IPS
Policies for SME in clusters

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We've seen importance of clusters of SMEs innovation

➔ Many countries in the world have implemented specific policies to support the creation and development of innovative clusters

➔ The European Treaties stress the importance of the collaboration between SMEs

➔ clustering can be profitable for SMEs also regarding production: industrial districts are a specific form of clusters where firms collaborate to produce a specific product (= division of labour between SMEs in the districts)

Challenges brought by globalisation and digitalisation

Ideas in the EU:

- Economic growth determined by investment in technological upgrading: ICTs and other new technologies

- Employment by favouring the creation of SMEs

$\Rightarrow$ Focus of policy:

❑ SMEs: especially clusters

❑ Innovation and ICTs

Result

Focus on high tech clusters

(world-class clusters in the EU: COM(2008)652 Final/2, p.2); explicit reference to clusters in the Community Strategic Guidelines on Cohesion (CSGs); European cluster observatory)

Result

Also at national level:

- France: pôles de compétitivité

- Germany: clusters, bioregio, innoregio

- UK: cluster promotion, Cluster Mark

- Italy: distretti / poli tecnologici / tecnopoli

$\Rightarrow$ Good point: industrial development arises from below, at regional and local level

Problem

- Challenges of globalisation is unbundling and new production systems in context of intense global competition, especially from emerging countries

- What about old sectors? (mature, based on economies of scale, …)

$\Rightarrow$ Issue of how industrial development really arises: need to include existing sectors, not only new ones

New focus

$\Rightarrow$ Smart specialisation is an answer: development of complementary specialisations at regional level

$\Rightarrow$ include clusters but not only

$\Rightarrow$ policy aims at creating complementarity by searching for related variety

Policies for clusters

Particular focus of policy for SMEs has been put on **clusters**.

The European Commission has also commissioned numerous studies on SMEs and clusters, and a **European Cluster Observatory** has been created

III. Cluster policy

Focus has been (in advanced countries) on high tech clusters

European policy: coordination of national initiatives, benchmarking

Why does a cluster favour innovation?

Various reasons:

1. Proximity of firms and universities or other research centres which facilitates technological transfer

2. Creation of a collaborative culture between universities and industry allowing better application of university research

3. Agglomeration economies (attraction of human capital, development of social capital, etc.)

4. Easier access to finance: venture capital

History of high tech clusters or scientific parks:

- First park: Stanford, 1951

- USA after that: Cornell Business and Technology Park a NY (1952), Oklahoma (1957), …

- First parks in Europe in the 1960s: UK (Cambridge, Oxford) and France Sophia Antipolis (1969) which remains one of the largest scientific park in Europe today (24500 employees)

- Europe is now the continent with highest number of scientific parks (especially in Northern Europe)

- Scientific parks are also in Asia:
  Japan: 110 PS; China: 100

Annerstedt (2006): distinguishes 3 generations of science parks
1. First generation: 'science push'
2. Second generation: 'demand pull'
3. Third generation: glocal interactive flows

First Generation

First generation parks are extensions of universities in neighbouring area which include servies to firms, services to ease spinoffs, etc.

Generally controlled by the university through a company which manage the park

'Science push': new ideas are diffused to businesses which create products

Second Generation

Guided by business interest and not universities' interests

They are independent from universities

Demand pull: markets guide their creation and development; glocal = locally developed but with global linkages

Third Generation

Third generation parks are not created close to universities but are integrated in cities.

Symbiosis between universities, business and local government

Both research push and demand pull: they answer local needs and create new activities

They are more open to global flows

Evidence on effects of scientific parks?

Few studies:

- UK: Westhead and Storey (2002) find that firms in SP have more constant and higher growth

- Italy: Colombo and Delmastro (2002)

 SP are mainly in Northern Italy

 Higher innovation than isolated new high tech firms

Examples of policies:

1. Belgium

Politicy implemented at regional level:

- Flemish region: Flemish cooperative networks for innovation (2002-2012) ⇔ support to collaborative research (ICTs)

- Wallon region: support to technological clusters (e.g. Regione wallona: sostegno a cluster tecnologici (esempio di settore: aeronautic)

Measures:

- Cluster management (executive agency)

- Strategic council and studies

- R&D collaboration programmes

- Training programmes

- Platforms for knowledge exchange

2. Denmark

Policy centrally financed and implemented at regional level: Medicon Valley; NorCom Wireless Communication cluster

Measures:

- Investiment in infrastructure

- Joint marketing

- Venture capital

- Platforms for knowledge exchange

There are now about 45 officially-recognised clusters in Denmark

3. Germany

Policy financed at federal level and implemented at regional level via the **High Tech Strategy**

Examples:

- BioRegio contest (biotechnologies)
- EXIST (university-based startups; entrepreneurship culture at university)

Measures:

- Research programmes
- Investment in infrastructure
- Venture capital
- Networking

4. France

Policy defined and financed at national level and implemented at regional level

Various programmes:

- 1990s: cluster promotion in various sectors, including non high tech

- 2000s: focus on new sectors

In 2005 industrial policy based on competitiveness poles, i.e. government – university – business collaboration to develop competences and industries in territories

About 7,200 firms in competitiveness clusters in France: 73% of cluster firms are SMEs

Competitiveness poles are both "technological" (where R&D is important) or industrial, where the competitive advantage stems from the density of the productive system and commercialisation network.

These poles favour innovation and gathering of competencies, in order to strengthen specialisation and induce the emergence of new competencies in new sectors.

=> 67 polies have been selected; e.g. neuroscience pole in Paris; nanotech in Grenoble; sea-related products and processes in Brittany

5. Countries from Central and Eastern Europe

All have cluster programmes

Clusters are mainly in traditional sectors

Cluster policy is part of SME policy

Examples:

Czech Republik: about 40 clusters supported by national policy (food, wood processing, but also high tech)

Hungary: 22 clusters created by policy

6. Italy

No national legislation to support clusters

⇔Only EU member state without national policy for clusters

However some regions have implemented cluster policies, by creating regional agencies for clusters (with both public and private financing) that support local clusters

e.g. ER region and technopoles

"there is little understanding of how regions diversify into new growth paths, and to what extent public policy may affect this process" (Asheim, Boschma, Cooke, 2007)

Policies promoting clusters (1)

- Numerous: 69 policy programmes in the Union (European Cluster Observatory), 509 cluster initiatives in the world in 2003 (Sölvell et al. 2003)

- Diverse, due to: the variety of cluster definitions, variety of observed clusters (sector, critical mass, network characteristics, role of local authorities, etc.)

Policies promoting clusters (2)

- Focus on new sectors, high tech

- Variety of objectives: develop new sectors, declining industry restructuring, attraction of external firms, etc.

- Variety of means: different actions at the different levels of government; funding (from € thousands to billions)

Empirical evidence on how mature clusters/districts upgrade

Globalisation $\Rightarrow$ clusters have to relate to world production, commercialisation and research networks

Two main modes:

1. Autonomous development of capacity: often leaders in the cluster/district guide upgrading process

2. Relationship with leaders external to the cluster/district in order to access research capacity and commercialisation channels

Policy Implications

Policies differ according to type of evolution:

1. Case of autonomous development: support to innovation and internationalisation capacities

2. Case of relation with external leaders: support to innovation and diversification of clients in order to reduce vulnerability arising from dependence from external leaders

Common denominator: innovative capacity

In both cases the innovative capacity of the clusters/districts is fundamental:

- Absorptive capacity

- Capacity to create and transmit knowledge

Important actions:

- Favouring knowledge creation: talents (human capital), research infrastructure

- Technological transfer: relations university – business particularly stressed

CASES

NORWAY

-   Maritime cluster of the Mid West region (Sunnmøre)

-   Role of the university in upgrading:

    Tromsø: maritime biotecnology cluster

    Agder: shipbuilding cluster shifts orientation towards needs of the oil extracting industry with the help of the university

Maritime cluster of Sunnmøre evolves according to evolutionary processes identified in the literature:

- 'hierarchisation' (consolidation of leaders and reduction in number of smaller firms, which productions are delocalised abroad) and

- guiding role of cluster's leaders

Hierarchisation however **stopped**: firms are relocating production in the cluster in order to benefit from local know-how and external economies

Role of universities in upgrading

The cases of Tromsø and Agder show how universities adapt their specialisations and training to the needs of local businesses:

Biotech cluster: basic research and training of scientists

Cluster near oil extraction industry: applied research and training of technicians and engineers

SPAIN: Basque Country

- Upgrading policies since the early-90s: **long-term policy horizons** necessary for upgrading, together with ***policy learning***

- Attention to technological gap between actors of the innovation system: firms in mature sectors and high tech firms or university scientists that develop new technologies do not necessarily understand each other

$\Rightarrow$ Incentives are needed to reduce gap: monetary (join research financing) + non monetary (culture of collaboration, critical mass, research infrastructure)

GERMANY: Lower Saxony

Upgrading policy: in Wolfsburg (automobile cluster), Hannover (development of 5 clusters)

Use of consultants to define and implement policy

Results (Kiese, 2008):

- Little transparency of the policy process

- Top-down policy process without involvement of local actors

- Short time horizons

- Little related variety (e.g. strengthening of already very concentrated auto industry)

- Policy cost

AUSTRIA

Success story: transformation of industrial area based on heavy industry into 7 dynamic clusters

- Creation of facilitators: organisations managing the clusters (e.g. ACStyria in the auto cluster)

- Coherence (complementarity) between regional and national policies

- Long-term horizon (10-15 years to realise upgrading, i.e. launch clusters)

- Related variety: complementarities between clusters (wood, biomedical, auto, food, new materials, clean technologies and creative industries)

LESSONS

There IS a role for public policies to favour upgrading

Policy Strategies

Upgrading requires:

1. Technological transfer: so that mature industries use new technologies to renew products and processes or diversify into new activities

2. Necessary attention to technological gap or cognitive distance between actors: otherwise no understanding and no compatibility of knowledge creation processes

3. Creation of facilitators or cluster managers seems useful (SFG Styria, OECD, European Commission)

4. Look at RELATED VARIETY: upgrading policy by promoting different clusters possibly in sectors with potential cross-fertilisation (Styria; Spain) + relationships with clusters in other regions

5. Critical mass: what is the ideal dimension of a cluster? Economic theory does not give any clue $\Rightarrow$ method based on call for projects seem useful (bottom-up cluster creation)

6. Upgrading requires large investments (public and private);

7. Fundamental resources is **human capital**: many studies show difficulties of upgrading due to lack of available skills and competencies in the local labour market (Norway case shows role of university in this)

8. Caution needed in using new concepts and policies (Lower Saxony)

Policy implementation

1. Upgrading policies require **long time horizons** (10-15 years at least); continuity of actions must be ensured beyond electoral deadlines

2. Upgrading policy must be defined as a **process** which adapts according to results and changes in the context (**policy learning**)

3. Need for precise **diagnosis** of the territory prior to defining policy (Tuscany: usefulness of work of IRPET identifying the variety and characteristics of local systems)

4. Policy-makers must be **pro-active and courageous, with strong leadership** (for choice of development path and mobilisation towards it);

5. Dialogue and involvement of local actors is essential in definition and implementation phases of the policy

6. When public resources are limited, look for complementarities between political level (multi-level governance)