

Policy Forum on:

**Regional “competence centres”
and European knowledge and innovation networks:
an international comparison of innovation cluster policies**

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KNOWLEDGE CREATION IN REGIONAL NETWORKS

AND THE POLICIES OF “COMPETENCE CENTRES”

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Table 1

**Structure of OECD¹ manufacturing trade² by technology intensity.
Share in total manufacturing trade.**

OECD, STAN Indicators Database, March 2005.

www.oecd.org/sti/stan/indicators/

	1994	1995	2002	2003
High technology	21,2	21,5	25,6	24,8
Medium-high technology	38,6	38,7	38,7	39,2
Medium-low technology	16,0	16,3	14,8	15,3
Low technology	24,2	23,4	20,9	20,7

1. Excludes Luxembourg and Slovak Republic.

2. Average value of total OECD exports and imports of goods.

The competitiveness of the European economy in medium-tech industries

		European Union (25)			Japan			United States			China		
		exp	imp	exp-imp	exp	imp	exp-imp	exp	imp	exp-imp	exp	imp	exp-imp
Manufactures	2004	3053,70	2878,27	175,43	524,28	256,04	268,24	668,67	1133,89	-465,22	542,37	428,27	114,10
	2005	3240,27	3042,17	198,11	546,42	276,35	270,07	732,47	1239,32	-506,85	700,34	493,14	207,20
Machinery and transport equipment	2004	1556,13	1453,60	102,52	371,26	124,43	246,83	393,29	609,13	-215,84	268,26	252,83	15,43
	2005	1636,11	1509,79	126,32	381,29	132,37	248,92	433,67	663,43	-229,77	352,23	290,48	61,76

Source: WORLD TRADE ORGANISATION STATISTICS:
INTERNATIONAL TRADE STATISTICS 2006

http://www.wto.org/english/res_e/statis_e/its2006_e/its06_appendix_e.htm

1. Manufacturing exports of European Union are 4,4 time the exports of United States and 4,6 time the exports of China
2. The trade balance of European Union in manufacturing is positive while that of United States is highly negative
3. Exports in machinery and transport equipment of European Union are 3,7 time the exports of United States and 4,6 time the exports of China
4. The trade balance of European Union in machinery and transport equipment is highly positive and still 2 time that of China but lower than that of Japan
5. In order to maintain the competitiveness of the European Union, innovation policies should focus especially on medium tech sectors

<p align="center">Table 2 The process of innovation in SMEs and in medium technology sectors differs from that of large firms in high tech sectors</p>		
	Linear approach	Interactive approach
Key word	Technology	Knowledge
Stimulus	Cost competition Supply - New equipment	Market orientation Demand - User needs
Process	In house R&D	Interactive learning
Outcome	Productivity increase	Continuous innovation
Policies	Public finance Public regulation	Multi-level governance Public-private partnership

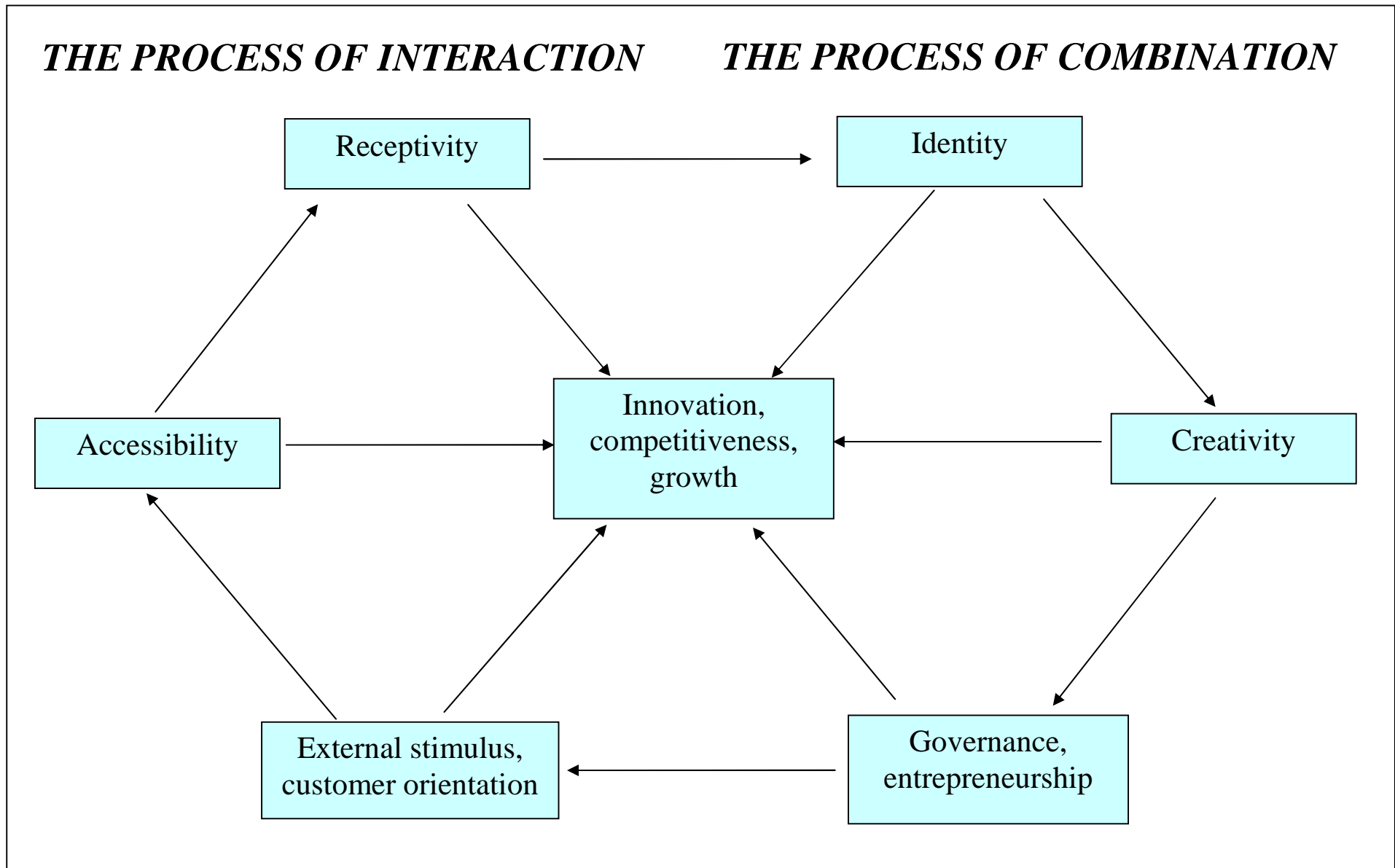


Figure 4 - Territorial Knowledge Management as a methodology for the governance of regional knowledge networks

“Territorial Knowledge Management” is a methodology for the **governance of knowledge networks** and it indicates **six dimensions or levers** to promote interactive learning processes

1. **Innovation stimulus:** pressure of external change, new customer needs, competition threats
2. **Accessibility:** cognitive distance, access to external knowledge, international integration, local embeddedness, knowledge networks.
3. **Receptivity:** tacit knowledge, know-how, specific internal competencies and relational competencies in the cooperation with other actors.
4. **Identity:** sharing common aims, sense of belonging to a community, thrust, loyalty, social capital, collaborative attitudes.
5. **Creativity:** knowledge creation, interactive learning, original combination of external knowledge and internal competencies, effort in systematic searching, exploration and exploitation, flexibility to change, lock in effects.
6. **Governance:** intermediate institutions, bridging institutions, multi-level governance, policy actions to promote accessibility, receptivity, identity, creativity, new strategies and instruments

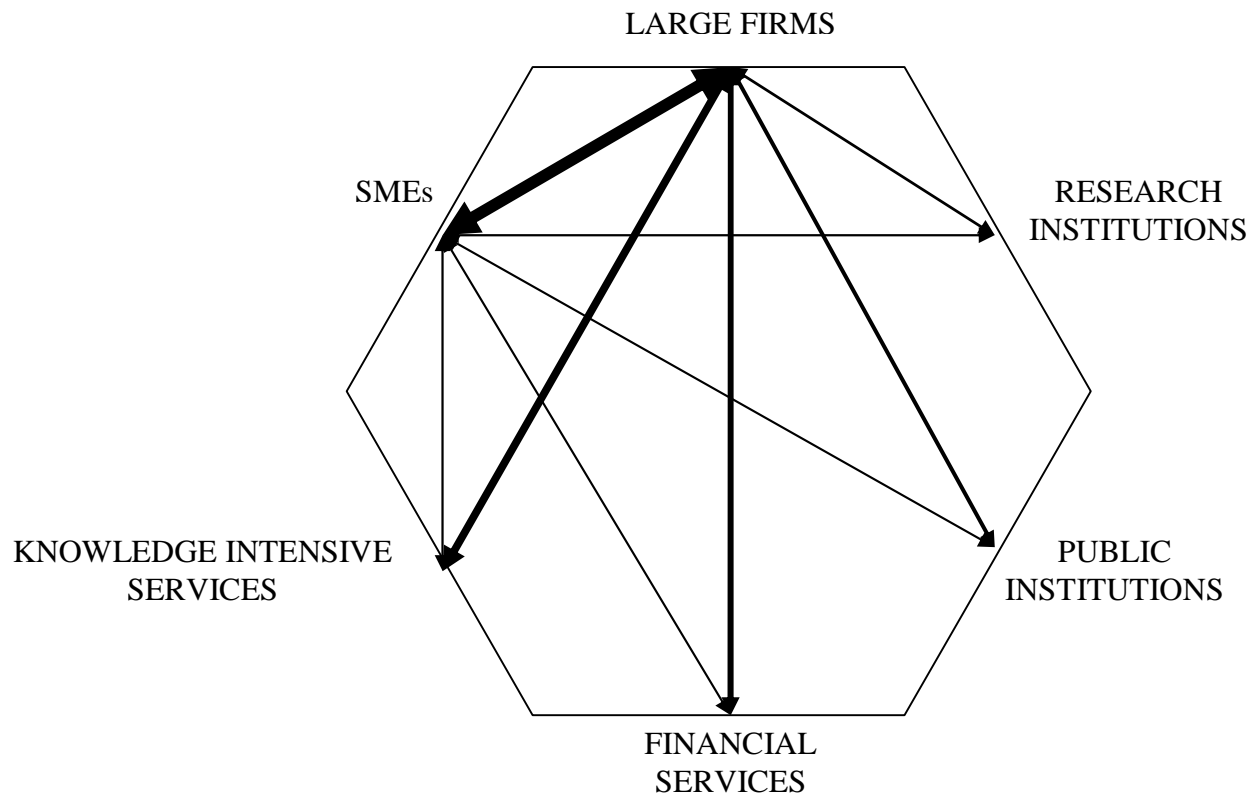


Figure 1:
Information and knowledge links in a regional innovation system

The characteristics of competence centres

- are part of a **national or regional network** created by a national or regional public program, which has defined a competitive mechanism for the selection of the various proposals of competence centres and an national or regional agency for the steering of the overall network of competence centres,
- have a **regional focus** but act on an **international scale**,
- concentrate on a specific **thematic production field**,
- aim to implement a **common strategy** of innovation and economic development for a specific **territorial cluster** or **regional innovation system**,

“Centres of Competence” are different from research “Centres of Excellence”, as they concentrate on innovative industrial projects and specifically focus on the competitiveness of a national and regional industrial and innovation system.

“Centres of Competence” are different from the traditional “Technological Centres”, as they aim to the design and management of large joint projects with several firms and other partners for the development of new innovative productions for the **industrial diversification of a cluster**.

The results of the IKINET project indicate some policy guidelines

In particular, **competence centres** should:

- promote a **production diversification of the regional economy** and new areas of business activity in new sectors of application, by investing in **projects close to commercialization** or in joint industrial research (not in pre-competitive research with a too high level of abstraction) in order to **avoid the path-dependencies and the lock-in effects** in the cluster considered,
- promote the **circulation of tacit knowledge and process of interactive learning**,
- represent an **bridging institution and should promote contacts** between the **large international firms** on one hand and the **research institutions** (thus promoting a new organizational model for universities) and the **SMEs** (thus promoting a greater R&D effort and a mid term development strategy), on the other hand,
- **identify and aggregate emerging and often implicit and scattered demand and explore new markets** for the regional productions,
- build new formal and informal institutions, infrastructures, norms, rules and routines for the **“governance” of the knowledge and innovation networks** and promote the **participation of new partners** in innovation networks, such as KIBS and universities,
- raise **new funding** through public – **private partnership** and involvement of **modern financial intermediaries**, as the problem is there is **lack of profitable projects** while there is an **abundance of funding**.

The European dimension and the internationalization of competence centres

Innovation and new knowledge are the key factors for the **international competitiveness of the European firms and regions.**

While the **internationalization of the markets** of the products and the **internationalization of the industrial supply chain** are well developed, the **internationalization of knowledge links** is still lacking behind.

The **international extension of knowledge networks** of SMEs call for the identification of common objectives and **collaboration in projects that go beyond the territory** of the cluster considered.

Competence centres may create that **institutional framework made by trust, reciprocal commitment and well designed governance**, which allow the firms of distant regions to collaborate in joint projects, where **exchange of tacit knowledge** can not be protected through intellectual property rights.

As firms are increasingly integrated in international production networks, **also competence centres have to build international networks.**