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***Metropolitan Areas and Science Parks :
Universities, Centres of Excellence and Regional Development***

by

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Abstract

In a significant number of European metropolitan areas, universities (or parts of them) have been or are leaving the historical centre where they have been located for decades, and often for centuries. Research institutions are at the same time often developing facilities and premises at the periphery where land is available at relatively low cost.

This move raises various strategic issues at different levels of government, spatial and urban planning, as well as concerning university management.

For instance, for small and medium size cities which are intended to host new campuses : how to optimise such "external" investment and build on it to the benefit of local development and improvement of social capital; how to conceive and implement proper urban and spatial planning; how to address students needs; how to build a trustworthy and win-win relationship with the university hosted; how to solve problems of multi-level governance, and in particular how to promote and market the new image resulting from new competencies in a context of competition with the larger city, head of the metropolitan area; etc.

Stockholm, Oslo, Munich, among other large metropolitan areas in Europe, have been addressing these issues in the last decade through networking with small and medium size cities in the periphery and the creation of specific agencies, with the support of well-conceived web portals.

The example of Parco Tecnologico Padano in Lodi, close to Milano, illustrates the importance of these strategic issues and the way in which they can be addressed. Milano State University has decided to relocate 3 Faculties (Veterinarian, Agrarian Sciences, Pharmacology) on a new campus in Lodi (25 kms from Milano) paving the way for a clustering process with an hospital for animals, a technological platform, a bio-incubator and a business park, leading to a pole of excellence of European level in the field of biotech applied to the agri-food sector and agro-industries, which will be fully operating by the beginning of 2004.

Paper

1. For about a dozen years now, urban policies experts have been pointing at three parallel evolutions or phenomena with respect to urban areas :

- The first is the metropolisation of urban areas. This phenomenon consists in the rapid development of small and mid-size cities surrounding a “central” city, core of the urban area. It implies a concentration of “high added-value functions”, known as “metropolitan functions”. These functions are classically the following ones : art and culture ; banking and insurance ; trade and business services; information services and media ; information and communication technologies (ICT); public administration ; universities, higher education and research. We can identify these functions in all European metropolitan areas.
- Another evolution is the “desertification” or « museification » of the core of the “central” city and the spatial spillover of the urbanisation process. It means that the metropolis is expanding while the “central” city is losing inhabitants and activities under pressure of various factors (problems of accessibility, property prices,...) to the benefit or not (it depends of the context) of the metropolitan small and medium size cities.
- The last phenomenon is the territorial specialisation. Territorial specialisation may be an old phenomenon (for instance : the textile clusters in some cities of Northern France, or in cities of Tuscany), but, in the context of metropolisation and urban spillover, the phenomenon is renewed. Today, local actors in metropolitan areas organise themselves and are creating clusters, industrial and/or scientific & technological, particularly in the NTIC and biotechnology sectors which can be located in the periphery – see for instance the bio-clusters in the metropolitan areas or regions of Helsinki, München, Oslo, Stockholm.

2. It is in this context that some universities and research institutes that have been located for decades (and in some cases for centuries) in historical city centres are leaving. The re-location of academic and research centers in the periphery is at the same time a consequence and a cause of the triple evolution mentioned above :

- First, we can explain this re-location of academic and research centres by demographic, property and practical factors. In the eighties and nineties, facing a dramatic increase in the student population, the inflation of property prices (difficulty to expand) and problems of accessibility, universities and research centres in need of available space have started to search for more convenient and affordable locations.
- Second, for decades and even centuries, business centres and intellectual centres (universities) have had very loose links, if any. The Milano region was a good example, with the business centre in Milano and the intellectual centre in Pavia (30 kms from Milano) where was located the historical university. The Stockholm region offers another example, with the city of Stockholm (business centre) and the city of Uppsala, with its old university, distant from 70 kms. Today, however, now, in a knowledge-base society, the development of the relationship between companies, particularly SMEs, and universities and research has become crucial. The establishment and development of such relationship requires to bring closer the two partners, academia and business, in spite of the now classical mantra on “virtual” clusters linked to ICT achievements.

- Last, the re-location of universities in periphery is necessarily accompanied by research centres and labs. Once the critical mass is reached, universities and research attract companies in search of RTD resources and innovation support, which attract themselves business services, and so on, leading to a clustering phenomenon.

Oslo metropolitan area, with its development agency, Oslo Teknopol (Counties of Oslo and Akershus) illustrates this situation. The business district is in the city of Oslo. NLH, the university of agronomical sciences, had been established in Ås (30 kms from Oslo) in the early 20th century. The links with Oslo economic development had been very loose for a long period of time. But since the eighties/nineties, new research centres, in relation to new scientific and technological developments, have been established in Ås and are now attracting companies in the biotech and agro-food sectors as well as generating spin-offs, with creation of a science park and incubator. A "snowball effect" is now leading to an Oslo region bio-cluster.

3. Obviously, the re-location of academic and research activities in the periphery raises various strategic and practical issues at different levels of government for small and medium size cities who are hosting new campuses and research centres – and for the metropolis as well :

- Are the small and medium size cities of the metropolitan area in a position to host these new activities ? Have they serviced land at affordable prices, good accessibility and transport facilities, a sufficient quality of life compared to the "central" city ?
- How to manage the resulting competition between small and medium size cities of the periphery – and in some cases between them and the "central" city ?
- How to optimise the "external investment" corresponding to the re-location and build on it to the benefit of local development and improvement of social capital ? In particular, how to help turning research into business ?
- How to address students needs?
- How to conceive and implement proper urban and spatial planning?
- How to build a trustworthy and win-win relationship with the university and/or research centres hosted and local actors, companies, public authorities, business organisations, etc. ?
- How to "market" and promote the city outside ? This problem raises two issues. First, what is at stake here is the local identity. How to host new activities and create at the same time a new image of the city, resulting from new resources and competencies, without losing the benefit of the traditional culture and image ? And, second issue, the territorial marketing of the "host-city" cannot be separated from the marketing of the whole metropolitan area or region, because the periphery benefits from the "level of excellence" of the metropolis. So, how to promote and market this new image and how to build an efficient and effective strategy in a context of "co-opetition" with the larger city, head of the metropolitan area ?

4. These questions do not receive ready-made solutions and answers. Each metropolitan area has its specificities, culture and identity. However, there are some common answers brought to them by various European metropolitan area, such as Stockholm, München or Oslo.

We shall address two of them, that we consider as of particular relevance :

- Networking for Coherence : First, networking between small and medium size cities, the "central" city, universities, research centres and science parks in the periphery, in order to involve all the local actors and to ensure the coherence of the regional development strategy, policies and actions.
For instance : "*Business Arena Stockholm*", an agency which is grouping Stockholm-Uppsala region and 24 cities, is promoting a "metropolitan" network of science park)
- Common Territorial Marketing : Another answer is the creation of economic development agencies providing services to SMEs and promoting the area.
For instance : "*Oslo Teknopol*" or "*Business Arena Stockholm*" again, which are in charge of the territorial marketing through a web site and the promotion of investments in the area, the economic development through clustering actions, support services to SMEs, support services to location of businesses (science and business parks, incubators, one-stop-shop for administrative red tap, etc.).
Another example is SISBY, the Stanford-Information-System, a data base on available serviced land and buildings in the Munich area, associating regional chambers of commerce, the Bavarian government Departements of Trade, Transport and Technology.

We would like, in the last part of this paper, to present a metropolisation process on going with the constitution of a major bio-cluster at European level in the Milano metropolitan region. This case is a very good illustration of all the issues that have been previously listed.

5. The development of the Parco Tecnologico Padano in the Milano/Lodi area :

5.1. About six years ago, the State University of Milano (*Università degli Studi*) decided to re-locate its Faculty of Veterinarian Sciences and to build an Hospital for "big animals" (*Ospedale per grandi animali*) close to the city of Lodi, 25 kms south east of Milano along the major italian highway (A1 Milano-Bologna).
Lodi is the capital of the Province of Lodi, recently created (1996), the northern part of which is included in the Milan metropolitan area.

Some time later, one of the richest European foundations decided to support the creation of a Pole of excellence in animal and vegetal biotechnologies on a piece of land next to the future new campus. A specific foundation was set up to manage the project, *Fondazione Parco Tecnologico Padano* (hereafter : PTP), with direct involvement of the Province, City and Chamber of Commerce.

The move was supported by Region Lombardy which was developing its own programme of Centres of excellence and registered the Pole of Lodi among them, with support through "programming agreements" (*accordi di programma*). Italian researchers were "brought back" from the USA and Sweden to establish new labs in bio-informatics, animal and vegetal genomics. The scientific direction was placed under a high-level scientist.

At this stage, the managing staff of *Fondazione Parco Tecnologico Padano* considered that the project could not limit to the academic sphere and that, if the Province was to reap the benefits, it was necessary to give it a business-oriented dimension.

In consequence, it was decided in the early 2000 to create :

- a technological platform for allowing companies to use and share large-scale and expensive equipments;
- a bio-incubator for start-ups and spin-offs (in particular academic spin-offs);
- a business park for locating businesses coming out from incubators and advanced agro-food or agr-industrial companies.

At the same time, the local and regional cattle-breeders federations decided to build their own premises on the PTP land.

The "snowball effect" had started.

The University of Milano decided to enlarge its presence in Lodi with transfer of the Faculty of Agronomical Sciences, various experimental centres, and part of the Faculty of Pharmacology. Other RTD organisations decided to profit by the presence of Faculties by re-locating next to the campus.

The result is that, within a few months, there will be on the University new campus and PTP one of the major RTD concentrations in Europe in the field of "agro-vet" sciences, with an experimental and technology transfer dimension.

On the side of industry, the Italian federation of biotechnologies industries (ASSOBIOTEC) decided to support actively the project.

5.2. What is the situation now, in particular with respect to the questions we raised previously?

The future perspectives of the Province of City have completely changed. Lodi was attracting (and is yet) logistics platforms. It prepares now to become a major centre at European level in the field of agro-biotechnologies and it has started to attract high-tech companies in the sector: the bio-incubator is already overbooked.

All this is extremely positive, but four major issues have to be addressed that takes us <back to our basic topic : urban and spatial planning; the local identity; the relation with SMEs in the area; the relation with Milano (Province and City).

▪ Urban and spatial planning :

The Province is setting up a new "territorial plan" which has to "absorb" the new campus, the PTP 32 hectares, and the 40 hectares of the future Business Park, which will be located 2 kms from the PTP area.

But it has also to face perspectives of growing demand from high added-value companies, not only because of its new attractiveness, but also because the north of Milano is overcrowded now and offers mainly old industrial buildings to restructure.

▪ Local identity :

The Lodi "new profile" is not fully accepted by a part of the population, because of the dramatic changes it implies and because of some fears concerning biotechnologies (GMO, animal illnesses, etc.). A new image has to be built, which will have to be endorsed by citizens, linking the traditional agricultural and agro-food activities with the new biotech ones.

An Agency is being set up which has to fulfil this task among others (*Agenzia di Marketing Territoriale e Sviluppo Integrato*).

▪ Relation with SMEs in the area :

RTD resources represent a fantastic opportunity for SMEs of the agro-food and agro-industries sectors, not only in the Province itself, but in the whole area (Southern and Eastern Lombardy, part of Emilia-Romagna), which is one of the richest and most developed in Europe in these sectors.

The problem is how to help them to catch this opportunity. In order to address this major issue, the PTP is creating with support of the Region Lombardy (Direction of Agriculture) a "task force" for helping SMEs to participate in national and EU RTD programmes and projects (FP 6) together with research labs (*Nucleo di supporto ai progetti innovativi*). The Region itself has created a "meta-district" (or "virtual" industrial district) on "agro-food biotechnologies" which aims at supporting innovation processes in the agro-food sector and developing a system of "strategic intelligence".

▪ Relation with Milano :

Lodi is part of the "Greater Milano" and its population has to accept it as a fact.

The relation with Milano includes necessarily some competition, in particular for attracting external investment and new businesses, but the competition is in a way "regulated" by the specific offer of Lodi on the market (the construction of this offer is not yet fully completed).

At the same time, co-operation is essential for, in terms of marketing at European and international level, Lodi "is not on the map" : scientific, technological and industrial excellence are in Milano, Lombardy. Lodi will be marketed through and together with Milano. And this is a major issue for the Agency that is being set up.

The *Fondazione PTP* is actively promoting the co-operation with Milano.

It is setting-up with two other Milano centres of excellence supported by the Region (in the field of health and medicine) a "networked bio-incubator" (*bio-incubatore a rete*) for realising economies of scale concerning support services to start-ups and spin-offs. It negotiates an agreement with the University for hosting academic spin-offs.

Together with the Lombardy industries federation (*Assolombarda*), it is pushing for a Milano-Lodi bio-cluster (*Bio-Iniziativa*) and, at EU level, for an EuroBioclusters grouping within the so-called "Alpine Space".

We will conclude shortly by some key facts :

- The new University campus opens by September 2003 with Faculties and students
- PTP will be operational by February 2004 : technological platform, bio-incubator, research labs (its own and those of various research organisations), cattle-breeders buildings
- The bio-incubator is already over-booked
- The Business Park is scheduled for 2005

Once again, there will be in Milano/Lodi one of the major European RTD concentration in "agro-vet" and biotechnologies sciences, associated with fast growing industries, in one of the richest agro-food area in Europe.

Anyway, the life of *lodigiano* will never be as before.