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Clusters and institutions

Towards a reassessment of the role played by local institutions in the transfer of knowledge and the setting of local networks

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- **Introduction**
- **I. A quick critical appraisal on clusters**
- **II. Ile de France. The main findings**
- **III. Ile de France. The ‘institutional cluster’**
- **Conclusions**

Introduction

- It is time for a critical assessment about:
 - clusters and other types of localized systems of production;
 - the role of geographical proximity in knowledge transfer
 - the role played by institutions in the clustering process

Introduction

- The aim of the paper (based on an empirical study about optics activities in IDF Region)
 - to come back to the notion of cluster
 - to look for a possible optics cluster in the Paris Region (knowledge exchange between local firms???)
 - to assess the role of local institutions in the setting and functioning of clusters

I. A quick critical appraisal on clusters

I. A quick critical appraisal on clusters

- Definition

A rather vague notion... but successful...

The term cluster was firstly used for success stories (ex.: Silicon Valley, with high tech industries, or Nokia, a cluster dealing with technical complementarities and subcontracting relations)

A notion which has been expanded to various types of local systems of production

Nowadays, local or national policy tool (OECD)

I. A quick critical appraisal on clusters

- The reasons of a success. Four major theoretical insights:
 - a system based on the notion of knowledge economy
 - a framework for collective action (network externalities)
 - vertical (quasi) integration between local firms
 - the crucial role given to the relations with other production systems or firms

I. A quick critical appraisal on clusters

- Back to the clusters. A simple definition based on two key elements

Organization of inter- firm relations

Strong

Weak

| | | | |
|---------------------------------------------|---------------|---------------------------------------------|---------------------------------------------------------------------------------------|
| Localisation of inter-firm relations | <i>Strong</i> | 1. Cluster a la Porter | 3. Cluster based on local resources /agglomeration due to the region's history |
| | <i>Weak</i> | 2. Cluster without local foundations | 4. Sparse activity |

I. A quick critical appraisal on clusters

- And what about the role of institutions in the process of clusterization?
- Do clusters are “natural” regroupings of firms or individuals (embedded in the history of societies)?

II. Ile de France

The main findings

II. Ile-de-France. Key figures of the optics industry

| Region | Number of employees in the optics industry (2003) | Share of the « département/region » in 2003 (%) | Evolution of the number of employees in the optics industry (1992 – 2003) |
|----------------|---------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------|
| Paris | 880 | 4,2 % | - 57,4 % |
| Seine-et-Marne | 2278 | 11 % | - 2,7 % |
| Yvelines | 6653 | 32,3 % | + 34,9 % |
| Essonne | 3250 | 15,8 % | - 11,3 % |
| Hauts-de-Seine | 2651 | 12,8 % | - 63,3 % |
| Seine-St-Denis | 876 | 4,2 % | - 50 % |
| Val-de-Marne | 2411 | 11,7 % | - 39,4 % |
| Val d'Oise | 1591 | 7,7 % | - 53,2 % |

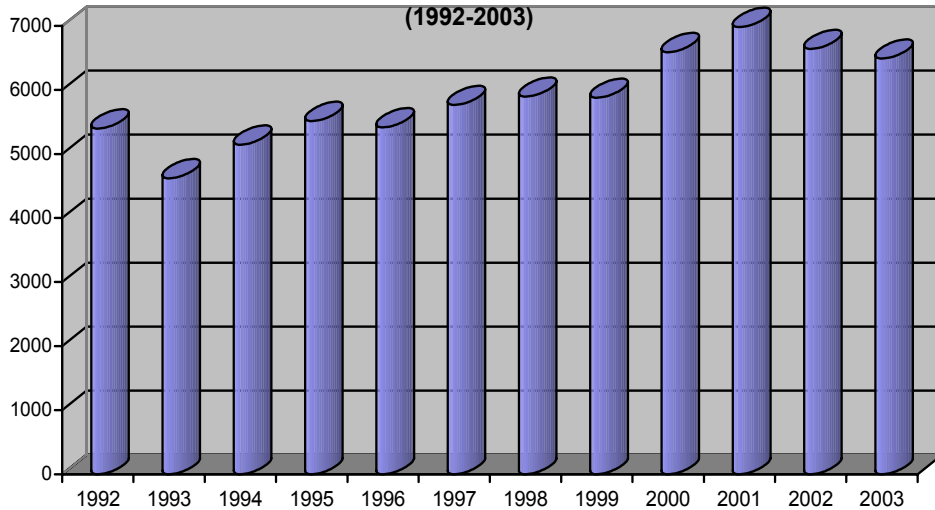
Source : Unistatis, 2006

The Ile-de-France region has experienced a very sharp decrease in the number of employees in the optics industry during the 90's (- 30% over the 1992-2003 period).

This decrease has not affected in the same way all the “départements” of Ile de France

II. Ile-de-France. Key figures of the optics industry

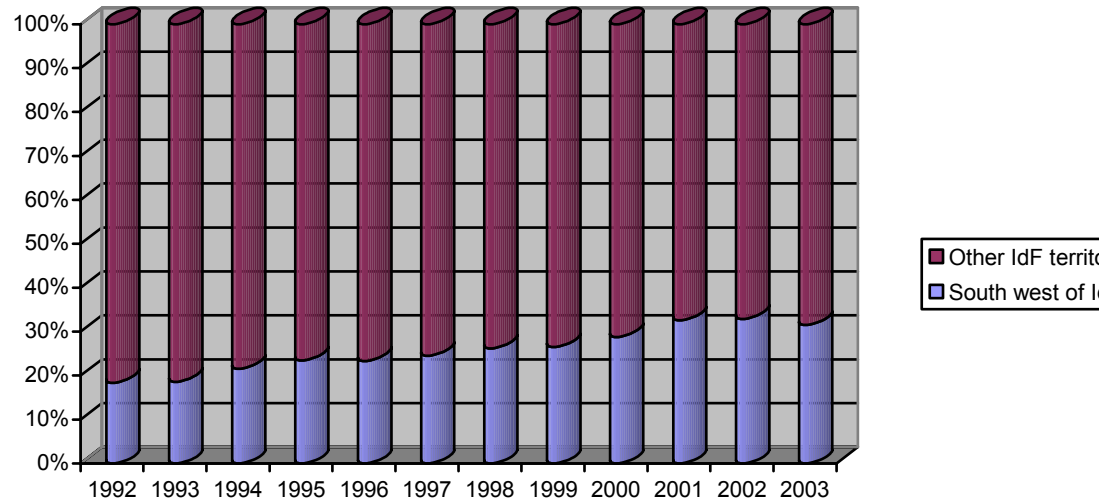
Number of employees of the optics industry localised in the south west of Ile-de-France (1992-2003)



The size of the optics industry in the south west of Ile-de-France has been growing between 1992 and 2003 (cluster effect?)

Source : Unistatis, 2006

Share of the south west of Ile-de-France in the regional optics industry (% of employees)



The share of the south west part of Ile-de-France has been constantly growing during this period (from 15% of the regional optics industry in 1992 to 30% in 2003)

II. Ile-de-France. The main findings

Local optics med tech firms maintain mostly simple client-supplier links

- Med tech sme's sell to large firms and public laboratories
- Most of the products sold have well known and stabilized technical specifications (mature products)
- Rather instable commercial links and with quite limited knowledge exchange.

Local optics high-tech firms and start-ups have more intense local links with labs and large firms

- Necessity of important feedback in order to develop new products
- Face-to-face contact necessary to have successful interaction.
- Co-localization makes it easier for the firms to interact, but is not compulsory (use of temporary geographical proximity)

Existence of negative effects of geographical proximity

- Periods of rapid growth reduces the availability of quality workforce for sme's.
- Existence of permanent congestion effects (Large city-region)

II. Ile-de-France : Important local interactions between large firms and sme's

| | Firms (Client) | SME1 | SME2 | SME3 | SME4 | SME5 | SME6 | SME7 | SME8 | SME9 | SME10 | SME11 | SME12 | SME13 | Large firm 1 | Large firm 2 | Large firm 3 | Large firm 4 | Large firm 5 | Large firm 6 | Large firm 7 | Large firm 8 | Large firm 9 | Large firm 10 | Large firm 11 |
|-----------------|----------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| SME (Suppliers) | | | | | | | | | | | | | | | | | | | | | | | | | |
| SME 1 | | | | | | | | | | | | | | | | | | | | 1A | 1A | | | 1A | |
| SME 2 | | | | | | | | | | | | | | | 1A | 1A | 1A | | | | | | | 1A | |
| SME 3 | | | | | | | | | | | | | | | | | | 3B | | 2A | | | | | |
| SME 4 | | | | | | | | | | | | | | | 3B | | 2B | | | | | | | | |
| SME 5 | | | | | | | | | | | | | | | | | | | | | | 2B | 2B | | |
| SME 6 | | | | | | | | | | | | | | | | | | | 1A | | 1A | | | | 3C |
| SME 7 | | | | | | | | | | | | | | | 3C | | 2B | | | | | | | | |
| SME 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| SME 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| SME 10 | | | | | | | | | | | | | | | | | | | | 3C | | | | | |
| SME 11 | | | | | | | | | | | | | | | | | | | | | | 3C | | | |
| SME 12 | | | | | | | | | | | | | | | | | | | | | | | | | |
| SME 13 | | | | | | | | | | | | | | | | | | | | | | | | | 3C |

1 = Occasional local relation

2= Weak but constant local relation

3 = Strong and constant local relation

A = simple client-supplier link

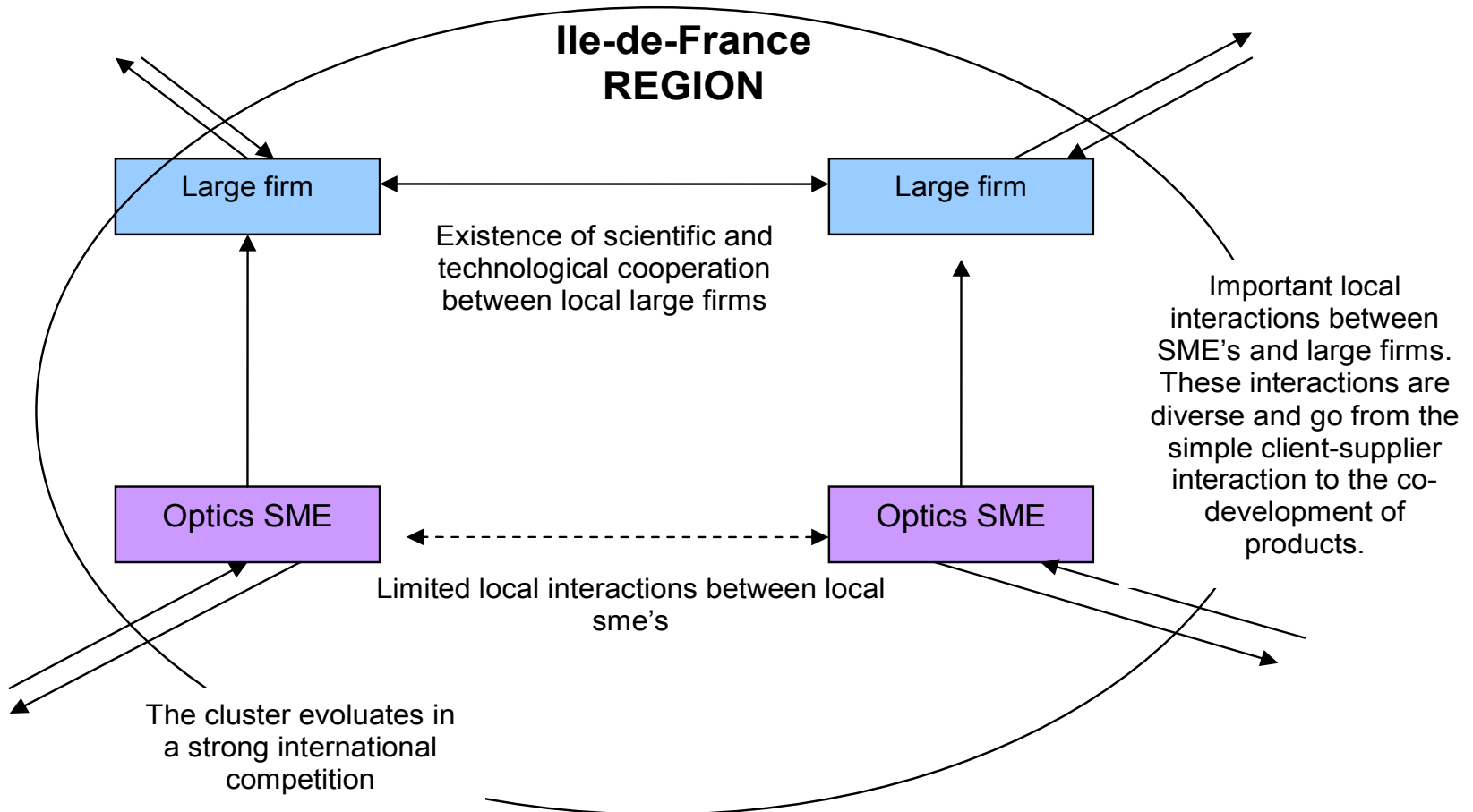
B = client-supplier link with limited feedback

C = co-development of products

- 3 main types of “Hierarchical” local interactions (not all cluster type) :
 - Large firms buy products from local sme’s (when they are competitive at a global level)
 - Local interactions between large firms and sme’s imply quite weak knowledge exchange
 - Co-development of products between large firms, and between large firms and

II. Ile-de-France OS: A hierarchical cluster

The Ile-de-France Optics cluster : a hierarchical cluster



III. Ile de France

The 'institutional cluster'

III. Ile de France. The ‘institutional cluster’

- Several institutions (regional and national) are involved in the regional innovation system :
 - **Pôles de compétitivité**: Impulse from the national level; financial support from national and local governments (Conseil Régional, Conseil Général, Communautés d’agglomérations, cities)
 - **Local cluster organizations**: Impulse from the regional level and « département ». Totally funded by regional government (Opticsvalley since 1999).
 - **Local innovation support institutions**: (CRITT, Comité d’expansion économiques...): Supported by the region or “départements”.
 - **National innovation support institutions**: (Oseo, ANR, All...) : created and financed by the national government, but support might have regional impact.

III. Ile de France. The “institutional cluster”

- Major links between local institutions and firms :
 - Institutions that have subsidies or which can provide financial support to Sme’s (CRIF, CG, CRITT, OSEO...)
 - Local technical networks that can help sme’s solve problems (Réseau Mesure Val d’Oise)
 - Institutions that support knowledge transfer, mainly between public research and sme’s (CRITT).
 - Institutions that provide a specialized network and can facilitate the local interactions between Sme’s, large firms and public labs (Opticvalley, Genopole). (new policy since end 90’s)

III. Ile de France. The “institutional cluster”

| | CRITT | OSEO | Opticsvalley | Genopole | CCI | Comité d'expansion économique locale | Ile-de-France Développement | RMVO | Pôle de compétitivité | All | ANR |
|--------------|-------|------|--------------|----------|-----|--------------------------------------|-----------------------------|------|-----------------------|-----|-----|
| SME 1 | X | X | | | X | | | | | | |
| SME 2 | | | X | | | | | | | | |
| SME 3 | X | | | | | | | | | | |
| SME 4 | | | X | | X | | | | | | |
| SME 5 | | | X | | X | | X | | | | |
| SME 6 | | | X | | | | | | | | |
| SME 7 | X | X | | | X | X | | X | | | |
| SME 8 | X | X | X | | | | | | X | | |
| SME 9 | X | | X | | X | | | | | | |
| SME 10 | X | | | | X | | | | | | |
| SME 11 | | | X | | | | | | X | | |
| SME 12 | | | X | | | | | | | | |
| SME 13 | X | X | X | X | | | | | | | |
| Large firm 1 | | | X | | | | | | X | X | X |
| Large firm 2 | | | | | | | | | X | X | |

- major and strong links between sme’s and local institutions that support economic development and innovation
- every firm has its own set of local relations with institutions, depending on their needs (exportation, innovation...)

Conclusions

The role played by local institutions

Conclusions. The role played by local institutions

- They play the role of central organizers :
 - key role in the definition of cluster policies
 - they decide the location of the cluster and the technologies to support
- This role is obvious in several French regions (concerning the poles de compétitivité policy)

Conclusions. The role played by local institutions

- They promote the image of the local system of production abroad
- They provide subsidies to support local innovation and to reinforce the local economy.
- They improve local entrepreneurship potential (creation of incubators, nurseries, support to the creation of start-ups, financing of venture capital funds)

Conclusions. The role played by local institutions

- They help in building local networks and cooperation relations between local firms
 - they ease interactions between local economic actors
 - they organize meetings between the local actors
 - they reinforce learning mechanisms between local firms and institutions