Agence pour la diffusion de l'information technologique

Regional strategic management of innovation in Europe and France

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Strategic management in Europe and in France

I.   A quick primary on regional development

II. A benchmark study in Europe: the main findings on selected regions

III. The cluster policy in France

IV. The innovation policy in the « world cities »

I.   A quick primary on factors of regional productivity : the « three layers model »
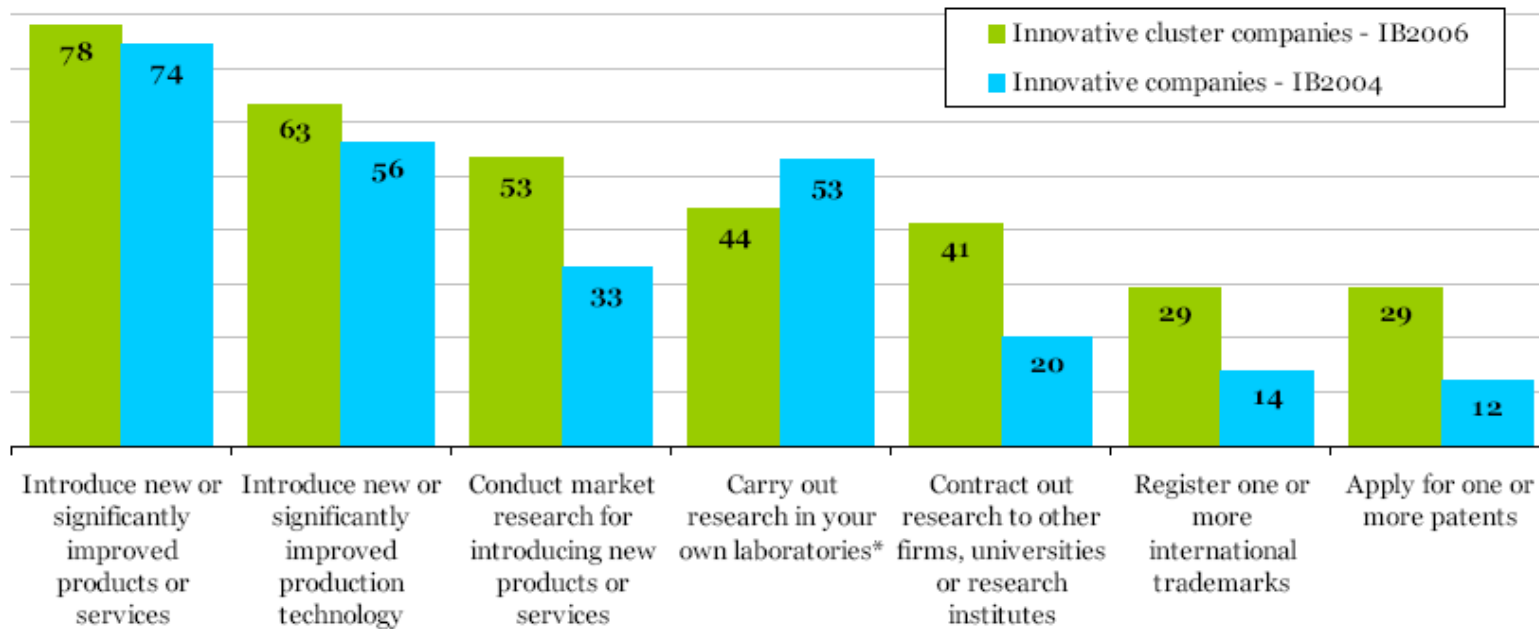
- **Accumulation of resources :** essentially quantitative factors of development- physical and financial resources, basic infrastructures (utilities, industrial parks …), costs and natural resources,…,
- **Endogenous growth factors** : the resources in education and research, the quality of the labor force, development of social capital, infrastructure of knowledge diffusion
- **Systemic efficiency** : importance of knowledge networks, capacity to attract new human and financial resources, good policy making
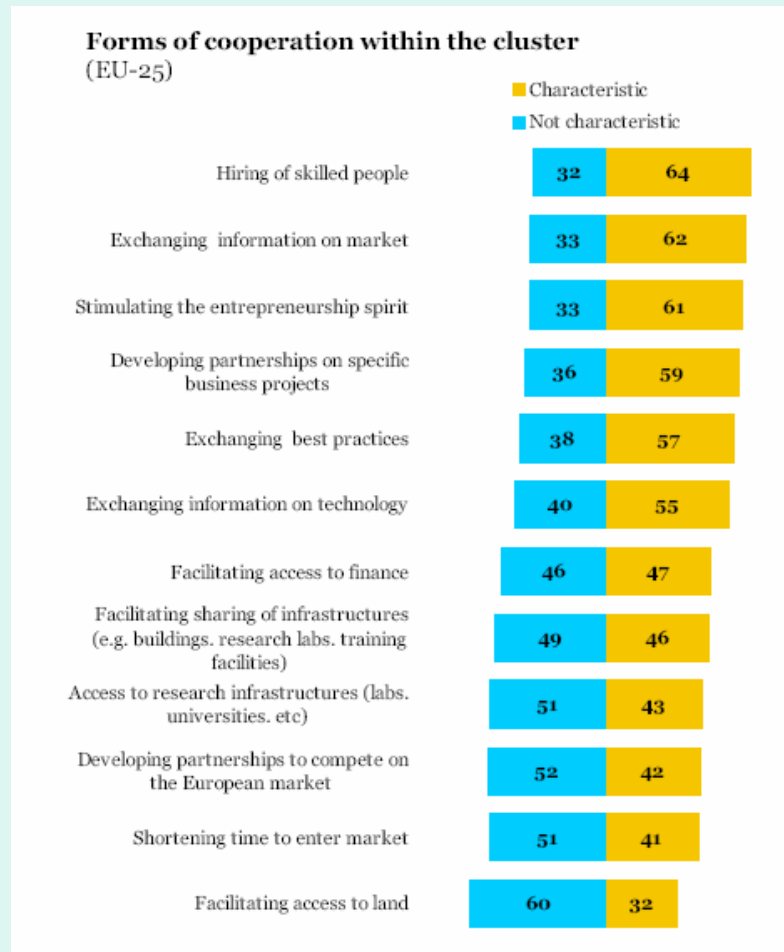
The « three layers model » and regional policies

- **resources :** infrastructures (utilities, industrial parks …), finance, …,
- **endogenous growth factors** : the resources in education and research, development of knowledge networks (knowledge transfer and technology diffusion, innovation centres);
- **systemic efficiency** : policy intelligence with focus on
→ the good **organization** of the innovation systems, addressing the main "failures" of the system,
→ **prioritization** of key sectors and technologies,
→ improving the **effectiveness** of networks;
→ the coordination of long term expectations of firms based on **credible policies**

2006 Innobarometer on cluster's role in facilitating innovation in Europe

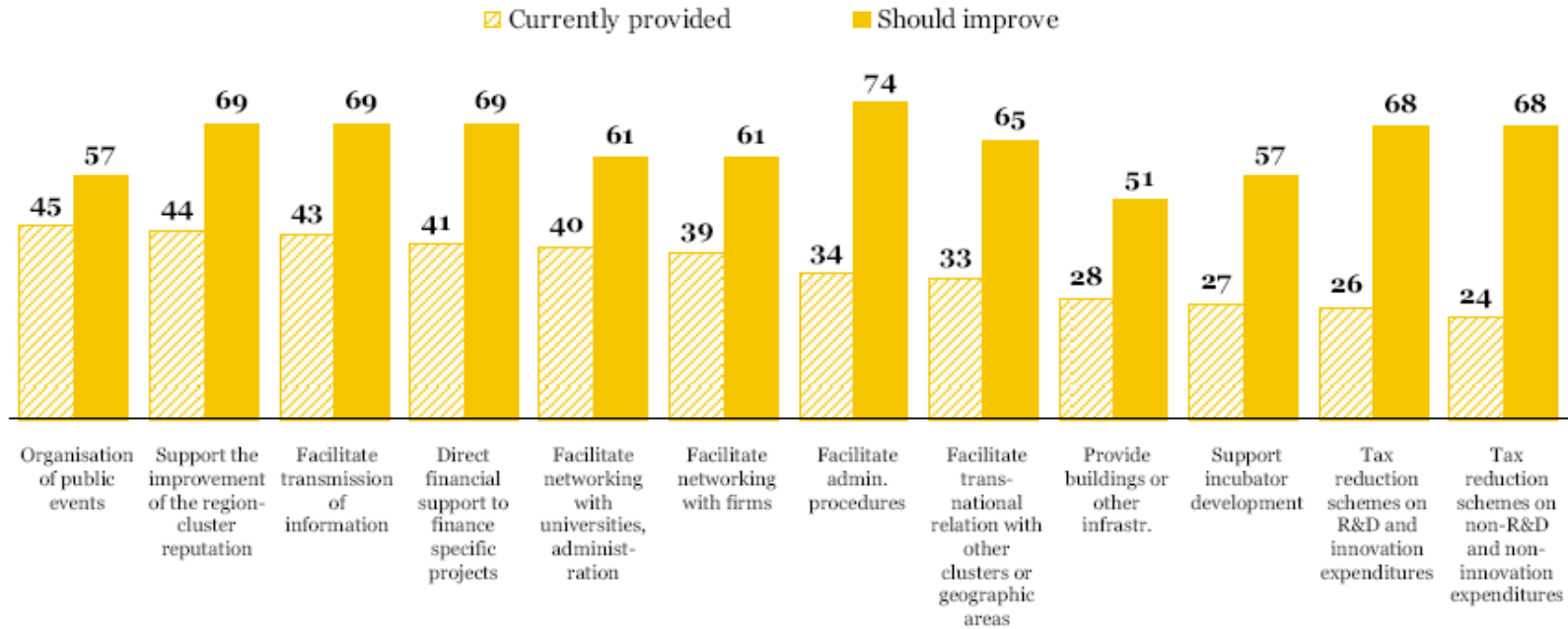**Innovation is higher in clusters than elsewhere** (a comparison with IB 2004)

Legend:
- Innovative cluster companies - IB2006
- Innovative companies - IB2004

Category	Innovative cluster companies - IB2006	Innovative companies - IB2004
Introduce new or significantly improved products or services	78	74
Introduce new or significantly improved production technology	63	56
Conduct market research for introducing new products or services	53	33
Carry out research in your own laboratories*	44	53
Contract out research to other firms, universities or research institutes	41	20
Register one or more international trademarks	29	14
Apply for one or more patents	29	12

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2006 Innobarometer on cluster's role in facilitating innovation in Europe

Forms of cooperation within the cluster
(EU-25)

■ Characteristic
■ Not characteristic

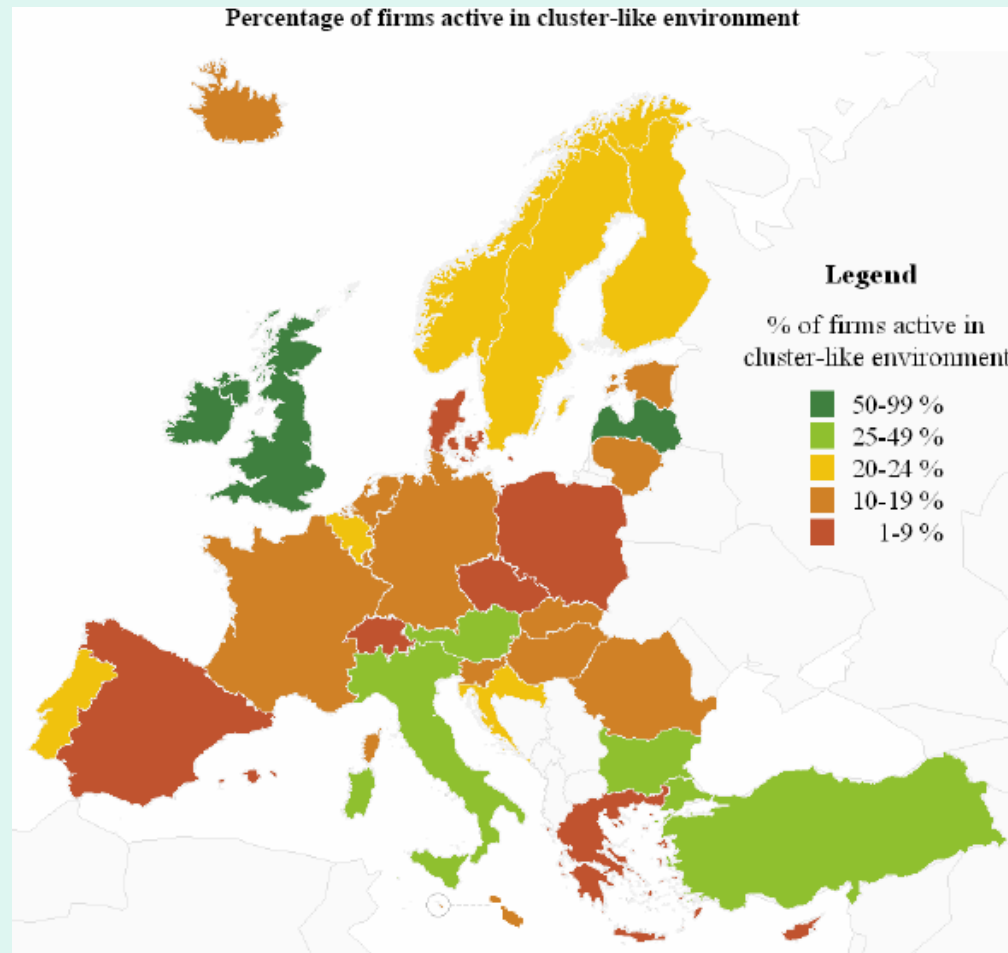|	Not characteristic	Characteristic
Hiring of skilled people	32	64
Exchanging information on market	33	62
Stimulating the entrepreneurship spirit	33	61
Developing partnerships on specific business projects	36	59
Exchanging best practices	38	57
Exchanging information on technology	40	55
Facilitating access to finance	46	47
Facilitating sharing of infrastructures (e.g. buildings. research labs. training facilities)	49	46
Access to research infrastructures (labs. universities. etc)	51	43
Developing partnerships to compete on the European market	52	42
Shortening time to enter market	51	41
Facilitating access to land	60	32

2006 Innobarometer on cluster's role in facilitating innovation in Europe

Support activities of public authorities: assessment of current levels and desire for improvement
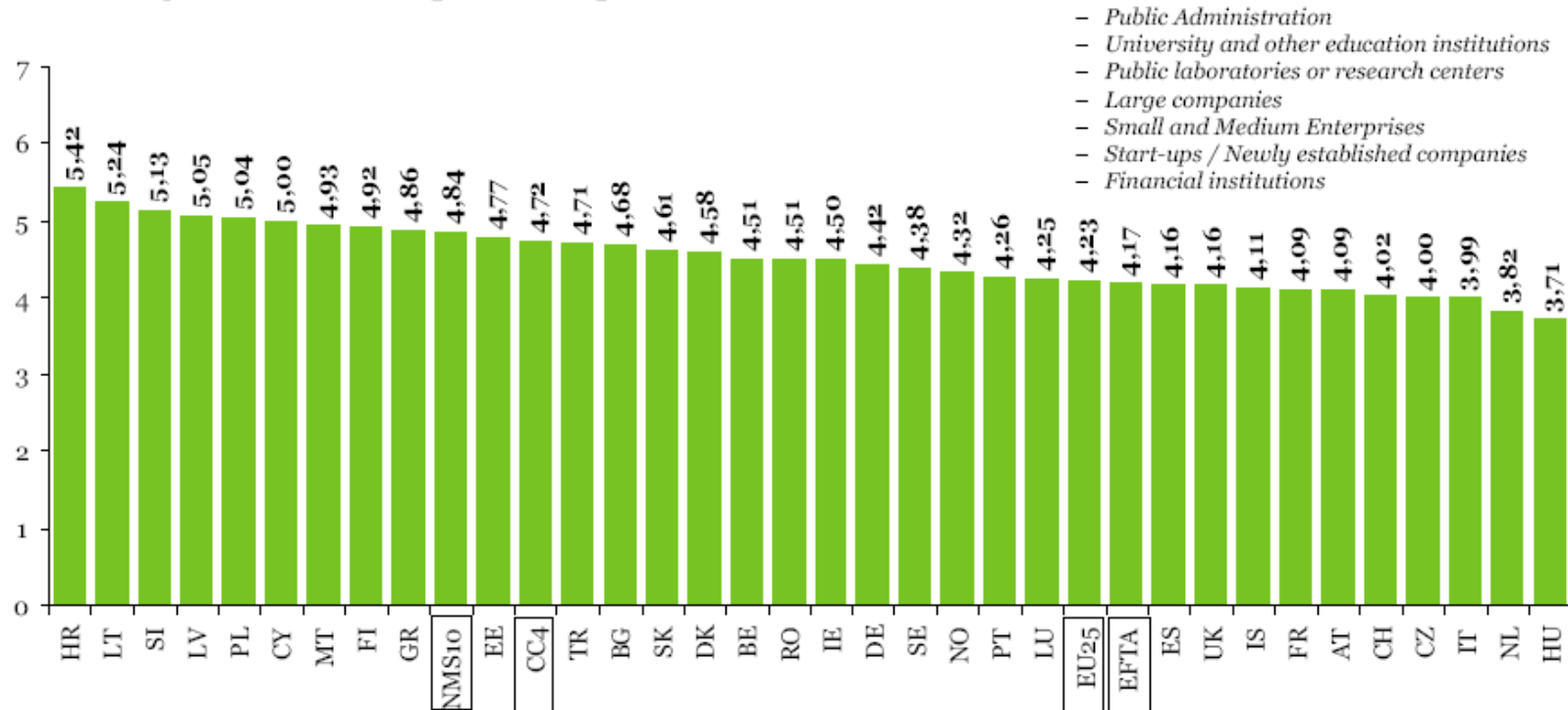
☒ Currently provided   ■ Should improve

Activity	Currently provided	Should improve
Organisation of public events	45	57
Support the improvement of the region-cluster reputation	44	69
Facilitate transmission of information	43	69
Direct financial support to finance specific projects	41	69
Facilitate networking with universities, administration	40	61
Facilitate networking with firms	39	61
Facilitate admin. procedures	34	74
Facilitate trans-national relation with other clusters or geographic areas	33	65
Provide buildings or other infrastr.	28	51
Support incubator development	27	57
Tax reduction schemes on R&D and innovation expenditures	26	68
Tax reduction schemes on non-R&D and non-innovation expenditures	24	68

2006 Innobarometer on cluster's role in facilitating innovation in Europe

Percentage of firms active in cluster-like environment

Legend

% of firms active in cluster-like environment

- 50-99 %
- 25-49 %
- 20-24 %
- 10-19 %
- 1-9 %

2006 Innobarometer on cluster's role in facilitating innovation in Europe

Partnership Diversity Index
(average number of the partnerships mentioned)

- Public Administration
- University and other education institutions
- Public laboratories or research centers
- Large companies
- Small and Medium Enterprises
- Start-ups / Newly established companies
- Financial institutions

2006 Innobarometer on cluster's role in facilitating innovation in Europe

Clusters' role in innovation
(average number of the indicators of innovative activites mentioned)

– *Conduct market research for introducing new products or services*
– *Introduce new or significantly improved products or services*
– *Introduce new or significantly improved production technology*
– *Apply for one or more patents*
– *Register one or more international trademarks*
– *Carry out research in your own laboratories*
– *Contract out research to other firms, universities or research institutes*

Country	Value
TR	4,13
GR	3,56
CC4	3,55
IE	3,25
RO	3,14
HR	3,13
MT	3,12
AT	3,11
IT	3,10
PL	3,07
IS	3,00
SI	2,97
BE	2,96
SK	2,96
BG	2,96
DK	2,85
ES	2,80
LU	2,77
CZ	2,76
FI	2,66
EU25	2,62
DE	2,62
CH	2,56
PT	2,54
NMS10	2,53
CY	2,50
EFTA	2,46
LT	2,42
UK	2,41
NO	2,33
FR	2,29
NL	2,21
LV	2,20
SE	2,12
EE	2,08
HU	1,84

The industrial policies in Europe

An slight evolution in industrial policies, besides the general open market policy : more regional specialization for European competitiveness, according to new economic geography conclusions

- the lack of regional specialization might be an important factor explaining the European competitiveness gap: enhancing geographical specialization and efficient allocation of economic activity across the EU.

- support regional cluster development initiatives, such as for the strengthening of linkages between companies, regional government agencies and research and educational institutions.

- improved **effectiveness** of EU competitiveness policies such as regional, science and innovation, competition, enterprise and SME and sectoral policies.

➢ **some** EU member states have launched different national initiatives to raise their and different regions' research profile such as the French government poles of competitiveness policy, or Sweden or different Länder in Austria or Germany

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The regional policies: some main policies debates

- How design systemic innovation analysis and policies? Holistic or focused on some main "systemic failures"?

- What are the general limits of public interventions in regional development (between a certain kind of laisser-faire which is the doctrine of both liberal and evolutionist approaches, and a "colbertist" view – ignoring the "government failures")? How to adapt the "heaviness of the hand of the state" to the real structure of the innovation system?

- What are the most efficient policy instruments for each of the three dimensions : resources, endogenous growth factors, tools of "systemic efficiency"?

- How to balance public resources between those three dimensions?

- Are they basic differences between "mega regions" and the others for the design of public policies ? (my personal answer is yes –see part IV)

II. Strategic management of the regions in Europe : a survey on the good practices

- **25 regions, selected for monograph**
- ➢ representative of different levels of economic development;
- ➢ with the most structured public management
- **the purpose:**
- ➢ situate the regions in the European context
- ➢ define the most interesting practices
- ➢ help improve the rationale for designing strategies

Strategic management in Europe: the selected regions

- some among the most advanced high tech clusters : Cambridge, Eindhoven, Gothenburg, München, Stuttgart, Helsinki,Copenhagen-Malmoe;

- strong high-tech manufacturing clusters: Amsterdam, Berlin, Grenoble, Oulu, Scotland, Toulouse,

- « high performance » industrialised regions, Catalonia, Flanders, Ireland, Lombardy, Madrid, Oberösterreich, Pays Basque, Piedmont,

- some « convergence » regions: Lisbon, Krakow, Budapest, Slovenia

RD in European regions

Total R&D expenditure
as a share of GDP (%) 2003*

- >4 %
- 3 - 4 %
- 2 - 3 %
- 1 - 2 %
- <1 %
- Data not available

Size of the regional economy
in GDP in million PPS 2003**
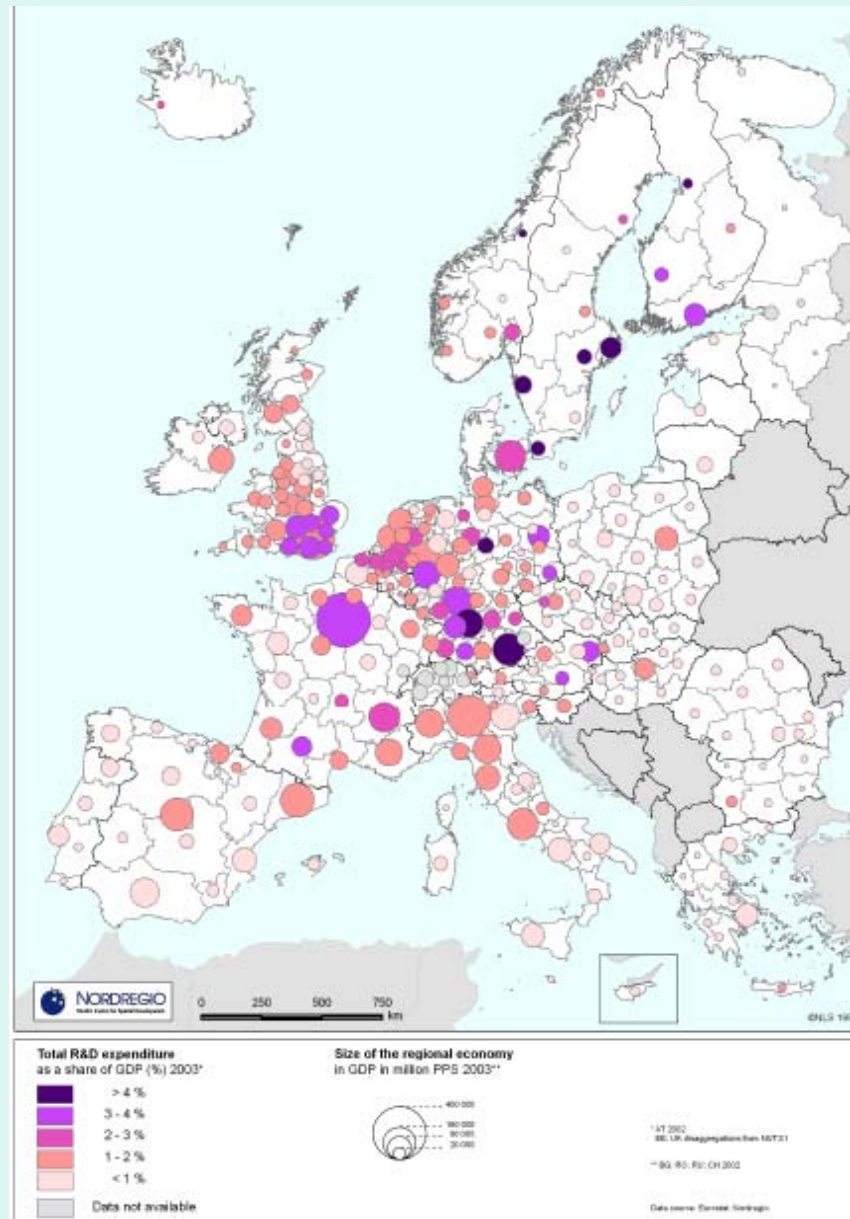
Employment in high and medium high-tech manufacturing in regions

16
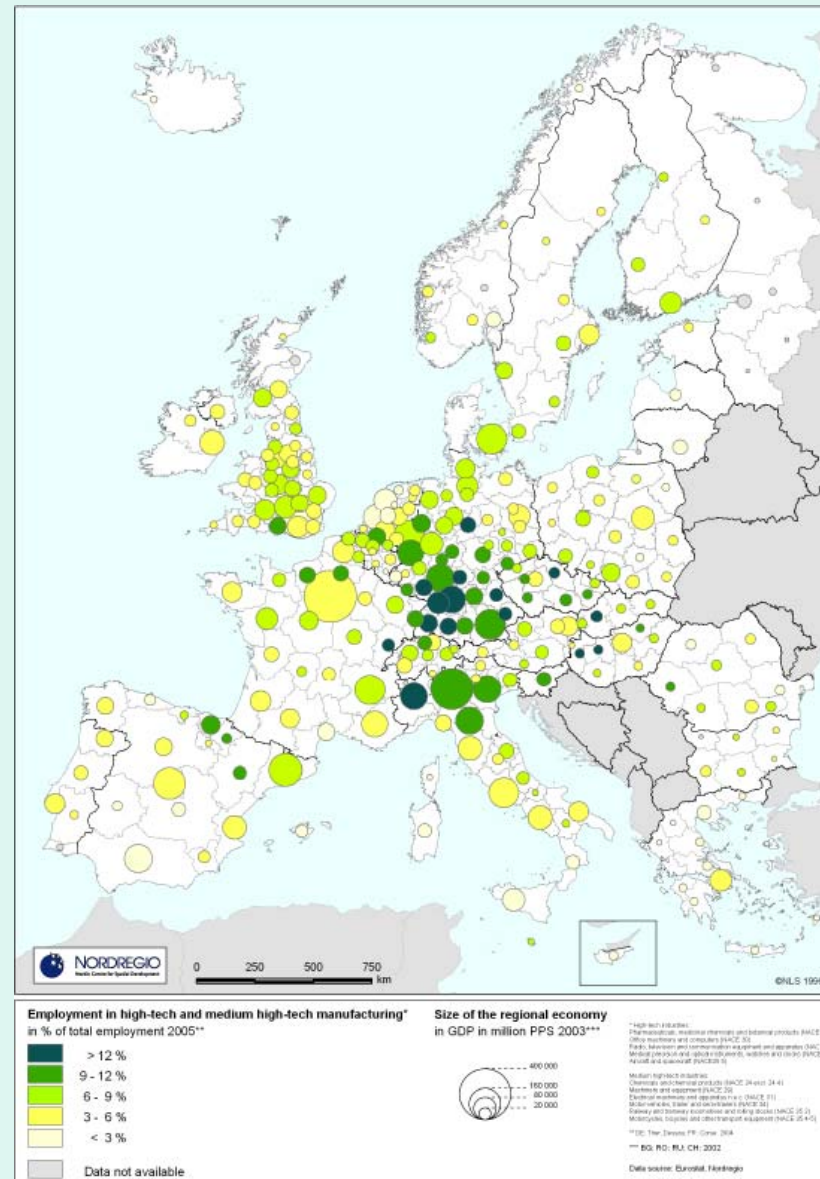
Employment in knowledge intensive market services in regions

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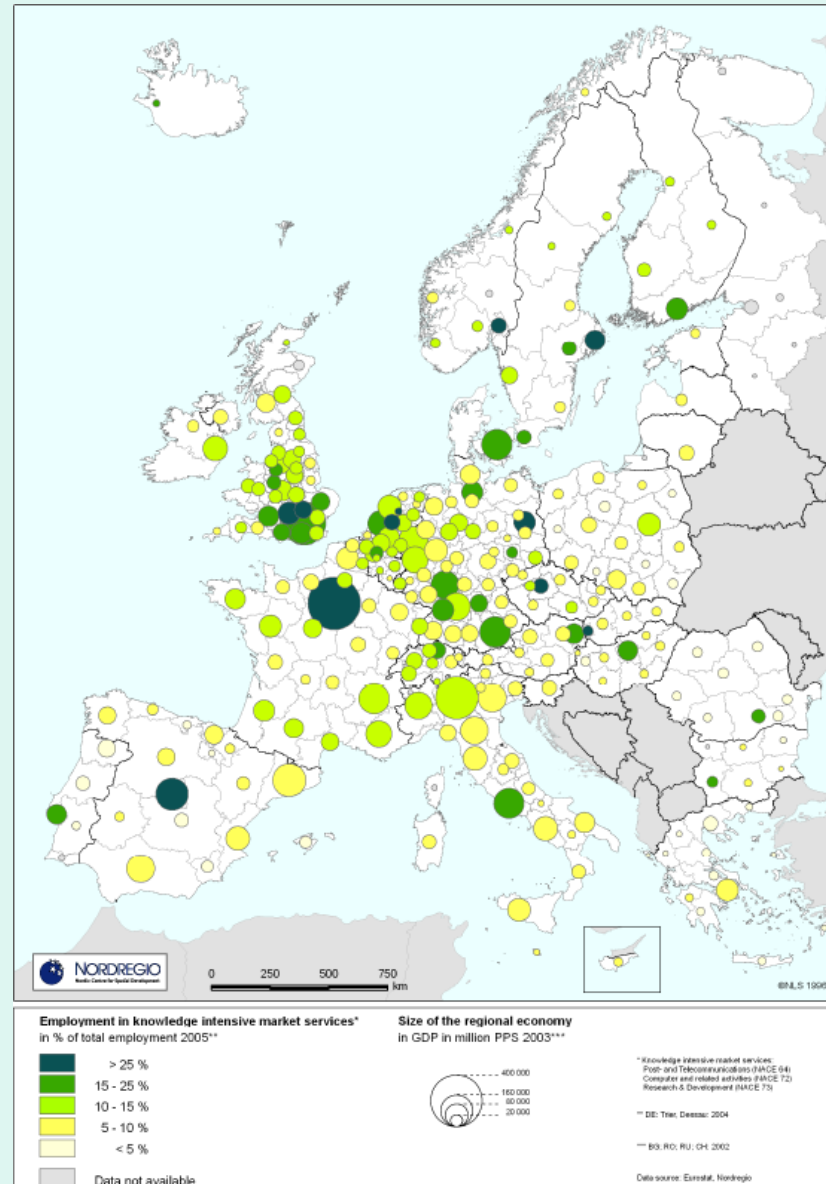
The regions with an advanced « strategic management »: the main results

- There is a holistic approach of the policy making process
- The industrial policy is « matrix-organized » in clusters and competencies centers
- The industrial policy is focused on improving networks between universities, research centers, and companies
- Close interactions between strategic analysis and policies, and between business and policy makers
- A governance well-fitted to the level of development and of the social capital of the regions
- The importance of quality of business services and of good information is considered as a huge factor of growth and productivity in the knowledge economy

The « matrix-organized » management of the « triple-helix » of the regions

- The top regions have matrix-organized strategies:
- ➢ policies to enhance the « triple-helix » in specific sectors
- ➢ policies focused on technological and research centers, concerning the whole industry
- The focus on sectors depends on the size and level of development of the region: the more developed are more diversified and focus more on the « knowledge-basis » and centers of technological and research competencies
- The tools: developing connections between research centers, universities and companies, collective systems of competitive intelligence…
- The additional cost of the quality of the policies : small budgets but very high « added value » policies

The survey : the whole report is available in French on www.adit.fr

- Analytical considerations
- Definition of a new doctrine on regional strategic policies in the knowledge economy
- Annexes on benchmark countries or regions
- Statistical analysis

$\Rightarrow$ Present step : a new benchmark study on the world biggest metropolitan areas (NY, Tokyo, London, Paris , San Francisco …)

III.   The innovation policy in France

- The governance of regional innovation systems in France

- The competitive clusters policy and the first assessment

- The next step of the improvement of regional innovation systems in France

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Governance of regional innovation systems in France

Level of regional/local government	Legislative &/or administrative authorities	Authority related to innovation policy, if any
Regional	22 Regions	Education and training, and territorial planning covering economic development and research
National decentralised / regional	OSEO-ANVAR (National Innovation Agency)	Supports enterprise creation and innovation within industry (in particular SMEs) ; promotes the commercial exploitation of public research and contributes to industrial growth through the promotion of innovation
National	DRRT	Coordination/implementation at the regional level of national measures from the Ministry in charge of Research
National	DRIRE	Coordination/implementation at the regional level of national measures from the Ministry in charge of Industry
National	Prefectures : SGAR	Coordination of regional aid from the Structural Funds together with Regional Councils

Governance of regional innovation systems in France

- The 22 regions in metropolitan France have the mission to contribute to regional economic and social development.
- Regions autonomously decide the budget they spend on R&D and innovation;
- But , in budgetary terms, the role of regions is still small.
- In 2000, for example, the share of public funding to R&D financed by regions was 1.4 percent against 88.2 percent for R&D financed by the state and 10.4 percent for R&D financed by Community funding.

Governance of regional innovation systems in France: the national agency ANVAR

- OSEO/ANVAR, the National Agency for Innovation supervised jointly by the ministries in charge of Research and Industry (budget around EUR 300 million annually corresponding to 4000 individual cases).
- ANVAR has a central headquarter in Paris together with the Agency's regional delegations
- The mission of the ANVAR is :
- ➢ to support enterprise creation and innovation within industry (SME's) mainly by an interest-free loan, refundable in case of success
- ➢ promoting the commercial exploitation of public research and contributing to industrial growth through the promotion of innovation.

Governance of regional innovation systems in France

- The State's regional policy is coordinated by the General Secretariat for regional affairs (SGAR) within the prefectures
- Regional offices of the ministries in charge of Research and of Industry are responsible for the implementation of measures under the authority of their respective Ministry:
- ➢ The Regional Research and Technology Delegations (DRRT)
- ➢ The Regional Division for Industry, Research and Environment (DRIRE).

Governance of regional innovation systems in France

Numerous actors on the regional level, such as

- technical centres,
- regional centres of innovation and technology transfer (CRITT) and the Centre of technological
- resources (CRT) which offer scientific and technological services,
- centres of public national research laboratories and private research centres,
- networks of institutional actors (ANVAR/OSEO, DRIRE, DRRT, Chambers of commerce, …) aiming to technological development
- information for the benefit of SME's, (about markets and technologies) provided by various local institutions
- Regional science parks ("technopoles"), close to centres of academic excellence

The improvement of regional innovation systems in France: the competitiveness clusters policy

- The **aim** : strengthen the competitiveness of the regions, the co-operation among businesses and between businesses and public research/education institutions by supporting:

➢ development of existing and performant "competitive clusters" in advanced regions

➢ creation of regional "competitive clusters" especially in less developed regions, foster RTD investment in SME's around the best existing technical and research institutes and avoid excessive spatial dispersion

The competitiveness clusters policy

- Different types of competitive clusters
- ➤ Competitiveness clusters around a large company
- ➤ University pole of excellence (spin-offs)
- ➤ Groups of SME's around common themes of interest; research projects, marketing, …
- ➤ SME's grouped around providing of support services (markets and technological information, business services…)

The competitiveness clusters policy

- The measures to promote the emergence of new competitive clusters and to strengthen existing clusters :
➢ A three-year budget of € 750 million (more at this time) ;
➢ Businesses participating in collaborative R&D projects could be eligible for exemption from corporate income tax and for lower social security charges ;
➢ financial assistance of the Caisse des Dépôts et Consignations (CDC), ANVAR and the guarantee funds BDPME/SOFARIS.
- The **call for projects** to select a first series of proposals based upon public-private partnerships: they have to involve businesses, research centres and higher education hubs, financial institutions, public authorities, France's central government and Europe.
- The results : 66 projects selected, for 23 regions

The competitiveness clusters policy
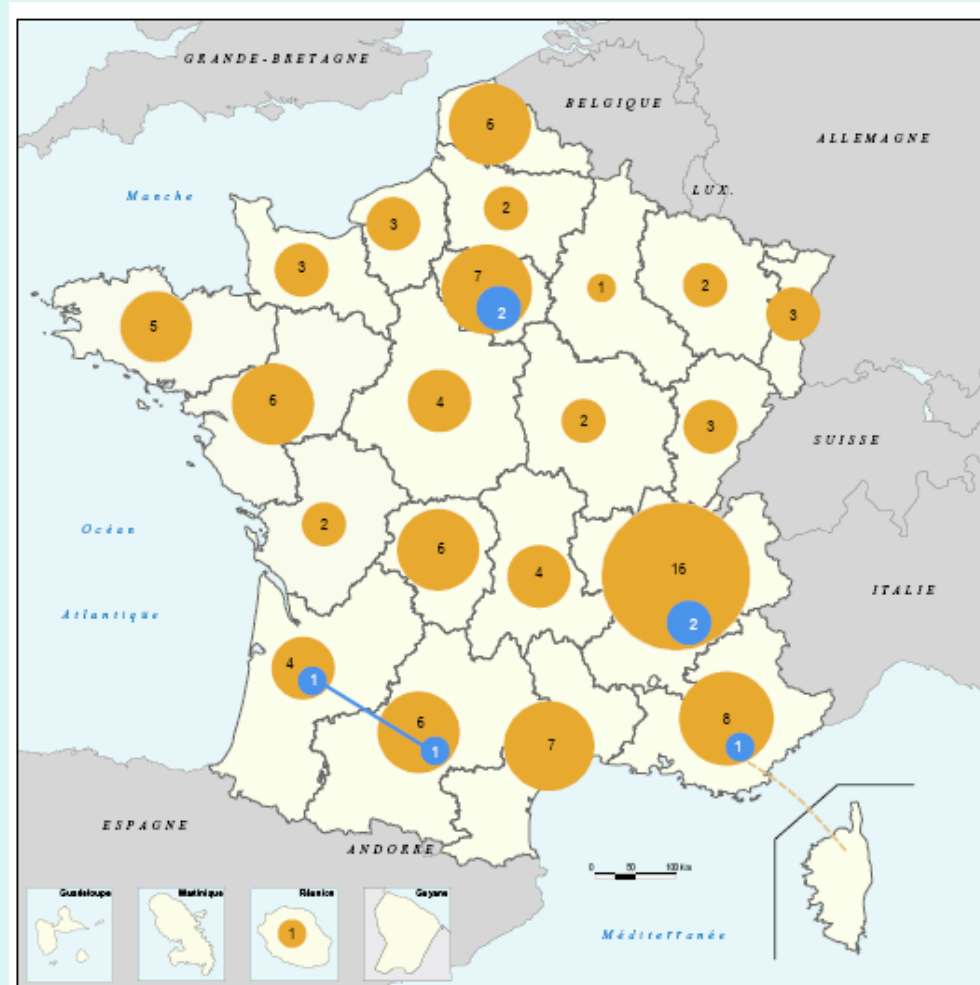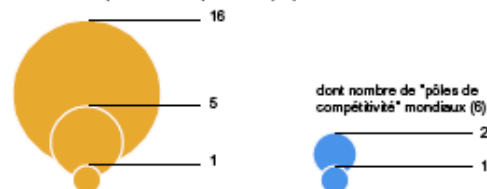
The competitiveness clusters policy

Projets mondiaux

INTITULES	REGIONS CONCERNEES	DEPOSANTS	ACTIVITES
Solutions Communicantes Sécurisées	Provence-Alpes-Côte-d'Azur	STMicroelectronics	Matérielset logiciels pour les télécommunications
LYONBIOPOLE	Rhône-Alpes	GRAND LYON	Virologie
SYSTEM@TIC Paris Région	Ile-de-France	THALES	Logiciels et systèmes complexes
MINALOGIC	Rhône-Alpes	AEPI	Nanotechnologies
Aéronautique, espace, systèmes	Aquitaine, Midi-Pyrénées	Aérospace Vallée	Aéronautique, systèmes embarqués
MédiTech Santé	Ile-de-France	Agence Régionale de Développement	Santé, notamment infectiologie et cancer

Projets à vocation mondiale

Image, Multimédia et vie	Ile-de-France	A.R.D Paris Ile-de-France	Multimedia
Industries et agro-ressources	Champagne-Ardenne, Picardie	EUROPOL'AGRO	Utilisation non agricole de produits agricoles
SEA-NERGIE	Bretagne	THALES	Mer (océanographie, construction navale, pêche,...)
Innovation thérapeutique	Alsace	Alsace BioValley	Molécules, chirurgie non invasive
Images & Réseaux	Bretagne	Conseil régional de Bretagne	Electronique et télécommunications
Mer, Sécurité et Sûreté	Provence-Alpes-Côte-d'Azur	Comité de Pilotage	Mer (océanographie, construction navale,...)
Pôle i-Trans	Nord-Pas-de-Calais, Picardie	Transports Terrestres Promotion	Construction ferroviaire
Chimie-environnement Lyon	Rhône-Alpes	GRAND LYON pour compte d'AXELERA	Chimie
Végétal spécialisé	Pays de la loire	CIVS	Semences, horticulture, arboriculture,...

The first assessment of competitiveness clusters policy

- A real improvement already observed in regional **governance of innovation and economic development**

- A better sensitiveness of the reality of international competition and the need of **visibility at international level**.

- A strategic approach of regional **economic development**

- But the projects **have now to create effective R&D synergies and so contribute new wealth with high value added,** as far as the final goal is definitely to improve the competitiveness of French products and services on the international markets and therefore also to build a workforce of highly skilled labour. There is a necessity of an efficient management of competitiveness clusters

The next improvements of competitiveness clusters policy

- In the framework of the initiative, a public spending of 1.5 billion euro, along with tax breaks, between 2006 and 2008.

- These clusters and poles bring together businesses, higher-education institutes and research centers - both public and private - to work together. 40% of the companies profiting from the initiative are small- and medium-sized businesses.

- Further improvements of the policy:

≈ boost international development of the poles (buzz and pipelines cluster theory of P. Maskell)

≈ mobilize private equity financing

≈ improve the quality of business services provided for SME's in the poles (KIBS – knowledge intensive business services- theory of Finnish commentators on development of systems of innovation)

Regional innovation policies in France : an assessment

- A need for simplification : there are too many institutional actors present, with a lack of ability to define clear strategic choices, a lack of clarity of the various responsibilities,

- Too many dispersed policy instruments with a risk of dilution of the impacts and significant running costs.

- A programming of high quality in France, but a problem of lack of evaluation with adequate indicators

- The need of an improvement of the coordination in the regions

- An too little level of structural funds devoted to innovation in the regions (6% for concerned regions in France, compared with the 11% European level)

The next step of the improvement of regional innovation systems in France: the new management of 2007-2013 structural funds

- Policy strongly linked with the cluster policy
- A **better knowledge of the actual needs** of the regional innovation systems: effective assessment of the present resources and the needs of improvement of investment in RTD
- A better regional governance of innovation, with efficient and adequate decision processes: **avoid the "dividing of the cake" and improve the management quality of the implementation of the policies**
- **Foster the** « **delivery capacity of services** »:
  ➤ information services about technologies and markets
  ➤ advanced business services

IV. The specific challenges of regional innovation policies in « world cities »

A policy debate produced by the 5 economic puzzles of the « world cities »:

1. What is the paradigm of growth and competitiveness?
2. How coping with the complex system of institutions ?
3. How to address the macroeconomic questions?
4. Are the main public infrastructures a driver of development or a constraint for a sustainable growth ?
5. What kind of innovation policies for « world cities »?

What is the paradigm of growth and competitiveness?

- The « three layer model » -accumulation of physical and financial resources, endogenous growth resources, systemic efficiency of the innovation system- does not operate in the same way for the "world cities" (existence of strong "general (or intersectoral) Jacobs externalities

- The "world cities" are "clusters of clusters"; their competitiveness resides in the capacity of developing innovative cross products and technologies fitted to an important and innovative market, a very unique marriage of "art, technologies, finance and influence"

- How to increase the probability of continuing to race ahead?

How coping with the complex system of institutions in "world cities"?

- The « world cities » are the locus of a complex system of institutions
- The coordination between institutions is generally a "coopetitive" game, with no clear "strategic policy maker"
- A question: is this weakness of policy making process a factor of inefficiency of the regional programs plans?
- Is a "multiagencies" scheme a second best governance system, or is it necessary to try to increase the hierarchical character of coordination?

How to address the macroeconomic questions?

- "World cities" have higher costs and wages according to a supposed higher productivity of high tech industries and services

- The reality of the propensity of outsourcing of high tech industries and services toward lower cost areas, when those activities can be easily replicated; and, in the same time, the emergence of new activities of higher value added

- Will this comparative advantage continue in the future (cf debate between Samuelson and Baghwati)? Does this trend enhance the need of a greater concentration of innovation in those "world cities" to increase the probability of creation of new activities at a rate of growth sufficient for the balance between jobs and employment?

Are the main public infrastructures a driver of development or a constraint for a sustainable growth ?

- The budgetary needs for social policies and for public infrastructure are huge in "world cities", much more important than what public funding can afford; there is a growing gap between those needs and the actual funding

- What can be the long term impact of this gap, as well for social climate as for way of life in those cities? Will they lose "talents and tolerance" two of the three pillars of competitiveness defined by R. Florida?

- What economic tools can be used to improve our knowledge of those questions?

What kind of innovation policies for « world cities » ?

- Four possible questions for the debate. What balance for world cities between :

➤ competition and coordination between different policy makers in the design of their policies?

➤ sectoral priorities and general programs?

➤ holistic policies (trying to provide a global answer to needs of development of the innovation system) and single (one-off) operations?

➤ "soft" policies (service support and knowledge networks for SME's –the third pillar of the three layer model) and "hard" policies (the first two pillars –resources)?