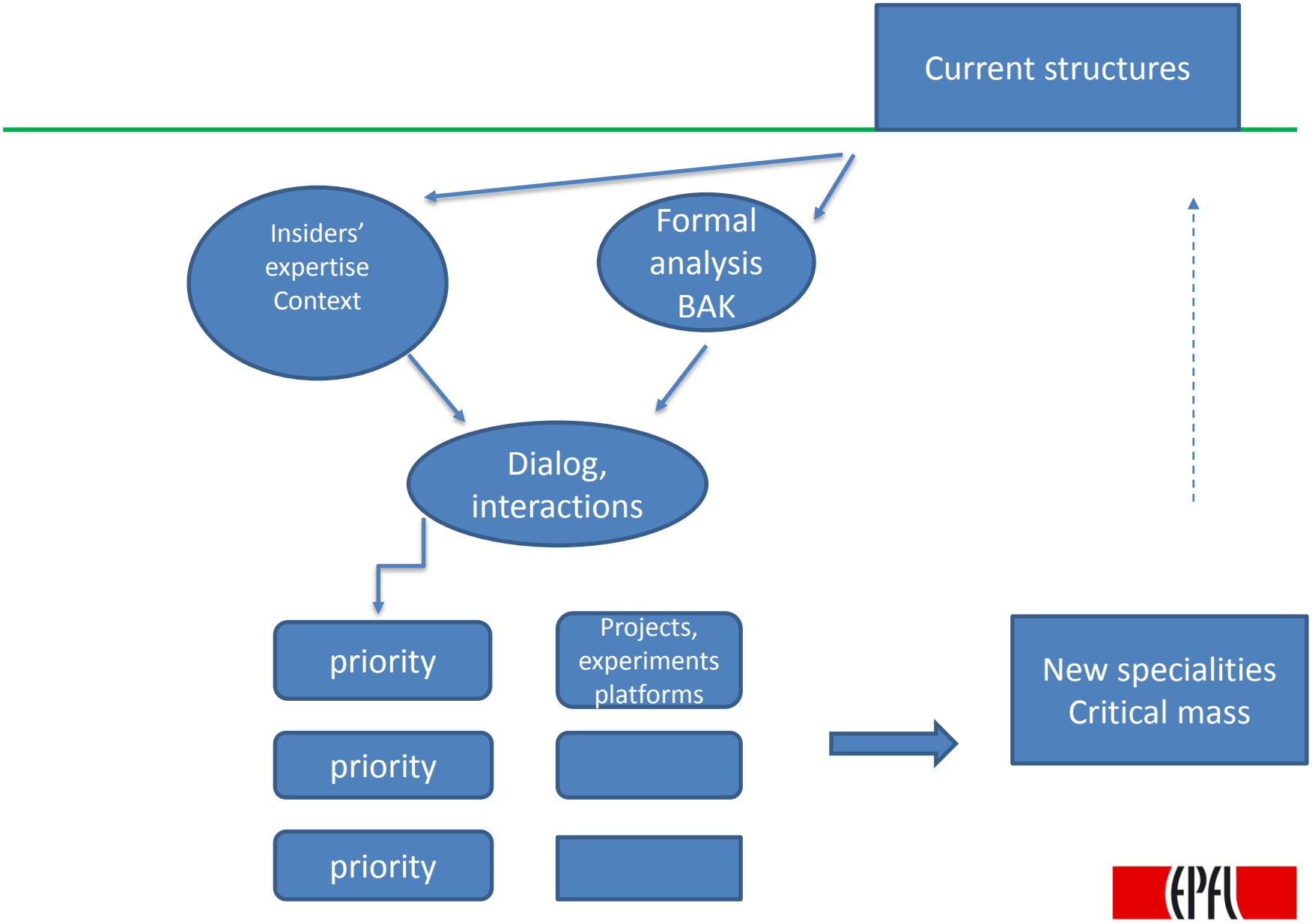
Smart specialisation

- Most regions cannot reach critical mass everywhere – they need to specialise and to particularize themselves
- Specialisation : a dangerous game?
- RIS3 involves
  - Building a vision for the future of the Region in terms of potentials, opportunities and priorities
  - Undertaking concrete actions to realize the potentials – i.e. generate critical mass in some domains and drive structural changes
  - Understanding it as a continuous process!
- Critical problem : identifying potentials and priorities

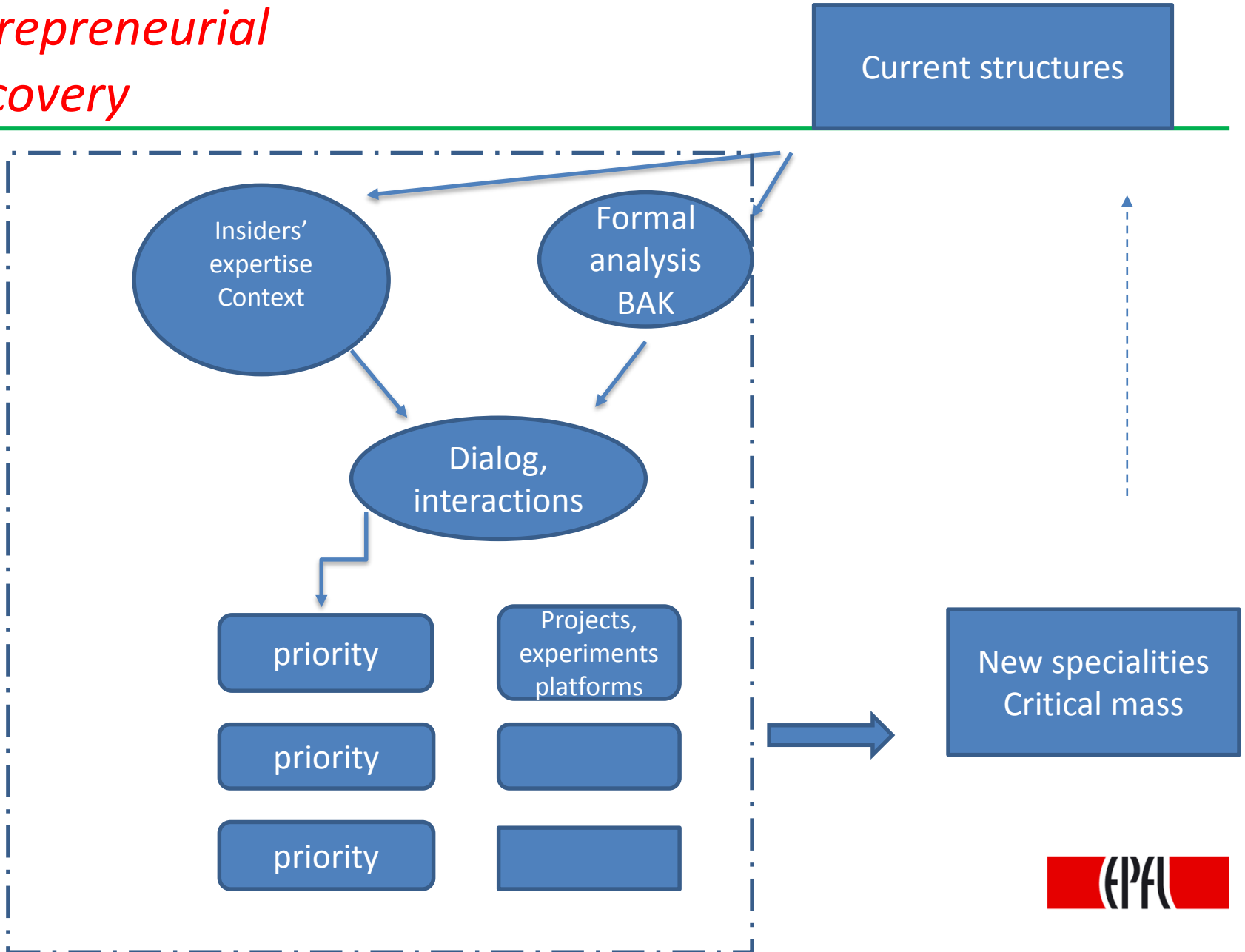
Selecting priorities: How?

Identifying potentials & selecting priorities

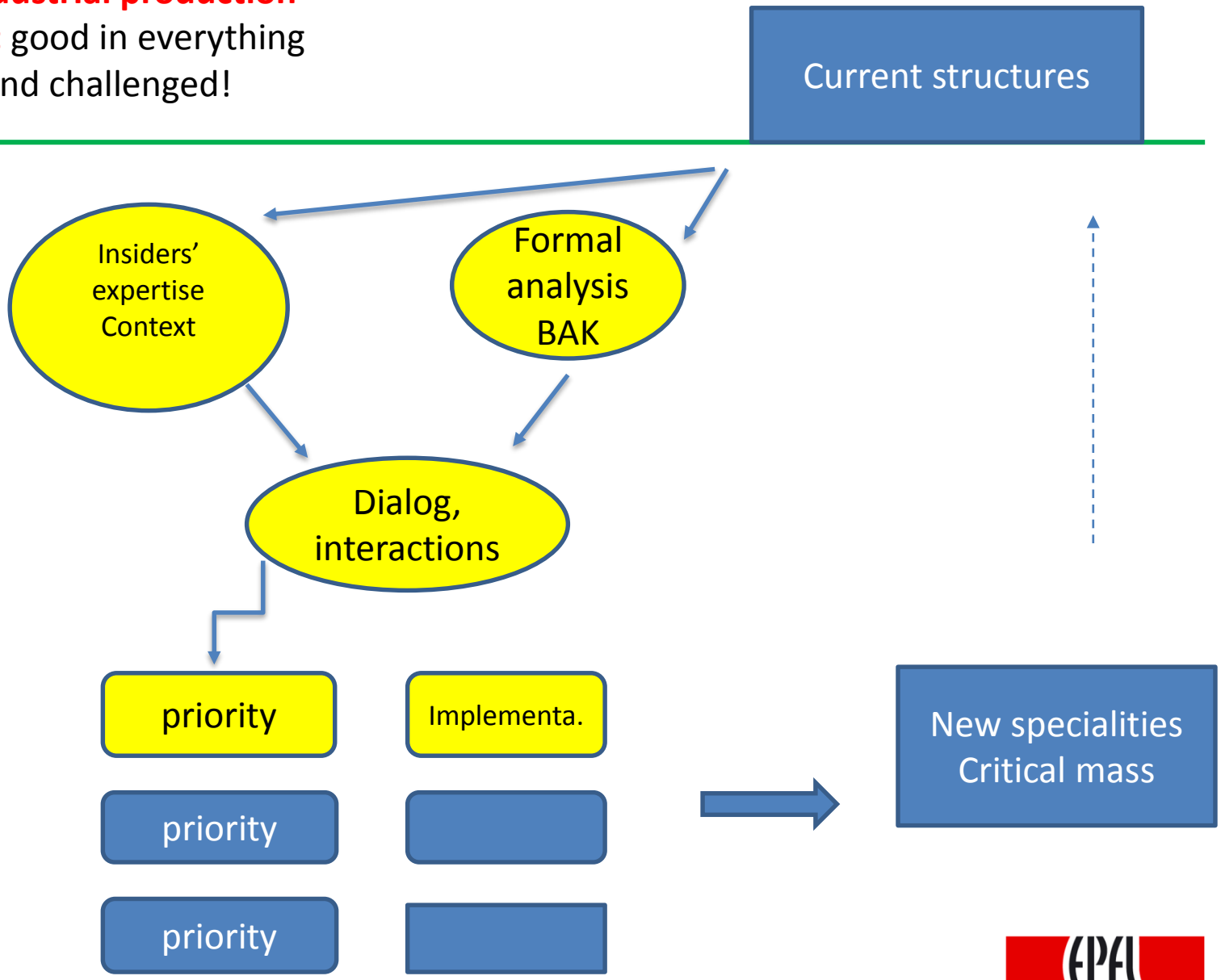
- Not sectors but the most promising routes for structural changes – *transformative activities*
- These routes need to be **discovered**
- Two phases for *the entrepreneurial discovery process*
  - Building a vision and a knowledge base to identify priority's areas
    - Formal analysis (BAK)
    - Insider's expertise & context
    - Dialogs and interactions
  - Putting priority's in practices – exploration and experimentation – building new critical mass
    - Platforms, programs, leaderships

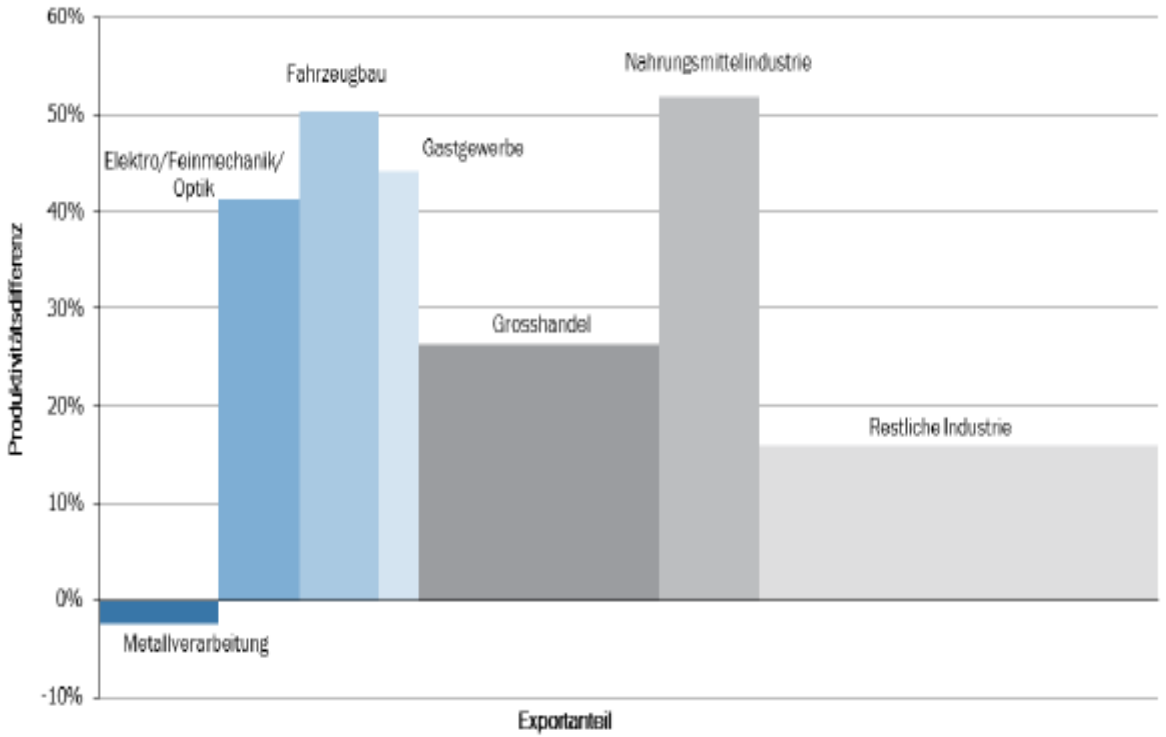

Current structures
Insiders' expertise Context
Formal analysis BAK
Dialog, interactions
priority
priority
priority
Projects, experiments platforms
New specialities Critical mass

Entrepreneurial discovery



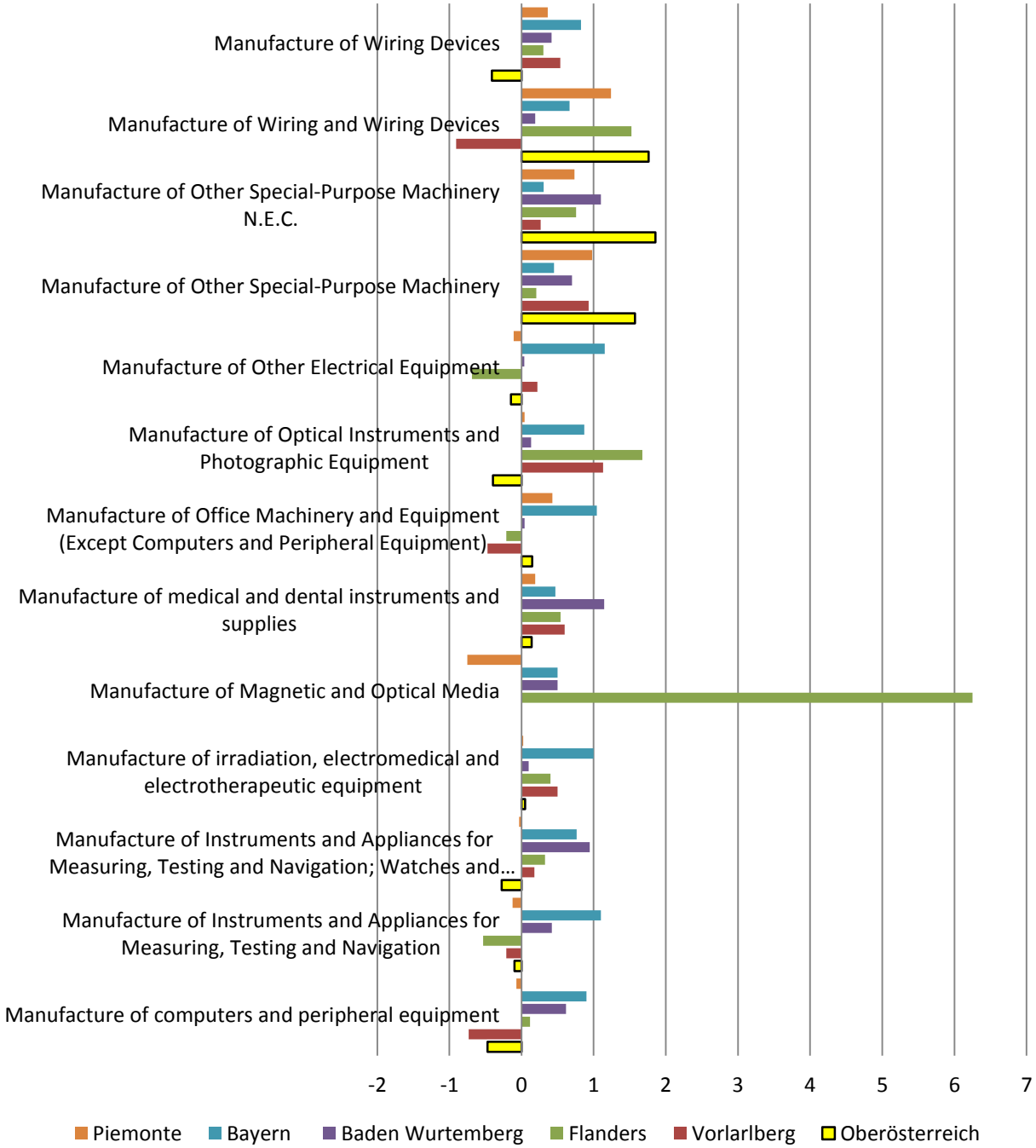
Case 1 : Industrial production processes : good in everything but small and challenged!





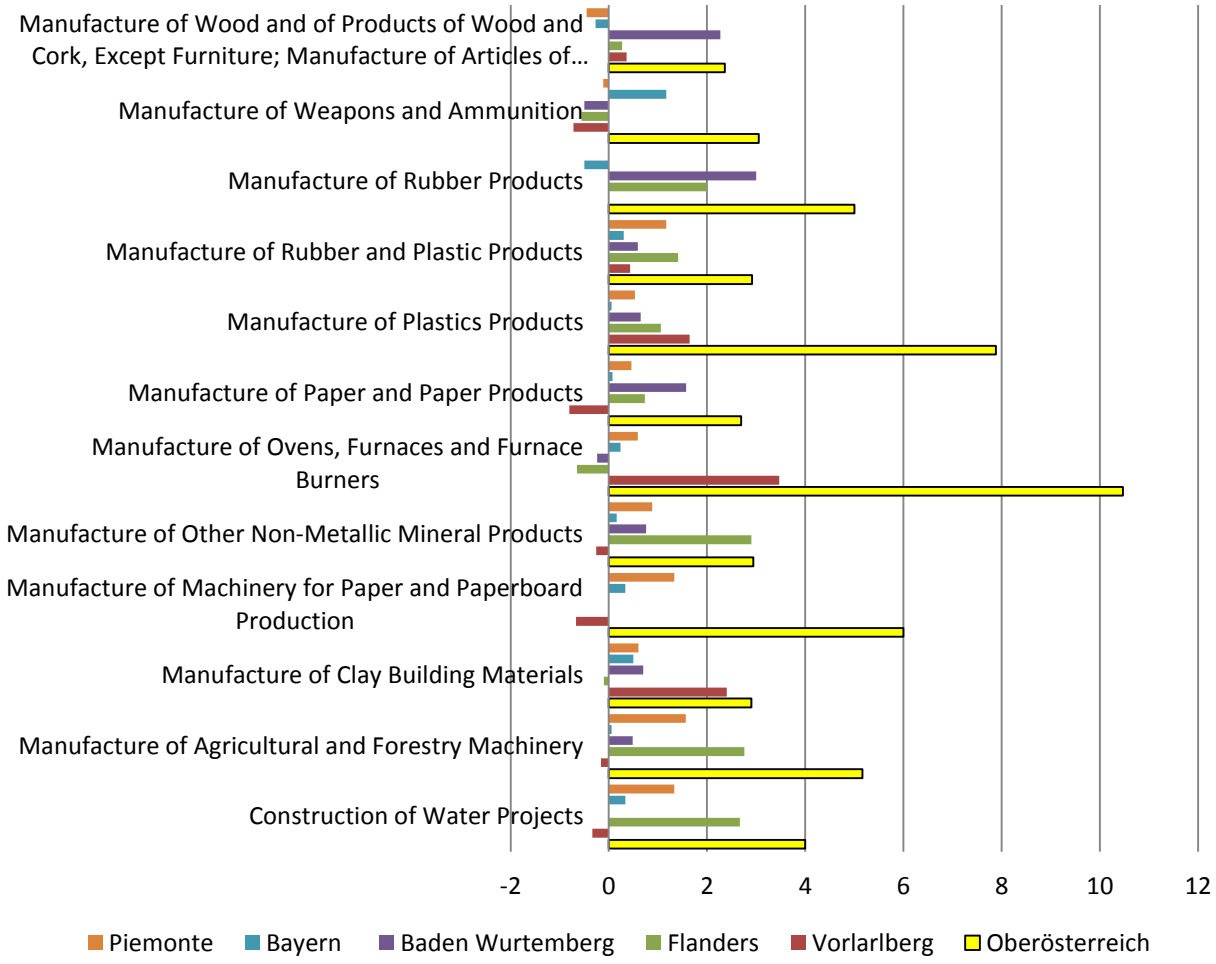
Source BAK - 2014

RTS Electro Mechanics and Optics



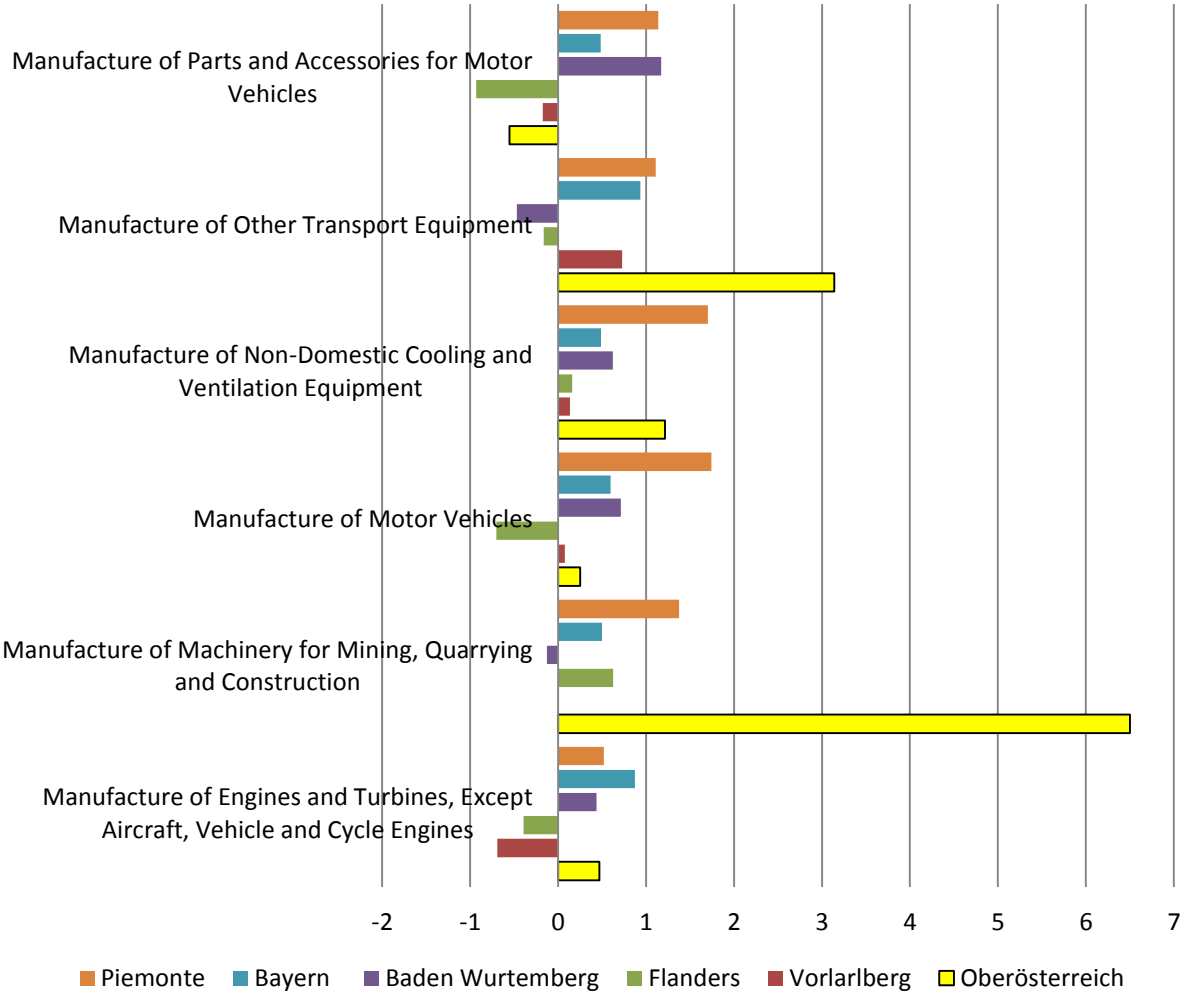
Source EPFL, 2016

RTA Industrial processes (Industrial Manufacture)



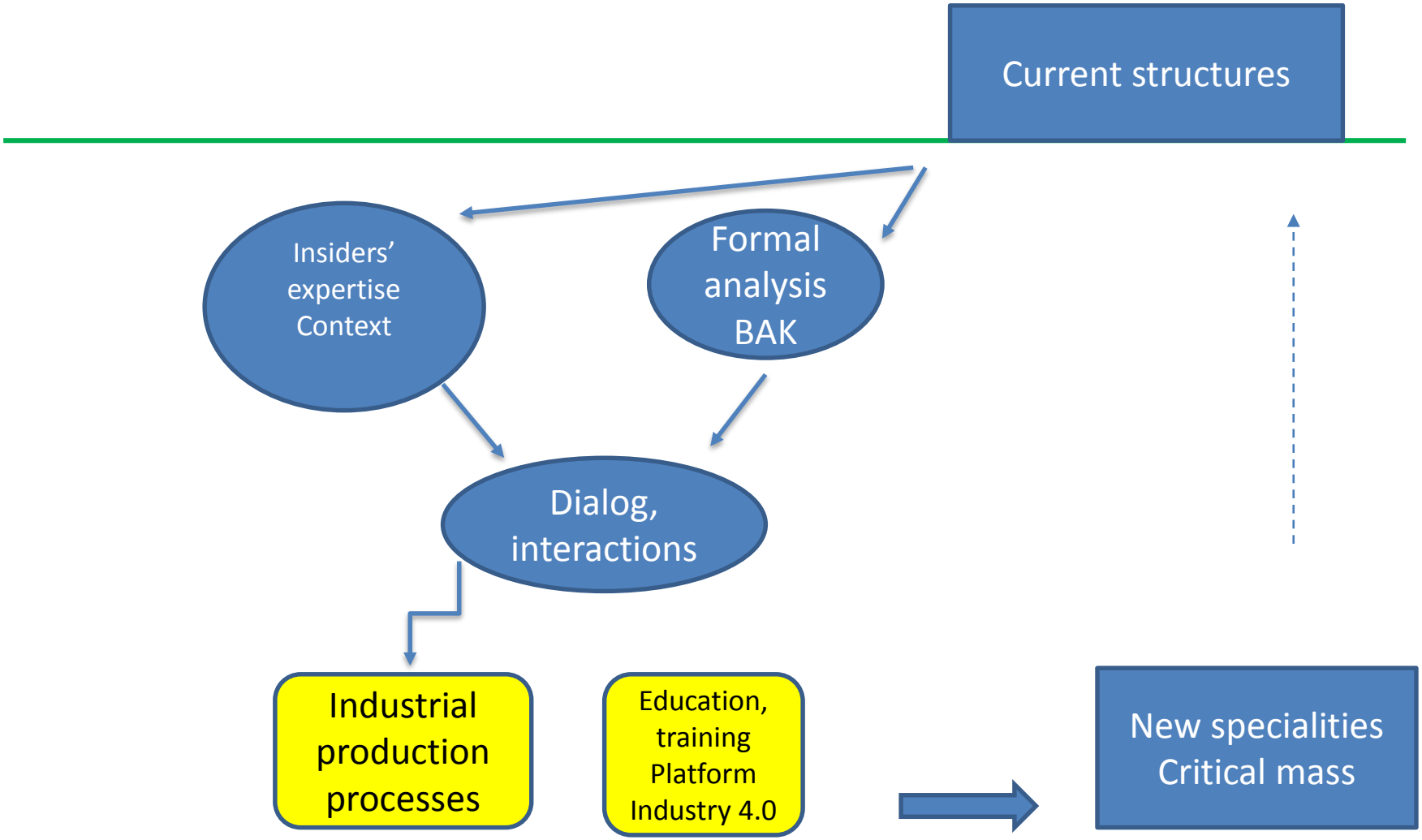
Source EPFL, 2016

RTS Automotive

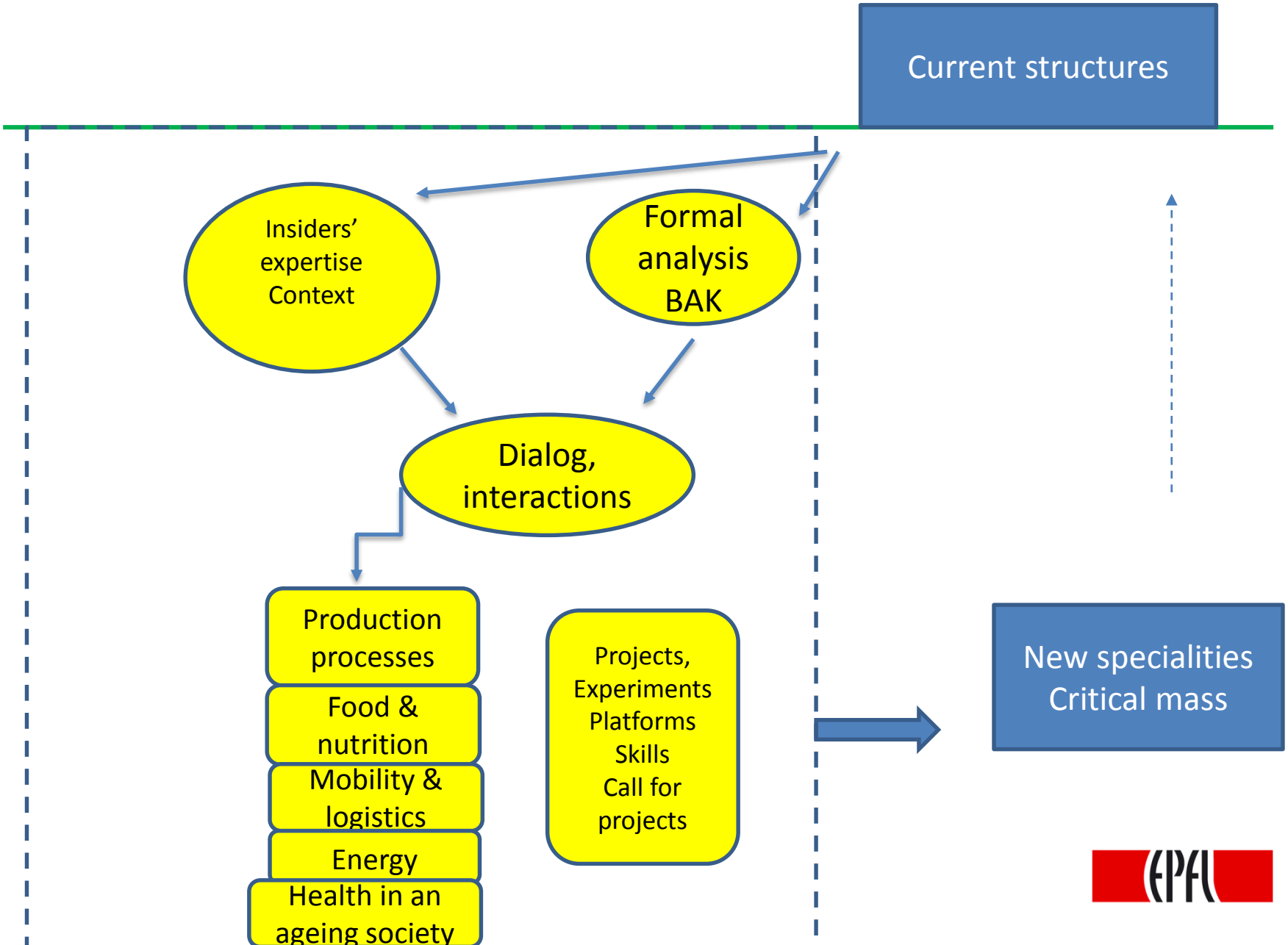


Source EPFL, 2016

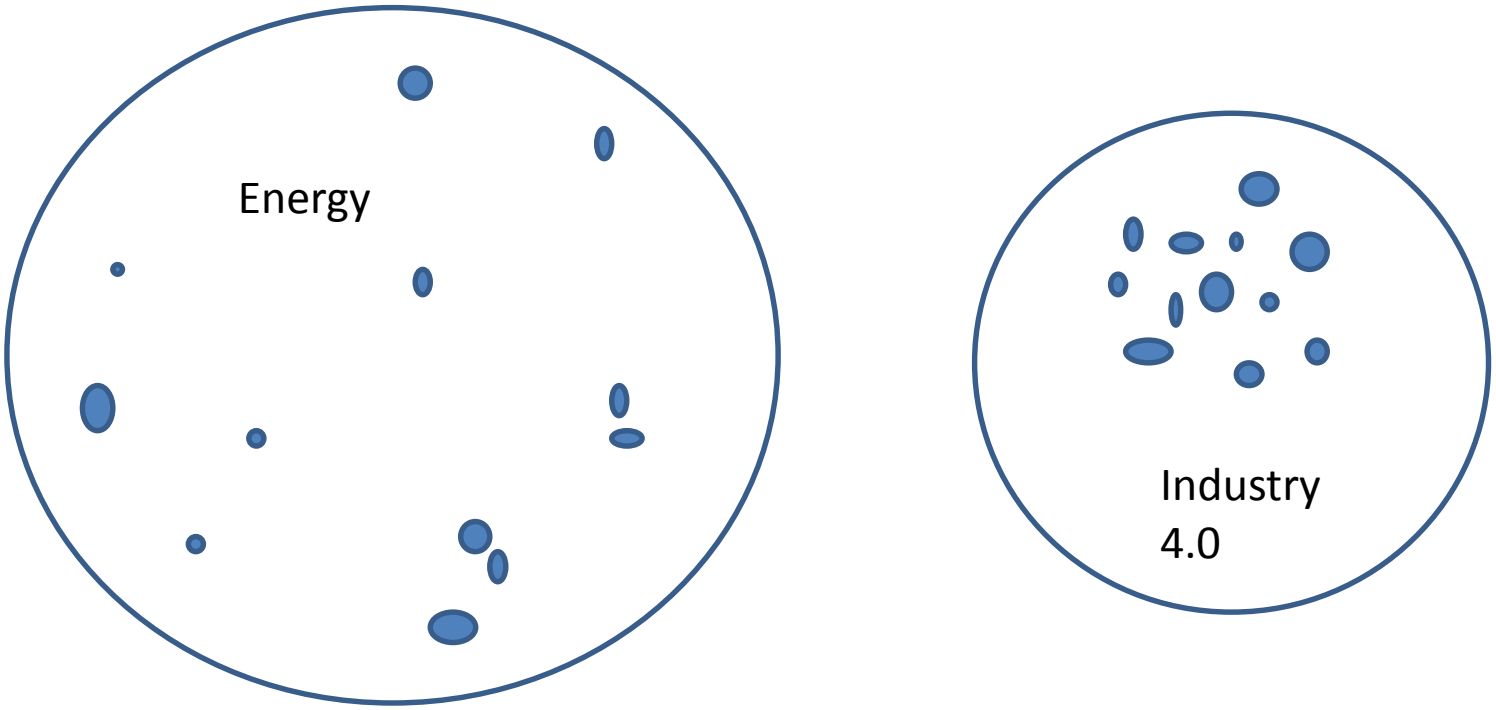
- Formal analysis :
  - These industries are strong in terms of competitiveness and innovation
- Contextual knowledge – inside expertise
  - Emerging trend : Industry 4.0 – *we must make the new machines*
  - Role of clusters and networks
  - Position of the High Education institutions in these fields; quality of the professional education
  - Partnerships and networks across borders


Current structures
Insiders' expertise Context
Formal analysis BAK
Dialog, interactions
Industrial production processes
Education, training Platform Industry 4.0
New specialities Critical mass

RIS3 in Upper Austria



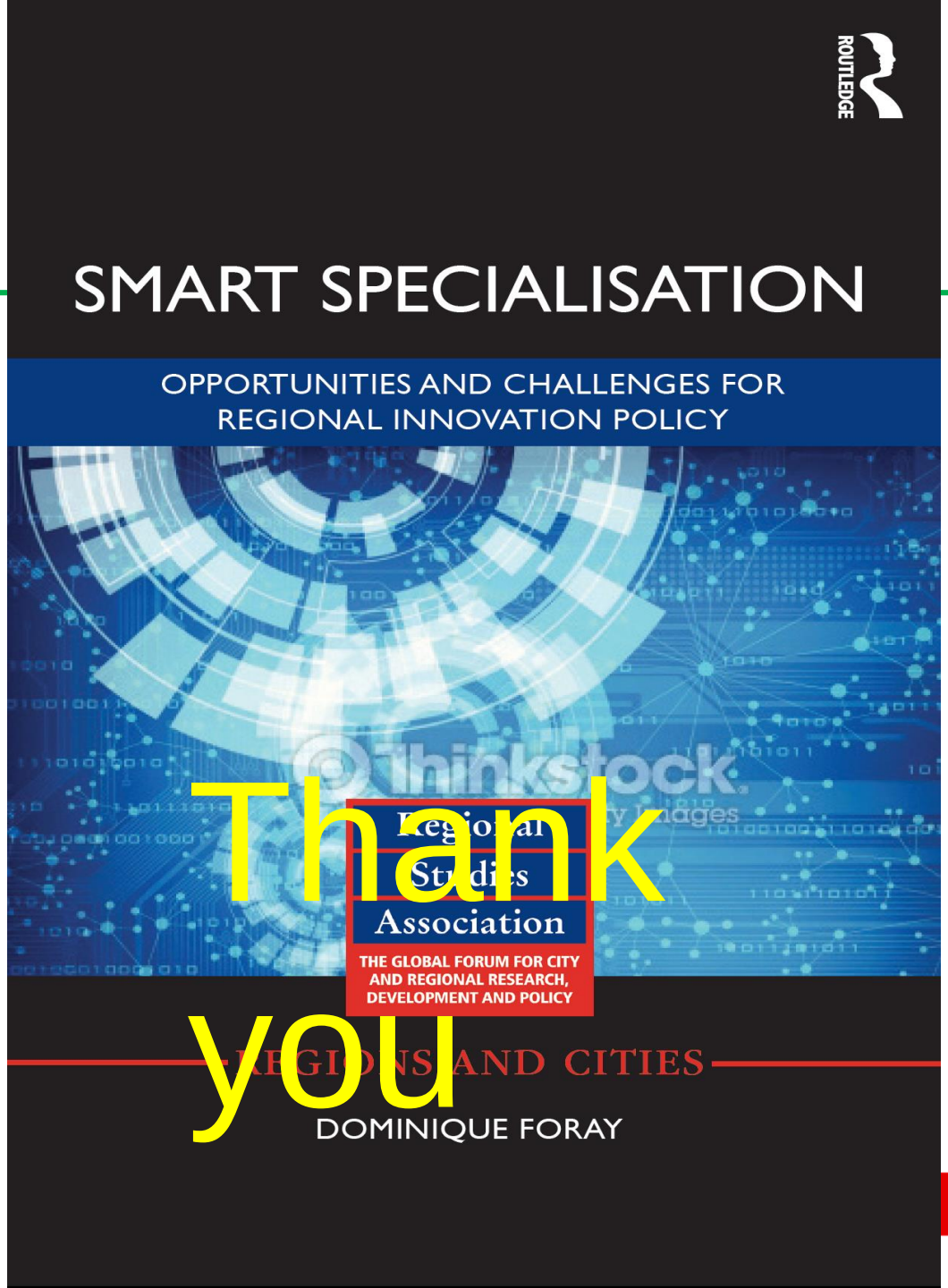
Priority's areas should not be too broad – in a too broad area, projects and programs are not connected and a critical mass will hardly emerge



It is always good to be in the dense part of the forest so that you can easily jump from one tree to another rather than in a sparsely planted part where it is difficult to move between the trees

Summary

- **Smart specialisation 1**: identifying priorities not on sectors but rather on « transformative activities » (i.e. industry 4.0)
- **Smart specialisation 2** : identifying priorities which are not too broad (i.e. energy) so that real critical mass can emerge
- **Smart specialisation 3** : putting priorities in practices through programmes, platforms, leaders
- **Particular attention** to the high edu institutions and the new triangle (high edu, start ups and VC)


ROUTLEDGE
SMART SPECIALISATION
OPPORTUNITIES AND CHALLENGES FOR REGIONAL INNOVATION POLICY
Regional Studies Association
THE GLOBAL FORUM FOR CITY AND REGIONAL RESEARCH, DEVELOPMENT AND POLICY
REGIONS AND CITIES
DOMINIQUE FORAY

Thank you