# From sectors to functions: producer services, metropolization and agglomeration forces in the Ile-de-France region

Ludovic Halbert

# From sectors to functions: producer services, metropolization and agglomeration forces in the Ile-de-France region

Ludovic Halbert

Researcher, Université Paris-Est, LATTS, (UMR CNRS 8134)
ENCP-LATTS, 5 Rue Einstein, 77455 Champs-sur-Marne
Tel : 01.64.15.38.39
Mail : ludovic.halbert@enpc.fr
Website: http://latts.cnrs.fr/site/p_lattsperso.php?Id=1092

**Please quote the published version:**

HALBERT, L., (2007), "From sectors to functions: producer services, metropolisation and agglomeration forces in the Ile-de-France region" flows", *Belgéo*, n°1, Special Issue on The Advanced Services Sectors in European Urban Regions, pp. 73-94.

**Abstract:**

This paper reviews the role of producer services in the scientific debate on metropolisation processes and discusses the different types of agglomeration economies. Based on the critical appraisal of sectoral based approaches, it develops a more functional case study of the geography of producer services in the Paris metropolitan region to test the form and nature of economic specialization. The results confirm the multipolar-monocentric pattern which seems to be a common feature in many European cities. The paper concludes on the importance of a functional and hierarchical division of labor in the Paris city-region.

**Key words:**

producer services, Paris metropolitan region, functional division of labor, concentrated deconcentration, multipolarity, monocentricity, agglomeration economies

**Résumé :**

Les services aux entreprises jouent un rôle important dans les débats sur les formes et les facteurs des processus de métropolisation ainsi que sur la nature des économies d'agglomération. La critique des approches purement sectorielles généralement utilisées dans la littérature invite à un travail d'analyse plus fonctionnel. La géographie des services aux entreprises dans la région francilienne est réévaluée à partir d'une lecture de ce type et montre l'intensité de la division fonctionnelle et hiérarchique des tâches. Ceci confirme non seulement l'existence d'un "modèle" multipolaire et mono-centrique dans le cas francilien, faisant écho à ce que l'on trouve dans de nombreuses autres régions urbaines européennes, mais aussi l'importance des processus de division fonctionnelle et hiérarchique du travail dans le cadre de l'avènement d'une économie de l'information.

**Mots-clés :** services aux entreprises, région métropolitaine parisienne, division fonctionnelle des tâches, déconcentration polarisée, multipolarité, monocentrisme, économies d'agglomération

## Introduction.

Advanced Producer Services (APS) are often identified as critical actors exercising the practice of command and control functions in the contemporary economy (Sassen, 2001). They play a leading role in metropolisation processes both at inter- and intra-city-region levels (Bouliane et al., 1998, Daniels, 1991, Daniels et al. 1996, Derudder, 2006). At the inter-urban scale, APS professionals are central in the development of a "geography of flows" (Castells, 1996) that is responsible for the "archipelago" economy described in the 1990s (Veltz, 1996), an economy which links major global metropolitan areas in one or more networks (Taylor, 2003). Following the same line of argument at intra-city-region level, the changing spatial organisation of metropolitan areas has been linked to the role of Business Services (BS) and more specifically of APS to explain for the shift from traditionally mono-centric cities built around a central economic core towards more polycentric urban regions (Kloosterman and Musterd, 2001,). The deconcentration of some business services from the CBDs to their surrounding suburbs - as first observed in the 1980s and 1990s in North-American city-regions - has been central in the description of metropolitan regions' contemporary transformations.

However, Canadian researchers have offered a critical appraisal of CBD decline (Coffey and Polese, 1996) which has led to a widely acknowledged change in the perception of current metropolitan transformations. With the death of cities no longer being taken for granted, the literature insists on the very strength of metropolitan central areas not only in European but also in North-American city-regions. After all, some APS do not leave the traditional CBD, but even tend to be more concentrated in central areas as less advanced business services are forced to relocate into less expensive suburban office markets.

Furthermore, as the New Economic Geography has been evoked by economists and some geographers to explain for the changing spatial organisation of metropolitan areas (not only at the level of urban systems but also within urban regions), producer services have kept continued to be central to the understanding of the formation of the polycentric urban regions. Following the hypothesis of a post-industrial economy, locational choices of producer services are sometimes thought to be driven by the search to improve both market externalities (proximity to clients for instance) and specific sectoral economies

resulting from the co-location with other *similar* firms (localisation externalities). The polycentric region would then be the result of firms' sectoral locational choices. However, it can be argued that a more trans-sectoral shift has occurred with the development not so much of a post-industrial economy but of an information economy (Porat, 1977, Reich, 1991), which affects all sectors, both services and industries. Producer services would be emblematic not so much of firms' sectoral considerations but of a functional differentiation taking place within metropolitan regions (Duranton, Puga, 2000, Feser, 2003). The polycentric city-region would thus result from an increasing division of labour not between different business services but between different functions of the economy. In the context of an information economy where access to tacit and face-to-face contacts proves to be crucial for the efficiency of some high value-added activities, the most information-sensitive jobs would tend to remain in economic cores while others would relocate in peripheral places (as seen in the Fujita and Ogawa model, 1982). The centripetal forces would thus rather be linked to Jacobs-type externalities (Jacobs, 1969) with the potential interactions resulting from the co-location of advanced functions of differentiated economic sectors explaining the concentration of industrial headquarters and of numerous advanced services producers in the CBDs while less information-intensive functions (often depicted as back-office activities dealing with routinised tasks) would be decentralised to more secondary economic poles in the peripheries (or sometimes outside the city-region).

Considering that producer services are crucial to the understanding of contemporary spatial and economic changes occurring in metropolitan regions, this paper further develops the study of the functional division of labour hypothesis by addressing some of the methodological difficulties encountered in research so far. Much research has studied the functional division of tasks within metropolitan regions with data resulting from *sectoral* classifications, as has been the case with most analyses of the economy of the Paris metropolitan region (Cragué, 2002, Halbert, 2004a, Boiteux-Orain et al., 2006). In this paper, I aim not only to show how, in the case of the Paris metropolitan region, the geography of producer services has evolved towards a more multipolar geography in the last decades of the 20$^{th}$ century, but also how it is the result of a functional differentiation rather than a "new" sectoral change as the post-

industrial hypothesis tends to over-emphasize. In other words, even though I do recognise the existence of a sector-based differentiation of activities in the multipolar geography of the Paris region, I argue that functional and hierarchical criteria seem to be more important factors in an understanding of contemporary intra-metropolitan transformations.

The paper will start with a review of the literature on the forms, nature and factors of the changing intra-metropolitan geography of producer services and on their impacts regarding the formation of multipolar city-regions (1). I will then develop a study of the economic geography of the Paris region. After showing the "concentrated deconcentration" (Hall, Pain, 2006) occurring in the dense part of the Paris metropolitan region (2), the paper engages a functional analysis of producer services which goes past what appears to be a limited sectoral approach. Based on statistical analysis from the National Census Bureau's (Insee) database, a functional and hierarchical typology is proposed (3). The paper concludes with a discussion of the various externalities offered by metropolitan regions, analysis of the dynamics explaining the transformation of metropolitan regions and suggestions for some factors that should be emphasised in future research (4).

## 1) From the "death of cities" to CBD reinforcement: theoretical and methodological issues

Metropolisation is often described as a set of two-fold selective dynamics: the concentration of conception, command and coordination functions in major urban areas and their parallel deconcentration *within* these urban areas. The latter process has given birth form the 1990s onwards to at least three major geographical debates on the pattern, nature and models of formation of contemporary metropolitan spaces in which producer services have proved crucial.

Business services in general, and Advanced Producer Services in particular, have long been associated with the central areas of cities. Whereas throughout the 19$^{th}$ and much of the 20$^{th}$ century most large cities like London,

New York or Paris faced intense absolute or relative deconcentration of their population and manufacturing activities, producer services professionals remained located in Central Business Districts. However since the 1960s (Abler, 1970), metropolitan productive systems have undergone a major change with the deconcentration of producer services not only from central places to newly developing regions (the rise of the "Sun belt" is an example in the U.S.) but also from traditional economic cores to intra-metropolitan peripheries. After the first two waves of deconcentration affecting population (and induced services to households) and manufacturing activities, scholars acknowledged a "third wave" (Cervero, 1989), and a "new suburbanization" (Stanback, 1991) that was thought – and is still considered by some –to dramatically change the nature of cities. In summary, during the Fordist era, centrality was a notion that could be applied indifferently to the fields of economy and space, as central economic functions such as headquarters of large manufacturing firms were found in central business areas. With the end of the Fordist economy however come the dissociation of economic and geographic centralities. High value-added and command functions, which have become all the more important in the post-Fordist economy, seemed to some observers to require traditional central locations. These economically central functions feed deconcentration processes in many metropolitan regions (from Gottmann, 1961, to Scott et al., 2001).

Consequently, the application of post-Fordist theories to the urban field (i.e. the end of the Fordist economy means the end of the Fordist centre-periphery economic geography) partly discredited the efficiency of the compact city model. A large part of the literature developed the idea of the "death of cities (from Jacobs, 1961 to Glaeser, 1998). For example, in 1968, Webber saw the coming of the "post-city age" while in 1995, Gilder depicted cities as being "the leftover baggage from the industrial era". The extending suburbs of Los Angeles are cited as evidence of a "post-industrial and post-modern city model" (Muller, 1981, 1997). To some analysts of the 1990s, urban sprawl was not a counter-productive anomaly that increased transaction costs, but the desirable future of urban spaces (Gordon, Richardson, 1996a, 1996b).

The very forms of this *new suburbanization* have been discussed among North-American observers. For some, the deconcentration of producer services

was seen as anarchical and dispersed (see Gordon, Richardson, 1996a and 1996b and more recently Lang, 2003). At most, some large sub-regional areas may benefit more from this dynamic than the rest of the metropolitan area (high-tech quadrants like Silicon Valley, Route 128 or Orange Country). The resulting spatial organisation is one of dispersal and even spatial dilution of producer services. Alternatively, some authors observed what has been called in the European context a "concentrated deconcentration" (Hall, Pain, 2006). Rather than dispersal, polarisation would prevail with the emergence of secondary centres that concentrate suburban offices (Archer, Smith, 1993) in "magnet areas" (Stanback, 1991), "Suburban Employment Centres" (Cervero, 1989) or "edge cities" (Garreau, 1991). However, if the spatial patterns differ considerably (multipolar vs. dispersed city-region), in both cases the logic remains the same. The post-modern city sees its economic "heart" shift to the outskirts of the city-region (Scott et al., 2001). Compared to the long inherited cities embodied by the old European model, the post-Fordist American metropolises were depicted as growing "inside out" (Soja, 2000), leading the way to a new and somewhat universal urban model of which Los Angeles was thought to be the norm rather than an outlier (Gordon, Richardson, 1996b).

However this interpretation of the nature of the deconcentration of business services has been controversial and was challenged by another proposal which has gained credit not only in Europe but in North America as well. If most authors agreed on the necessity to go past a centre-periphery analysis because of the dramatically new nature of urban and economic geography in metropolitan areas, it was still a common feature at that period to develop case studies dealing with only three or four types of spaces for the entire urban region: the CBD (or even the central city) and two or three surrounding rings (see for instance Gordon, Richardson, 1996a). Such broad perimeters made it very difficult to evaluate the form of deconcentration processes (i.e. polarised vs. dispersed). The deconcentration from the CBD to the rest of the metropolis is not sufficient to understand whether all peripheral locations are equally affected (dispersion or the 'Los Angeles model' hypothesis) or if only a limited number of clusters do indeed develop (polarised deconcentration hypothesis). Moreover, in terms of advanced producer services, almost all secondary poles emerging in the peripheries were defined by the total number of jobs and of office spaces (see

Garreau, 1991), regardless of the nature of the jobs. There is hardly any attempt to identify the economic sectors, functions and/or socio-professional categories of the activities being deconcentrated from the central area. It is therefore impossible to qualify the nature of the deconcentration process, except by some very fragmentary interviews. How then can one conclude that *advanced* services' firms are migrating to suburbs (Garreau, 1991)? One may reverse the proposal and see in the deconcentration process the selective concentration of advanced services in CBDs resulting from the relocation of low-skilled and low value-added business services outside the city. Paradoxically, far from being a sign of the decline of the centre, this would indirectly be an effect of its strength.

This is more or less what some Canadian geographers argued when discussing the so-called *edge cities* model (Coffey and Polèse, 1996). Rather than focusing on peripheral places and their spectacular growth in terms of employment or office spaces, these authors studied the characteristics of the firms remaining in the Montreal and Toronto CBDs. They observe an intensified specialisation in high value-added and international producer services. The CBDs remains – or even becomes – increasingly central for high level functions of the productive system. Empirical studies showed that two types of firms were - and one would argue are still – concentrating in the CBDs: first, the face-to-face-intensive firms dealing with coordination and management activities; second, large industrial, service and commercial companies' headquarters that benefit from the concentration of business services producers. These two groups are in permanent interaction: numerous meetings, informal and formal relationships attest to a business environment that has some characteristics of Marshallian or industrial districts. The firms leaving the central area of the metropolitan regions are of a different nature: they are the final demand-oriented businesses dealing with customers and/or the low value-added routine task workers (call centres, back-offices, etc.). Thus the necessity to carefully define the content of an often too evasive 'advanced services' category.

Following the North-American debate of the 1990s (death of cities *vs.* CBD reinforcement) many studies have been blossoming in the rest of the international scientific community (Europe, Australia, etc.). To some extent it is now accepted that in many cases, the deconcentration of jobs and the rebirth of central areas are not contradictory dynamics but can go together and even

support one another (see for instance Bouliane et al., 1998, Léo and Philippe, 1998, Bourdeau-Lepage and Huriot, 2005). Two recent studies have for example highlighted the strength of central districts in European metropolitan areas. Although they acknowledge the relocation of some advanced services in the peripheries of metropolitan areas (especially IT and telecom activities), both the COMET and the POLYNET research projects insist on the concentration of most information-intensive activities in traditional cores. In almost all of the Mega-City-Regions studied in the Polynet research programme for instance, the "First Cities" (London, Paris, Amsterdam, Zurich, Brussels, Frankfurt to name some of them) are *the* global gateways which polarise most of APS geography. A recent study on the telephone calls of firms in the Paris region confirms the international gateway role of Paris and La Défense within the entire Paris city-region (Halbert, 2004b). This tends to confirm the geographical organisation described by Bourdeau-Lepage and Huriot (2005) in French urban areas as the multipolar – monocentric pattern: although business services do tend to deconcentrate in secondary peripheral poles (multipolarity), most high-order services remain in what constitutes one economic centre (monocentricity). This poses directly the question of the formation of intra-metropolitan poles.

The summary overview of Fujita's various models for testing the development of multipolar urban systems (Fujita-Ogawa, 1982, Fujita and Krugman, 1995, etc.) made by Huriot (2003) indirectly shows the tension between different types of externalities in the spatial changes of urban geography. In Fujita and Krugman's work (1995), agglomeration forces are linked to market externalities (the size and variety of a market favours the concentration of firms) while other similar models develop non market externalities. In this latter explanation, two distinct – but potentially complementary – economic logics are analysed. The sectoral approach that has been used in most multipolar models (Fujita and Ogawa, 1982) relies on localisation externalities: agglomeration forces result from the higher economic profitability found by firms in locating close to identical firms. In a one-sector economy (in our case, the producer services sector), the concentrated deconcentration leading to a multipolar system would result from the necessity of producer services to be located together – for instance to exchange tacit information – while the transport costs of their specialised workforce act as

dispersion forces which, at a certain level, induce the development of secondary economic poles to minimise commuting costs. In a two-sector economy (industry and producer services for example), the multipolar geography might be constituted with one or more poles specialised in producer services and in a series of other secondary industrial poles: this results from differentiated sensitivity to localisation externalities between the two sectors.

However, this first sectoral approach is also balanced in another Fujita and Ogawa model by a functional organisation (1993). Agglomeration forces would result from Jacobs-type urbanisation externalities (Jacobs, 1969): "front-office" activities that are intensive in tacit information exchanges concentrate in the core of a given urban region while less information-intensive "back-office" activities can be located in peripheral areas to cut down location costs. The multipolar model might thus also result from a functional differentiation cross-cutting sectoral logics. In his overview of Fujita's models, Huriot concludes on the potential dynamic equilibrium resulting from the three types of agglomeration forces (market, localisation and urbanisation externalities): he sees the multipolar-monocentric pattern as one of the solutions to maximising firms' economies with the complex differentiations of sectoral poles (some of them being business services-oriented) doubled by a functional/hierarchical division where one or more (central) poles would concentrate high-order "front-office" functions. This paper compares the result of this model with analysing the effective re-configuration of the Paris metropolitan region.

## 2) Business services in the Paris Region : the multipolar agglomeration

Studies on the economic geography of the Paris region (mostly within the boundaries of the Ile-de-France region) have flourished in the last five years. They all observe the strength of employment deconcentration which affects all activities, including producer services, and to some extent, the development of a multipolar city-region. If it is admitted that the different poles have different economic profile, the nature of the differentiation and by extension of the underlying agglomeration forces is still debated. For some (Gilli, 2005), the multipolar geography is the result of a vertical spatial disintegration where poles are differentiated accordingly to their sectoral specialisation. Crague (2002) sees

conversely a tendency to sectoral indifferentiation: the different poles of the Paris region have a converging sectoral profile with the spatial disintegration process being thus more horizontal than vertical. Cragué develops the hypothesis that the growing weight of business services and wholesale trade sectors in the Paris region shows a different type of specialisation, one that is instead linked to functional changes occurring in the regional production system. In other words, Gilli tends to favour localisation externalities while Cragué stresses the role of urbanisation economies. I argue that this debate poses the question not only of the geography of producer services in the Paris region but also of the analytical tools used to observe intra-metropolitan economic changes.

The geography of producer services in the Paris region (based on the 1982, 1990 and 1999 censuses) shows that the traditionally central western Parisian districts are affected since the 1980s by a deconcentration process that is more polarised than dispersed and leads to the formation of a multipolar organisation (Alvergne and Coffey, 2002, Halbert, 2004, Bourdeau-Lepage and Huriot, 2005, Boiteux-Orain et al., 2006). Business services, banking and insurance industries and transport and telecommunications activities that I use as an approximation for the producer services category according to a sectoral definition (which I will criticise later in this paper) tend to strongly develop in two places which benefit more or less equally from the deconcentration trend: first, in the central and South part of the Hauts-de-Seine *département* (La Défense, Boulogne-Billancourt) close to the traditional Parisian CBD; second, in more peripheral poles on the outskirts of the agglomeration such as the Roissy airport and the five New Towns. The first dynamic enlarges the economic core and creates a large central metropolitan triangle; the second reflects the growing importance of peripheral locations.

<< insert Figure 1 and Figure 2 >>

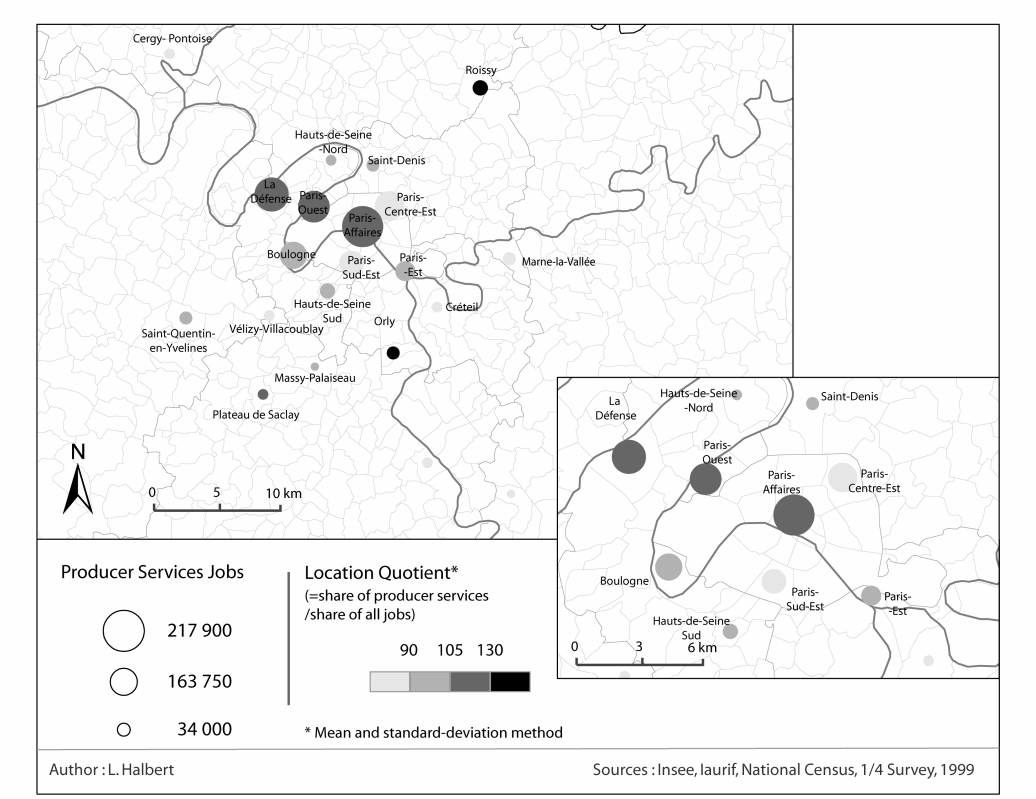



Figure 1 : Producer services poles in the Paris region

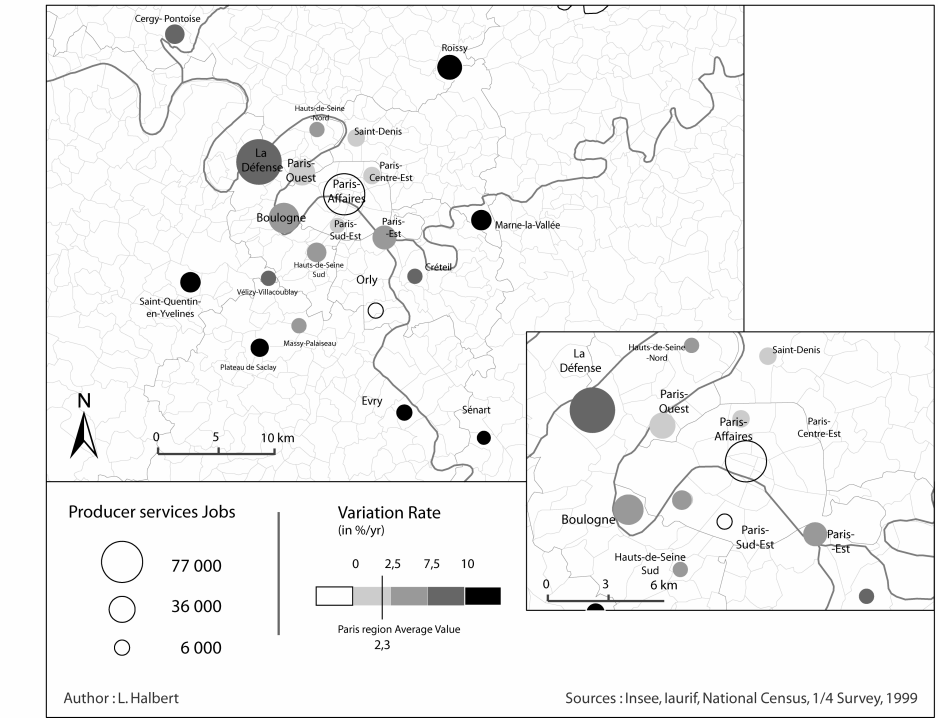



Figure 2: Employment change in the producer services poles of the Paris region (1982-1999)

However two points should be noted. First, these trends reflect dynamics that occurred during the two last decades of the 20th century. They seem to have come to a halt, or at least to some rearrangements, in recent years as the growth of business services is now happening in the central part of the Paris agglomeration, not only in the metropolitan triangle straddling Paris and the Hauts-de-Seine *département* but in a slightly larger perimeter that includes around 60 municipalities from La Défense in the West to Vincennes in the East, and from Montrouge in the South to St-Denis in the North. In the peripheries of the agglomeration, only the South-Western municipalities (around Saint-Quentin-en-Yvelines, Vélizy, Massy, Saclay or Evry) and the Roissy airport platform maintain a steady pace of growth.

Second, the observation is based on a large *sectoral* definition of producer services that includes a large set of activities ranging from high-skill consultants to basic clerical workers. This definition fails to grasp the specific geography of *advanced* producer services that is thought to be crucial to determine central places within a city-region.

This obviously raises the difficult task of questioning what these advanced producer services really are. Focusing in this paper solely on the service sector[1] I see two ways of tackling this issue. The most common approach is to limit the definition of *advanced* producer services to a selection of business services that are considered to be of "higher-order" (Coffey et al., 1996, Alvergne and Coffey, 2002, Halbert, 2004, Hall, Pain, 2006 among many others). Definitions in the literature would generally include financial services (banking and insurance), management, consultancy, advertising, accountancy, legal services, architecture, design, engineering, IT, R&D, etc. However, this approach – which is easiest to perform because most datasets are based on sectoral classifications that distinguish these various sub-sectors – tend to include many workers that are by definition not advanced in terms of skills, decision-making power or creativity. This might not be too important in SMEs but it becomes more crucial with larger firms where entire teams or offices can be dedicated to less skilled "back-office" activities dealing with the treatment of codified information (call centre,

[1] I have enlarged producer services to include white collar workers in industrial firms in other researches.

transcription work, etc.). Moreover, this sectoral approach tends to rule out some workers involved in lower-order business services whose everyday tasks are of advanced level (managers, engineers, designers that work in more basic business services firms). Last but not least, this type of approach tends to keep the analysis within the realm of a sectoral understanding of the production system, thus diminishing our ability to directly observe the *functional* differentiation occurring in a given metropolitan economy. For example, if one uses legal services, accounting or advertising firms to stand for the category of advanced producer services, it is difficult to determine whether their intra-metropolitan locations follow specific sector-based spatial logics or reflect a more transectoral functional organisation of advanced economic activities in the metropolitan area.

A second approach would try to differentiate producer services not by selecting high-order sectors that are supposed to represent advanced services but by looking at each producer services workers' everyday practice. In this analysis, the *advanced* producer services category would be made of all service producer workers in charge of conception, control and coordination functions in their firm, no matter the economic sector of their firms, whether it is logistic, IT or financial services.

The practical limit to this methodology is obviously the difficulty to access relevant data. In the French case, thanks to the updated functional analytical grid developed by the STRATES team in the 1990s, it is possible to use the detailed socio-professional dataset produced by the French Bureau of the Census (Insee). This database details workers' main activities in a classification of around 400 types of jobs. The data collection is done at each national census with a survey rate of a quarter of the active population thus allowing analyses at municipal level.

I have re-codified Insee's socio-professional classification into 14 major functions that constitute the production system (see Box 1). Although the names of the functions reflect a categorisation of the economy which tends to oppose "production" activities and more "collective" and often traditionally state-led functions (health, education, public administration), this analytical grid remains a powerful tool to improve our understanding of the changes occurring in the

functional and hierarchical geography of business services in the Paris region. It is this analysis which I now undertake.

Box 1: A functional tool to analyse the production system

Facing the difficulty to grasp functional changes occurring in the French economy, a team of economic geographers of the STRATES laboratory (Paris-1 La Sorbonne University) built an analytical grid to qualify major economic functions based on workers' main activities, regardless of their employers' sectors (Beckouche, Damette, 1993). Tested with the 1990 census, it proved a powerful tool to describe metropolitan processes, and was used for instance to study High-order Metropolitan Jobs (Julien, 1995). I updated this classification in 2002 to take into account new data delivered by the 1999 census (Halbert, 2002).

The classification distinguishes 5 major functions further divided into 14 sub-functions:

- Abstract Production function: conception, management and marketing jobs
- Material Production function: manufacturing, logistics and cleaning/maintenance jobs
- Services to households : retail and domestic services jobs
- Authority: Public Administration, Safety and Justice related jobs
- Human development: Health, Education, Culture related jobs.

## 3) Producer services in the Paris region: a functional geography

To qualify the functional geography of the 21 producer services poles observed in the Paris region (see Box 2), I first observe the Correlation Matrix (Table 1) that shows – for the producer services sector - each function's tendency to be co-located with other functions. The table indicates three major categories. First, management activities are often associated with legal and cultural activities but also with basic producer servicing jobs (catering, hotels); second, conception and marketing, but also to some extent public administration and education jobs are often found in the same places; third, material production

(logistics, manufacturing) and downstream functions (cleaning, selling, repairing) are closely located.

Box 2: 21 producer services poles in the Paris-region: methodological issues

The delimitation of producer services poles used in this paper was proposed in Halbert, 2004a and is based on a protocol using thresholds and aggregations methods at municipal level (for a discussion of the different methodologies on the delimitation of poles, see Halbert, 2004b or Boiteux-Guilain et al. 2006).

Main employment concentrations are first defined as the municipalities having more than 2 600 business producers jobs and a producer services density per built area over 4 (around 100 municipalities meet these two criteria). Then, municipalities are joined to constitute poles according to the criteria of spatial contiguity, the similarity of their economic profile (in terms of sectors and functions) and the identity of their recruitment area. This method led to the definition of 21 producer services poles in the Paris metropolitan region, counting for 8 % of the municipalities (Ile-de-France administrative boundaries) but for half of the regional employment and for more than 70 % of producer services jobs.

<< insert Table 1 (Correlation Matrix) >>

**Table 1 : Correlation matrix * of the 14 major functions for the 21 producer services poles in the Paris region (1999 data)**

| | Conception | Management | Marketing | Manufacturing | Logistics | Domestic Services | Retail | Cleaning, Repairing | Public Admistration | Safety |
|---|---|---|---|---|---|---|---|---|---|---|
| **Conception** | 1 | | | | | | | | | |
| **Management** | -0,25 | 1 | | | | | | | | |
| **Marketing** | **0,47** | -0,16 | 1 | | | | | | | |
| **Manufacturing** | -0,27 | -0,55 | -0,23 | 1 | | | | | | |
| **Logistics** | -0,56 | -0,48 | -0,44 | **0,57** | 1 | | | | | |
| **Domestic Services** | -0,32 | 0,27 | -0,07 | -0,20 | -0,31 | 1 | | | | |
| **Retail** | -0,39 | -0,11 | -0,34 | **0,30** | **0,30** | 0,19 | 1 | | | |
| **Cleaning** | -0,35 | -0,65 | -0,20 | **0,84** | **0,59** | 0,05 | **0,45** | 1 | | |
| **Public Admin.** | **0,43** | -0,33 | 0,24 | -0,24 | -0,29 | 0,14 | -0,22 | -0,06 | 1 | |
| **Safety** | -0,36 | -0,31 | -0,16 | 0,20 | **0,45** | 0,03 | 0,20 | **0,42** | -0,16 | 1 |
| **Justice** | -0,23 | **0,59** | -0,12 | -0,51 | -0,42 | **0,72** | 0,01 | -0,38 | 0,06 | -0,29 |
| **Health** | -0,21 | -0,07 | 0,04 | -0,08 | -0,07 | 0,20 | -0,02 | 0,07 | 0,23 | 0,29 |
| **Culture** | -0,07 | **0,32** | -0,01 | -0,26 | -0,48 | **0,84** | 0,21 | -0,08 | 0,17 | 0,00 |
| **Education** | -0,03 | -0,13 | -0,24 | 0,05 | -0,07 | **0,42** | 0,01 | 0,13 | **0,49** | -0,07 |

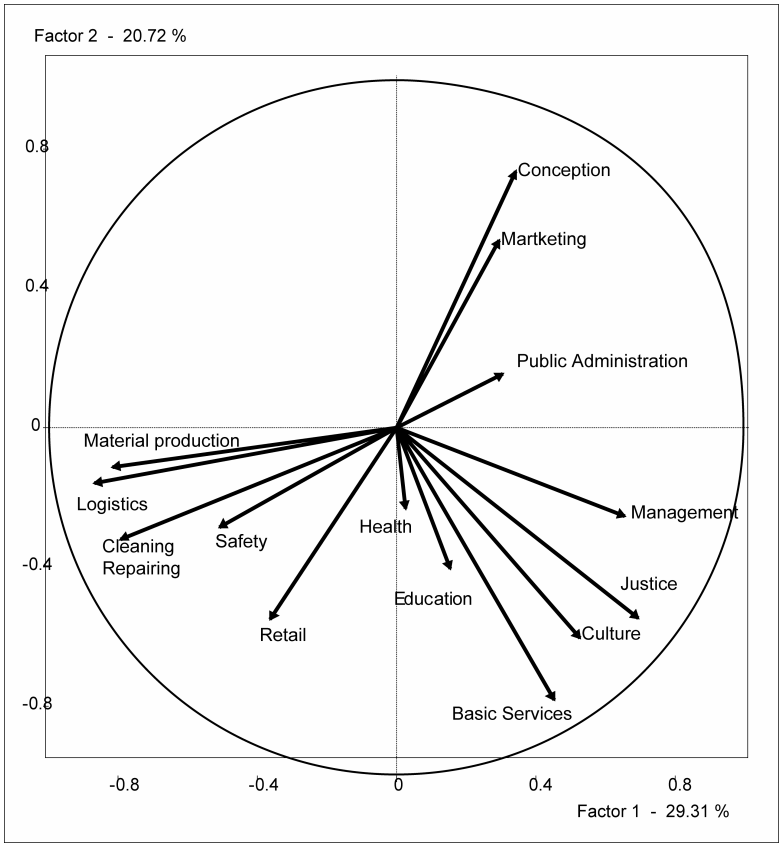
Sources : Insee, Iaurif, National Census, ¼ Survey, 1999

* In bold: significant positive correlation; Underlined: significant negative correlation

A Principal Component Analysis brings some insights on these first results. The first component opposes functions that deal with Abstract Production (management, conception, marketing, culture, law) to material production and downstream functions. The second component differentiates the management function at the negative pole and conception and marketing activities at the positive pole. The two following components – which weighs noticeably less than the two first ones - identify more punctual specialisations: factor 3 distinguishes poles having a specialisation in collective functions (public administration, education) vs. other abstract production centres while factor 4 isolates poles specialised in the health function.

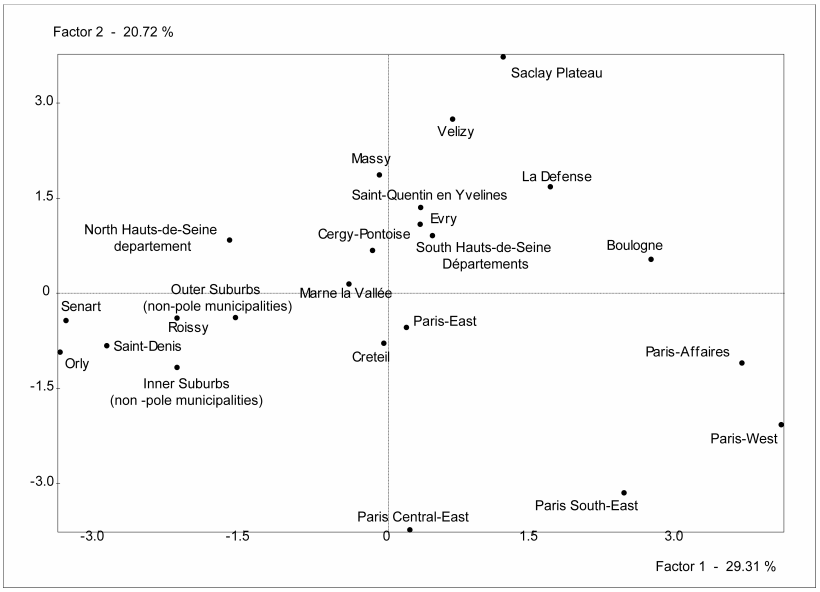
<<Insert Figure 3 and 4 >**>**

**Figure 3: Principal Components Analysis of producer services poles in the Paris region (1999 data): Axis 1 and 2 : correlation circle**




Sources : Insee, Iaurif, National Census, ¼ survey, 1999

**Figure 4: Principal Components Analysis of producer services poles in the Paris region (1999 data): Axis 1 and 2: poles' situation**




Sources : Insee, Iaurif, National Census, ¼ survey, 1999

The graph (Figure 4) representing the situation of each pole with regard to the two first components shows four major types of poles. First, in the positive pole of Axis 1, we find poles that are specialised in abstract production functions, some being more involved in the management function like the western districts of the Paris municipality (Paris - CBD and the Paris-West pole), and the other also having a more important share of marketing and conception functions (Boulogne and La Défense mostly). One notices that these 4 poles constitute the central metropolitan triangle which concentrates both in absolute and relative numbers a large part of producer services. The second group of poles is specialised in conception tasks, and more secondarily in the marketing function. It includes (upper half of the Figure 4) the Saclay Plateau, Vélizy-Villacoublay, Saint-Quentin-en-Yvelines, Evry and the South Hauts-de-Seine département pole. Massy-Palaiseau shares a similar specialisation even though it is slightly more oriented toward material production activities, probably because of the importance of logistics activities. If advanced producer services are to be seen not only as

the workers involved in management tasks but also in conception and marketing functions, then the South-Western quadrant of the Paris agglomeration does tend to be a key spot – even though much smaller than the triangle core – in the intra-metropolitan geography. The third group is made of poles that are specialised in more material and downstream production activities. They are located both in the inner suburbs and on the fringes of the Paris agglomeration. Some deal with logistic-related activities such as Sénart, Saint-Denis, Orly and Roissy, the two latter being the airport platforms of the Paris region, others are more specialised in basic producer services like cleaning, repairing and safety. Last, the remaining poles offer only very little specialisation (undifferentiated functional profile). It is the case of most Eastern poles within the Paris municipality but also of some New Towns on the outskirts of the agglomeration like Marne-la-Vallée or Cergy-Pontoise.

In conclusion, the Principal Component Analysis confirms the existence of a functional spatial differentiation in the producer services economy of the Paris region. The functional division distinguishes first the central metropolitan triangle which differs from all other poles and second, the South-Western quadrant poles that has a unique profile in the peripheries of the Paris agglomeration.

However, the result is not without limitations. Functional and sectoral variables appear not to be strictly independent: there are some correlations between the spatial organisation of some sectors and functions as for instance between financial services geography and management activities which are both located in the central triangle core or between the transport and telecoms sector and the logistic function, etc. One could criticise the method by arguing that the functional intra-metropolitan geography of producer services is an artefact resulting from a more sectoral differentiation. A detailed analysis for each different producer services sector shows that there is a functional differentiation *regardless of* the sector (Halbert, 2004). In other words, even though they have different geographical patterns (concentrated, dispersed or multipolar), all producer services sectors tend to share the same functional geography. The central

triangle poles concentrate management and marketing functions in almost all producer services sectors such as financial services (banking, insurance), real estate, advertising, transport, wholesale, renting agencies, temping agencies, cleaning services, etc. The conception function is mostly shared between the core triangle (especially in Boulogne and la Défense) and the South-Western quadrant (which is specialised in high-tech industries-related services). For some specific producer services, the conception function can be secondarily found in other poles: in the transport sector, Roissy and Orly do host some conception jobs, in the banking and insurance services, even though La Défense and Paris CBD dominates in total number of jobs, a specialisation is also observed in the Eastern part of Paris municipality and in the Marne-la-Vallée pole because of the concentration of some offices in the municipality of Noisy-le-Grand. Lastly, the material production and downstream functions correspond to a third geographical pattern: logistics, cleaning and repairing activities are the specialisation of some peripheral poles like Roissy, Orly or Sénart.

This functional division is further reinforced by a corresponding hierarchical differentiation as observed by the socio-professional status of producer services workers. There is indeed a strong correlation between abstract production functions (conception, management, and marketing) and the share of highly-skilled workers while more material production and downstream functions tend to be relatively dominated by blue collar workers.

At the end of this analysis, it is possible to draw a synthetic map of the producer services geography according to their functional and hierarchical specialisation (Table 2 and Figure 5). The central triangle core is *the* dominant advanced producer services location with an important share of financial services as well as legal, advertising, accountancy, advertising, human resources and real estate services, and more secondarily with restaurants and hotels partly servicing professionals on their business trips. The most dominant function is management which includes some basic clerical tasks but also strategic management as

measured by the large share of executive workers. More secondary functions corroborate the *Advanced* producer services specialisation with the legal function reflecting the concentration of lawyers, especially in the Western part of the Paris municipality, or the cultural function with the concentration of most major media-related firms. Paris-CBD and Western-Paris are emblematic figures of the triangle core while Boulogne and La Défense are a little more diversified in terms of abstract production functions, probably because they also host a number of high tech firms (telecoms, IT, engineering) as well as commercial branches of international firms.

The South-Western quadrant poles are more specialised in high tech industries-related services, confirming the technopolitan profile of this part of the Paris region (Halbert, 2007). IT, R&D, telecoms and industrial engineering services are predominant. The high share of abstract production workers is not linked to management activities as is the case in the central triangle core but to the importance of conception activities. In the Saclay Plateau, the conception function and more secondarily the public administration and education functions, dominates, the two latter reflecting the role of public researchers in the R&D orientation of the pole. In the surrounding poles of Saint-Quentin-en-Yvelines, Massy-Palaiseau, Vélizy-Villacoublay and in the South part of the Hauts-de-Seine département the profile is only slightly more diversified as Saint-Quentin has a higher proportion of management activities. One might notice that if both the central triangle core and the South-Western quadrant are dedicated to *advanced* producer services, the latter is much more linked to the geography of high tech industries that rely on large inputs of knowledge in their manufacturing processes (defence, electronics, aeronautics) while the former is more linked to the servicing of other services or headquarters.

The third type of poles is specialised in the material and downstream functions. These poles gather more basic producer services and show a less qualified workforce with a higher proportion of blue collar workers and employees. They mostly deal with the transportation of material goods (transport services, energy and water distribution, wholesale trade) and

with the delivery of basic services such as cleaning, security and repairing. Their location within the metropolitan area corresponds to two types of places. First, probably because of historical industrial specialisation, some inner suburbs' municipalities that used to be strongholds of the manufacturing belt surrounding the municipality of Paris in the first half of the 20th century have kept some forms of specialisation in material production activities. It is the case for the Saint-Denis pole even though the arrivals of large offices and MNCs' headquarters are fast changing its profile which is evolving toward more abstract production functions (especially management and basic administrative tasks). The second location factor reflect land access considerations: the availability of land at low cost price and in close proximity to transport infrastructures (major roads, airports, etc.) drive the deconcentration of some logistics firms and more generally of some material production activities to peripheral spaces. This explains the specialisation of Sénart, the two airports and many municipalities located in the fringes of the agglomeration.

The last group is made of poles that do not have a strong functional specialisation. Their profile is thus not so much one of highly specialised economic centres but of diversified urban poles. It is both the case of some new towns and of some poles located within the Paris municipality.

<<Insert table 2 >>

**Table 2: Producer services poles typology in the Paris region: sector, functions and status of workers**

| Functions / Sectors | Management | Conception Marketing | Material Production and Downstream activities | No specialisation |
|---|---|---|---|---|
| **Business services** | Paris Affaires<br>Paris Ouest | La Défense<br>Boulogne | | |
| **High tech industries** | | Saint-Quentin-en-Y.<br>Massy<br>Hauts-de-Seine-Sud<br>Vélizy-Villacoublay<br>Plateau de Saclay | | Cergy-Pontoise |
| **Basic business services** | | | Saint-Denis<br>Hors Centres<br>Petite Couronne<br>Hors Centres<br>Grande Couronne | Marne-la-Vallée |
| **Transports** | | | Sénart<br>Hauts-de-Seine-Nord<br>Roissy<br>Orly | |
| **No specialisation** | | | Paris-Centre-Est | Evry<br>Paris-Sud-Est<br>Paris-Est<br>Créteil |

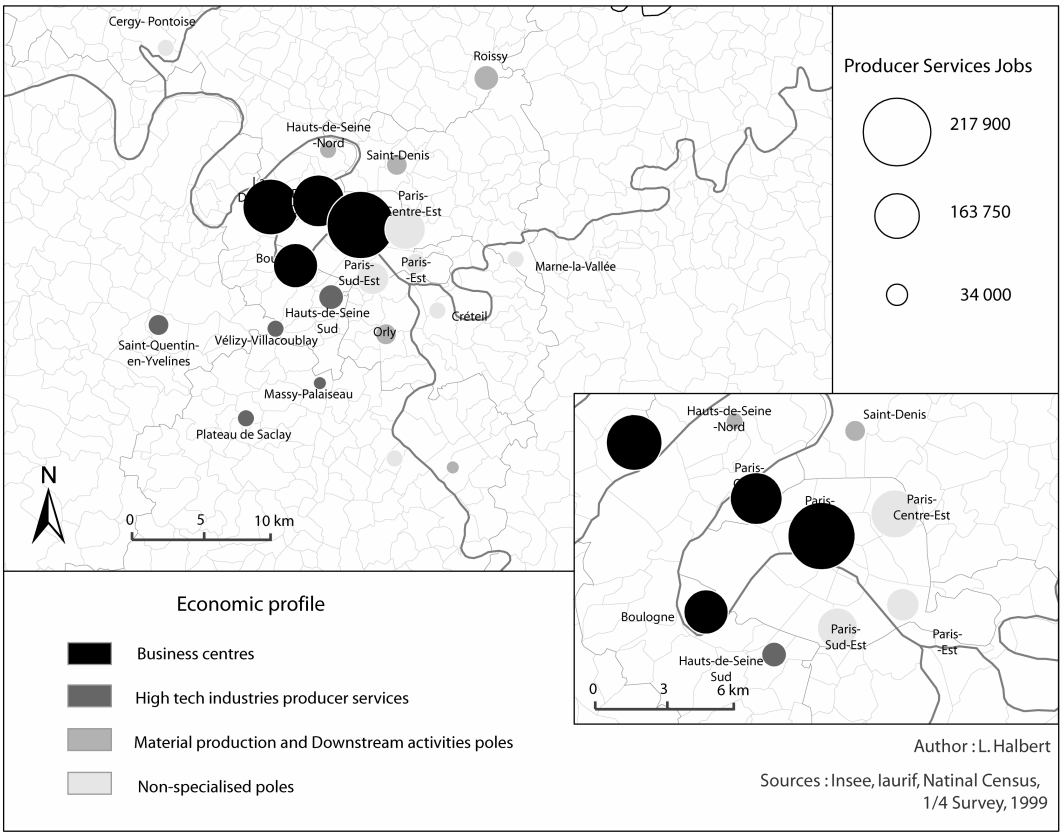
Sources : Insee, Iaurif, National Census, ¼ survey, 1999

Legend :

| |
|---|
| Executives |
| Executive and intermediate level |
| Blue collar |
| No speialisation |

<<insert Figure 5>>

**Figure 5: Typological map of producer services poles in the Paris region**



## Conclusion

The geography of business services has seen important reconfigurations. The traditional situation where a dominant CBD was limited to the western districts of Paris has dramatically changed since the 1980s. Both deconcentration and concentration processes are at work. During the 1980s and 1990s business services have re-located not only to the neighbouring inner suburbs, like the Western Hauts-de-Seine département and thus shaping the central metropolitan triangle, but also in more distant new towns and peripheral poles developed on the fringes of the agglomeration, 15 to 30 kms away from Paris. In both cases however, deconcentration is much more polarised than dispersed. Since the mid-1990s, the deconcentration process has been more spatially limited to the dense central part of the agglomeration, following what could be described as a peri-central spill-over.

Meanwhile, one observes a qualitatively selective concentration with *Advanced* producer services favouring two particular locations in the agglomeration: first, and most important in terms of job numbers, the central triangle core that links the traditional Paris CBD to La Défense and Boulogne / Issy-les-Moulineaux municipalities; second, the South-Western quadrant developing around Saint-Quentin-en-Yvelines new town in a large sub-regional area.

These changes reflect a spatial reorganisation that is not so much sectoral as functional. Sectoral specialisations between the economic poles of the Paris region might indicate that some producer services do benefit from localisation externalities (pecuniary, technological) resulting from the close proximity to other similar firms. However, a detailed analysis of the profile of the 21 major business services poles in the region shows the predominance of a functional and hierarchical division of tasks as already observed in other sectors of the economy by Aydalot in the 1960s (1986) or by Beckouche et al. (1997) in the 1980s. This would tend to confirm the importance of urbanisation externalities in the explanation of contemporary agglomeration processes.

This raises the question of the location of the central places in the Paris regional economy. I would argue, following Bourdeau-Lepage and Huriot's

proposal (2005) that the dense central part of the agglomeration remains *the* central place. Of course, the development of the technopolitan South-Western quadrant does induce a specialisation in advanced producer services and in high level abstract production tasks such as conception, but, this part of the Paris region is still highly specialised in high tech industries and R&D activities which give a very specialised profile to this sub-regional area. On the contrary, the municipalities in the centre of the agglomeration are much more emblematic of the advanced producer services activities (conception but also management and marketing). This makes the central triangle core the primary central place, creating the monocentric pattern described in the literature. This result might be enlarged to describe the multipolar-monocentric pattern as a very common feature in European cities (see Pain, Hall, 2006 for example in North-Western European city-regions). Based on the Paris city-region study, I make the hypothesis that this is the result of a functional division of labour that is intensified by structural changes with the advent of the information economy and the development of ICTs. The reinforced sensitivity to some types of information and the possibility to dissociate functions within a particular firm or between linked firms tends to favour the general functional division of labour. In this context, one can make the hypothesis that intra-metropolitan reorganisation may be partly animated by the same set of forces that fuel the inter-metropolitan division of tasks occurring at the same time.

Going back to the intra-metropolitan issue, the Paris city-region case study reveals first that these spatial logics are not linear: the deconcentration of producer services is now much more restricted to the municipalities surrounding the central triangle core, thus diminishing the descriptive efficiency of the multipolar pattern hypothesis in favour of a peri-central model of development. Second, the changes happening in the Paris region also indicate a more complex dynamic which goes past the industrial or organisational logics of producer services' firms. Most poles that have emerged and consolidated, both in the Inner suburbs or on the fringes of the agglomeration, have very often been highly supported by public bodies and private developers. La Défense, the New Towns, the Roissy airport platform, the technopolitan South-Western quadrant, the new poles around the central triangle core like St-Denis have all benefited, noticeably at the very beginning of their life cycle, how public investments and

often land use jurisdictions from local municipalities (especially in the last decade), départements, the administrative Ile-de-France region and from the State which has always shown a particular interest for the capital city-region (La Défense, the New Towns or the recent Stade de France were all State-led projects). At the same time, real estate developers and investors seem to have played an important – but under-recognised – role in the development of new economic poles. The success of La Défense was also linked to real estate promoters like Christian Pellerin; so was Roissy or Orly business parks linked to the Silic group or the recent development of inner suburbs municipalities' office parks dependent on some investors' locational choices (see the role of the insurer Generali in St-Denis).

These selected example tend to enlarge the scope of most spatial economy models when addressing the mechanism for formation of metropolitan spaces (which are mostly based on firms' and workers' locational decisions) to take into account other actors as proposed in other works (Henderson and Mitra, 1996, Zang and Komei, 1997, 2000, Crouzet, 2003). I argue for instance that detailed analyses of real estate developers' strategies (promoters, investors, etc.) are still to be undertaken to develop a more encompassing theory of the production of metropolitan spaces. As firms outsource their office park, the role of real estate developers is becoming more important. I make the hypothesis that they tend not only to (partly) follow their clients' locational logics but also to superimpose their own objectives which are considerably dependent on structural changes happening in this particular industry (financialisation and globalisation).

All in all, advanced producer services, although important to understand the way structural economic changes affect city-regions, require to contextualised in a broader systemic framework within which a larger set of actors can be studied in terms of their activities and of their interactions.

Reference:


1. ABLER, R., (1970), "What Makes Cities Important", *Bell Telephone Magazine*.
2. ALVERGNE, C., COFFEY, W., (2002), Intrametropolitan Patterns of High Order Business Service Location: a comparative study of Seventeen Sectors in Ile-de-France", Urban Geography, 39(7), pp. 1143-1163.
3. ARCHER, W., SMITH, M., (1993), "Why do Suburban Offices Cluster?", *Geographical Analysis*, 25, pp. 53-64.
4. AYDALOT P., (1986), "Les technologies nouvelles et les formes actuelles de la division spatiale du travail", *Cahiers du Centre Economie-Espace-Environnement*, n°47, p. 55.
5. BECKOUCHE, P., DAMETTE, F., (1993), "Une grille d'analyse globale de l'emploi', *Economie et Statistiques*, 270 (10), pp. 37-50.
6. BECKOUCHE P., DAMETTE F., VIRE E., (1997), *Géographie économique de la Région Parisienne*, Paris, Direction Régionale de l'Equipement d'Ile-de-France.
7. BOITEUX-ORAIN, C., GUILLAIN, R., LE GALLO, J. "Changes in spatial and sectoral patterns of employment in Ile-de-France, 1978-1997 ", *Urban Studies*, 2006, vol. 43, n° 11, 2075-2098
8. BOULIANNE, L., LEO, P., PHILIPPE , J., (1999), *Services et métropoles : formes urbaines et changement économique*, Paris, L'Harmattan, 300 p.
9. CASTELLS, M., (1996). *The Rise of the Network Society, The Information Age: Economy, Society and Culture,* Vol. I. Cambridge, MA; Oxford, UK: Blackwell
10. CERVERO, R., (1989), *America's suburban centers*, Boston, Unwin Hyman, 232 p.
11. COFFEY, W., DROLET, R., (1993), *Les services supérieurs dans la région métropolitain de Montréal, 1981-1989 : Importance stratégique, croissance et dynamique spatiale*, Rapport d'Etude INRS, 138 p.
12. COFFEY, W., POLESE, M., (1984), "La localisation des activités de bureaux et des services aux entreprises", *Revue d'Économie Régionale et Urbaine*, 5, pp. 717-730.
13. COFFEY, W., POLESE, M., (1996), "Examining the thesis of CBD decline: evidence from Montreal metropolitan area", *Environment & Planning A*, 28, pp. 1765-1814.

14. COFFEY, W., SHEARMUR, R., (2002), "Agglomeration and dispersion of high order service employment in the Montreal metropolitan region", *Urban Studies*, 39, pp. 359-378.
15. CRAGUE, G., (2002), "L'économie métropolitaine au-delà de la spécialisation sectorielle. Essai d'identification des économies d'agglomération de la région Ile-de-France à partir de l'étude de la structure urbaine", Revue d'Économie Régionale et Urbaine, 2002, 3, pp 449-470
16. CROUZET, E., (2003), "Les marchés de bureaux et les territoires métropolitains", Espace Géographique, 2, 141-154
17. DANIELS, P., (1991), *The changing geography of advanced producer services*, London, Belhaven Press.
18. DANIELS, P., ILLERIS, S., BONAMY, J., PHILIPPE, L., (1993), *The Geography of Services*, London, Frank Cass.
19. DERUDDER, B., (2006), "Where we stand? A decade of Empirical World Cities Research", GaWC Research Bulletin 198
20. DURANTON, G., PUGA, D., (2000), "From sectoral to functional urban specialization", NBER, Working Paper.
21. HENDERSON, V., ARIMADAM, M., (1996), "The new urban landscape: Developers and edge cities", *Regional Science and Urban Economics*, 26, 613-643
22. HURIOT, J-M., (2003) *Services aux enterprises et nouveaux centralités urbaines*, Final Report Programme de recherche DARES-PUCA, LATEC, Dijon, 123 p.
23. FESER, E., (2003), "What regions do rather than make: a proposed set of knowledge-based Occupation clusters", *Urban Studies*, 40, pp. 1937-1958.
24. Fujita, M. and H. Ogawa. 1982. Multiple equilibria and structural transition of nonmonocentric urban configurations. *Regional Science and Urban Economics* 12, 161–96.
25. FUJITA, M., KRUGMAN, P., (1995), "When is Economy Monocentric? Von Thunen and Chamberlin unified", *Regional Science and Urban Economics*, 25, 505-528
26. GARREAU, J., (1991), *The edge city : life on a new frontier*, New York, Doubleday.
27. GLAESER, E., (1998), "Are cities dying?", *Journal of Economic Perspectives*, 12(2), pp. 139-160.

28. GILDER, G., (1995), *FORBES ASAP*, 27 Février, p. 56
29. GILLI, F., (2005), "Is central Paris still that rich ?", Working Paper. http://129.3.20.41/eps/urb/papers/0507/0507001.pdf
30. GOE, R., LENTNEK, B., MARCPHERSON, A., PHILLIPS, D., (2000), "The role of contact requirements in producer services location", *Environment & Planning A*, 32, pp. 131-145.
31. GORDON, P., RICHARDSON, H., (1996a), "Beyond polycentricity: the dispersed metropolis (Los Angeles 1970-1990)", *Journal of the American Planning Association*, 62(3), pp. 289-295.
32. GORDON, P., RICHARDSON, H., (1996b), "Employment decentralization in US metropolitan areas: is Los Angeles an outlier or the norm?", *Environment & Planning A*, 28, pp. 1727-1743.
33. GOTTMANN, J., (1961), *Megalopolis: the urbanized North-eastern Seabord of the United States*, New York, 20th Century Fund, 810 p.
34. HALBERT, L., (2004a), "The intrametropolitan decentralization of Business Services in the Paris Region: Patterns, Interpretation, Consequences", *Economic Geography*, 80, n°4, pp. 381-405.
35. HALBERT, L., (2004b), *Densité, desserrement, polycentrisme et transformation économique des aires métropolitaines. Interpréter la concentration des activités d'intermédiation dans la zone centrale de la région francilienne.* Ph. D. thesis, Paris-I University, 342 p.
36. HALBERT, L., (2007, forthcoming), "From Dirigiste to Interactive Innovation Systems: three paths to technopolitan development in France", in Ramachandraya et al., *Dynamics of High Tech Urban Spaces: Asian-European Perspectives.*
37. HALL, P., PAIN, K., (2006), *The polycentric metropolis*, *Earthscan, 256 p.*.
38. JACOBS, J., (1961), *The Death and Life of Great American Cities*, New York. Random House.
39. JACOBS, J., (1969), *The Economy of cities*, New York. Random House.
40. JULIEN, P., (1995), "French towns, higher urban functions and strategic employment", *Urban Studies,* 32(2)
41. KLOOSTERMAN, R., MUSTERD, S., (2001), "The Polycentric Urban Region: towards a research agenda", Urban Studies, 38(4), 619-629
42. LANG, R., (2003), *Edgeless cities. Exploring the elusive Metropolis*, Brookings Institution Press, 154 p.

43. LEO, P., PHILIPPE , J., (1999), "Tertiairisation des métropoles et centralités", Revue d'Economie Régionale et Urbaine, 1, 63-84
44. MARSHALL, A., (1890), *Principles of Economics : an introductory text*.
45. MULLER, P. O', (1981), *Contemporary Suburban America*, New Jersey, Prentice-Hall.
46. MULLER, P. O', (1997), "The Suburban Transformation of the Globalizing American City", *The Annals of the American Academy of Political and Social Science*, pp. 44-58.
47. PORAT M., (1977), *The Information Economy*, New York, USA, Halsted Press.
48. REICH, R., (1991), *The work of* Nations, Vintage Books.
49. SASSEN, S., (2001), *The Global City: New York, London, Tokyo*, New York, Second Edition, Princetown University Press.
50. SCOTT, A., SOJA, E., AGNEW, J., (2001), *Global City-regions: Trends, Theory, Policy*, Oxford, Oxford University Press.
51. SOJA, E., (2000), *Postmetropolis : critical studies of cities and regions*, Oxford, Blackwell, 440 p.
52. STANBACK, T., (1991), *The New Suburbanization : challenge of the central city*, Oxford, Westview Press / Boulder.
53. TAYLOR, P., (2003), *World city Network: a global urban analysis*, London, Routledge.
54. VELTZ, P., (1996), *Mondialisation, Villes et Territoires. L'économie d'archipel*, Paris, Presses Universitaires de France, 262 p.
55. WEBBER, M., (1968), *The Post-City Age*, Fall, Daedalus.
56. Zhang , Y, Komei, S., (1997), "Effects of subcenter formation on urban spatial structure", *Regional Science and Urban Economics*, 27(3), 297-324
57. Zhang , Y, Komei, S., (2000), "Spatial structure in an open city with a subcenter", Annals of *Regional Science*, 34(1), 37-53

| Function | Detailed function | Description | Exemples |
|---|---|---|---|
| Abstract production | Conception | Researchers, engineers and technicians involved in R&D activities | R&D engineers, architects, technicians in research laboratories |
| | Management | Senior and junior executive, technicians and employees employed in administrative, financial, accountancy, management, human resources activities | Senior executive in industrial, commercial or service firms, personal assistants |
| | Marketing | Senior and junior executive in advertising, marketing, wholesale activities | |