

NEW SPACES FOR THE NEW ECONOMY: New patterns for the location of advanced services in post-Fordism

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Abstract

Previous phases of capitalism produced specific spatial patterns of location and agglomeration of economic activity in different urban contexts around the world. This is particularly true for sophisticated service firms, which used to rely on specific and scarce technical and spatial advantages found almost exclusively in city centres. During the 20th century, the general, albeit uneven expansion and spread of urban technical networks allowed sophisticated services to locate more flexibly. In late capitalism, as Fordism gives way to Post-Fordism, the character of spatial agglomeration of economic activity is bound to change. Knowledge-intensive service industries have a different logic for agglomeration than industrial activities used to have. They still seem to need to agglomerate and cluster, but for different reasons and in completely different ways.

This paper reviews current theories on the agglomeration and location of advanced services and investigates the hypothesis that the shift towards a knowledge-based economy and the emphasis on the production, trade and diffusion of knowledge by advanced producer services is triggering specific spatial-structural transformations in cities under globalization. In order to explore this hypothesis, this paper analyses empirical evidence on the location patterns of command activities in the form of advanced producer service firms and transnational firms headquarters in São Paulo, a thriving global city in a rapid growing economy. It analyses the impact of location choices in urban structural transformation; it also explores convergences and divergences in spatial development produced by place-specific conditions. Moreover, it illustrates how governments have acted to provide the spatial conditions for the location and agglomeration of command activities by carrying out large urban projects in partnership with the private sector.

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Introduction

This text addresses the issue of the location dynamics of knowledge-intensive firms in the context of an emergent knowledge-based economy. The central hypothesis is that the shift towards a knowledge-based economy and the emphasis on the production, trade and diffusion of knowledge is triggering spatial transformations in cities under globalization.

The main question this paper aims to answer concerns the convergence of spatial structural patterns. Are there urban spatial developments typical of the new economy? This question stems from the fact that previous phases of capitalist production have produced recognisable spatial-structural patterns of location and agglomeration of economic activity in different urban contexts. This is particularly true for sophisticated service firms, which used to rely on specific spatial advantages to be found exclusively in the centre of cities, where technical urban networks and services used to be concentrated. Previous phases in capitalism triggered convergence in form and structure of cities connected to global circuits. Following this logic, the expansion and generalisation of urban technical networks during the 20th century has allowed for an increasing flexibility in the location of sophisticated services, producing new polycentric urban structures in apparently very different urban settings. This is different from historically produced polycentricity, which is the result of the development of independent urban nodes in a given region, for instance.

Our underlying assumption is that one of the determining factors for this kind of urban polycentric structures to emerge in post-Fordisms has been the need for knowledge-intensive industries (i.e. advanced producer services) to locate closer to new nodes of multi-modality and connectivity, where conditions of accessibility and connectivity are generally much better than in traditional central business districts and where there was space for new development. This argument is closely related, and in fact complements, theories on the global city. Instead of regarding the global city (or the global city-region, for that matter) as a uniform spatial unit, we add a specific spatial component to the idea that global cities are increasingly interconnected: some parts are more connected than others and this has an impact on the emergence of new business centralities. The formulation is as follows: if global cities are increasingly interconnected by all kinds of flows running along physical and functional networks, a different nodal spatial structure must emerge because of new connectivity opportunities and requirements. This happens because the old mono-centric model does not allow for an efficient networked organisation of functions and flows. Nodes located in points of multimodality, often placed at the outskirts of globalizing cities, are more likely to function as main articulators of such flows (Flows are understood here as a very general category, referring to exchanges of all sorts among global cities: financial flows, information flows, people's flows, etc.).

Furthermore, the generalisation and expansion of urban technical networks have allowed for an increasingly networked relationship between various nodes composing what is conventionally known as city-regions. Scott (2001) defines global city-regions as dense nodes of 'human labour and communal life', a notion that

stands in opposition to the idea that the world has become a borderless space of flows. For Scott, 'global city regions are distinctive sub national (i.e. regional) social formations whose local character and dynamics are undergoing major transformations due to the impacts of globalisation'. They are also the *loci* of new experiments in local political mobilisation (Scott 2001).

Theoretical framework

New flexible and dispersed modes of production have triggered an unprecedented intensification of transnational financial flows in the form of Foreign Direct Investment (FDI), triggered by the incursion of large transnational companies into new markets. The dispersal of production and the increasing complexity of business operations were accompanied by the concentration of business management in nodes of command located in cities that offer comparative advantages (Porter 1998) related to their geographic position, their spatial make-up and their socio-economic composition. These 'ingredients' can be shortly explained as belonging to a path-dependence process: the dependence of the outcome of a dynamical process defined by historical events. These 'nodes of command' have been identified as 'global cities' (Hall 1984; Friedmann 1986; Sassen 1991; Sassen 1994).

But discussing 'global cities' as *loci* of command activities seems to be insufficient from the point of view of territorial management and planning, and it is certainly ineffective to understand the real implications of an emerging knowledge economy for the spatial organization of cities and regions. This happens because the intrinsic networked character of command activities and the spatial changes they trigger seem to require larger scales of spatial analysis.

The analytical emphasis has traditionally been placed on the role of cities as nodes of command and their position in a hypothetical global hierarchy of cities. Less has been said about the actual geography of economic activity, that is, the geography stemming from new forms of production and interaction, or stemming from an increasingly knowledge-based economy with specific spatial requirements. After all, the term 'nodes of command', much used in order to explain the character of global cities, implies a concentration of skills, abilities, information and knowledge that need to be spatially articulated. This articulation of command is translated in the ability to take decisions and command extended functional and production networks over larger territorial units.

In other words, the 'global city' hypothesis has initially failed to identify spatial qualities and specific spatial make-ups as important factors for the development and agglomeration of command activities in the new economy. It has also failed to identify the importance of the region as a relevant unit of analysis, and much emphasis was put on the study of cities as disconnected from complex networked regional settings. Scott (2001), points out at the recent disposition to argue this line of analyses, by insisting on the 'locational

rootedness of world capitalism in regional production complexes, combined with the continued unevenness of development across the globe' (Scott 2001).

Cooke and Piccaluga (2006), following Castells and others, have recognised that the Internet erases spatial barriers creating new kinds of proximities (i.e. cognitive proximity, relational proximity and organisational proximity), but explicitly assert that geographical proximity is still prevalent in the new economy. Hence the importance of successful regional settings that host global talent pools, large varieties of business clusters, relevant research networks and knowledge outsourcing platforms (exporting firms). Complex networked regional settings have been recognised.

Regional productive complexes are also important because of their laboratory-like institutional capabilities of policy experimentation. In this instance, regions resemble laboratories inasmuch as they offer opportunities for observation and policy implementation (Cooke and Piccaluga 2006), because they allow for extended clusters of interaction and innovation. A coherent planning framework might allow for comprehensive spatial intervention in the form of large infrastructural and renewal projects at the regional level, which might give even more coherence to this cluster. In other words, it might be possible to plan the globalizing city-region in order to facilitate the production, diffusion and production of knowledge.

Methodology

Following the ideas explained above, we have sought to analyse spatial transformation in two significant, yet very distinct global city-regions: The Randstad-Holland and the Metropolitan Area of São Paulo. The choice of cases is related to their economic position respectively at the core and semi-periphery of modern capitalism. This provided us with interesting insight on how global processes related to the emergence of the knowledge economy are affecting global city regions in different economic contexts. Because of the limitation in space, this paper describes only one case (São Paulo) in detail.

São Paulo is a vast expanse of urbanised territory, with one single municipality accounting for almost 60% of the total population and an even larger amount of the total GDP of the area. The region, however, does have a polycentric structure and the patterns of distribution of economic activity and especially the pattern of location of knowledge-related firms is very uneven. Despite of all this, a large number of convergences in the locational patterns of APS could be found in both city-regions.

| | Core Municipality | Metropolitan Area | Macro-metropolis | Brazil |
|-----------------------------|-------------------------|-------------------------|------------------------|---------------------------|
| Area | 1.522 km ² | 7.943 km ² | 15.113 km ² | 8.514.876 km ² |
| Population (milions) | 11.450 ** | 22.105** | 28.375** | 183.383 * |
| Population density | 7776/km ² ** | 2778/km ² ** | 1877/km ² | 22/km ² |
| GDP (US\$ bi)* | 123 | 180.8 | 226.8 | 882 |
| * IBGE 2005 | ** IBGE 2008 prognosis | | | |

Table 1: São Paulo in numbers. Source: IBGE (various years).

As a pilot approach for the analysis of location patterns of advanced producer services, a list of 100 global APS enterprises compiled by GaWC (Globalisation and World Cities Study Group and Network, Loughborough University, UK) was used. The list included firms in Advertising, Accountancy, Insurance, Finance, Law and Business Management firms (Taylor 2002). The list was dressed based upon:

1. Published lists of largest firms of each sector;
2. Availability of information on each firm;
3. Global coverage, that is, each firm must be clearly 'global' in coverage, which means offices in at least 15 cities across the world, of which there must be at least one in each of the most relevant economic global arenas, North America (the Dollar area), Western Europe (the Pound/Euro area) and the Pacific Rim (the Yen area). The sample, although small, is of special significance, because it includes the most 'globalized' advanced producer service firms. In other words, it lists global companies that are most likely to promote exchanges of human resources, knowledge, technology and investment between globalizing cities.

Subsequently, interviews with developers and agents from the public sector in both case studies were conducted in order to establish general trends and identify (often subjective) perceptions of the processes at hand. Relevant agents from the private sector (firms) were also interviewed. Subsequently, a set of spatial parameters was established in order to analyse the case studies. This set of spatial parameters was extracted from literature and complemented by the empirical analysis of locational trends. The aim of the spatial analysis on the location pattern of command functions was to unveil possible spatial advantages for the agglomeration of certain activities.

Advanced producer services and the knowledge-economy

The nature of services is exceptionally varied. Services include highly sophisticated, knowledge-based activities as well as simple deeds. In economics, a service is generally conceived as the non-material

equivalent of a good, but this definition has been lately challenged by scholars who claim that it is impossible to separate the amount of services embedded in the production of goods (Edvardsson, Gustafsson et al. 2000). However, service provision has been traditionally defined as an economic activity that does not result in ownership, what differentiates it from providing physical goods (Durlauf, Blume et al. 2008). Providers of services, as opposed to the producers of goods or commodities, participate in economic activity by supplying some level of knowledge, skill, creativity, and experience that will have an impact on production or consumption.

In short, providers of services are providers of knowledge, be it explicit or tacit knowledge (the product of experience and practice). Naturally, not all services involve sophisticated knowledge and some basic services can be performed with a minimum of acquired knowledge.

A rough distinction can be made between consumer services providers and producer services providers. Producer services are those services intended to companies and organisations as opposed to services destined to household consumption. They can also be classified as ‘simple’ and ‘advanced’ services, according to the number and complexity of operations involved, as well as the level of skills, creativity and knowledge implicated. In this paper, we emphasize the high-end of knowledge production and use in service provision, that is, the highly sophisticated services provided by advanced producer services (APS).

Briefly put, advanced producer services (APS) are the services responsible for the organisation, management, distribution, and securing of production. Banking, Law, Consultancy, Accountancy, Insurance and Advertising are generally described as the main APS (Taylor, Walker et al. 2002), but the list may also include other high-level services, such as communication technology management, business management, marketing communications, to cite but a few. Activities included in this sector are connected to the organisation and management of corporations at the highest level, but they do not always rely on explicit knowledge.

APS might be considered the most dynamic sector of the economy today, because they are responsible for the organization, management, and securitization of global flows of all sorts, generating a large amount of output and accounting for large portions of advanced economies. In order to do so, they have to build up, manage and circulate an enormous amount of information and knowledge derived from practice (tacit knowledge) and from research (explicit knowledge). To do that, they must make use of the most advanced information and telecommunications technology, thus propelling the development of the ICT sector. However, they also need to promote the mobility of individuals who are repositories of tacit and/or explicit knowledge related to managerial, consultancy or organisational activities. It is safe to assume that this is bound to produce a large re-organisation of managerial activities at a global level and perhaps a reorganisation of the spatial support for these processes at the local and regional levels.

For the British Economic and Social Research Council (ESRC 2008), ‘in today's global, information-driven society, economic success is increasingly based upon the effective utilisation of intangible assets such as knowledge, skills and innovative potential as the key resources for competitive advantage’. Clearly, a knowledge-based economy does not rely only on the explicit knowledge produced by oriented research and academia, but also on the tacit knowledge developed as new work by corporations and firms. New work, as described by Jacobs (1969) and a string of followers, is the product of tacit knowledge accumulated through practice, trial and error, unexpected spillovers and derived work. Although new work does often originate from formal research and development activities, it also originates from particular communities of practice in commercial and corporative environments. This process can be seen in the increasing specialisation and diversification of high-end producer services. In other words, the continuous addition of new work through the sophistication and development of new services characterises advanced producer services and puts them at centre stage in the new knowledge economy. This is illustrated by the variety of services offered by a large firm such as MacCann-Erickson, for instance (table 1)

Therefore, we avoid the traditional definition of knowledge-economy, where the term is primarily related to explicit knowledge produced by universities, research centres and the like. Here we concentrate instead in the producers and users of knowledge as a tangible commercial asset, such as the services provided by APS.

McCann-Erickson Services (2008)

| |
|--------------------------------|
| Relationship Marketing |
| Database Management |
| Digital solutions |
| Customs publishing |
| Corporate and product branding |
| Brand innovation |
| Brand valuation |
| Packaging design |
| Brand strategy |
| Advertising |
| Marketing communication |
| Promotion (of products) |
| Events |
| Sponsorship marketing |
| Media planning |
| Communications architecture |
| Public relations |
| Public affairs |
| Corporate communications |

Table 2: List of services MacCann-Erickson. Erickson is one of the leading advertising agencies in the world, with headquarters in New York. Souce: <http://www.maccann-erickson.com/>

Advanced producer services represent the very essence of the activities that make a global city, as they define cities and regions as international centres of command of production and trade and articulators of flows. Advanced producer services are, therefore, in the very core of the debate about global city-regions and their spatial planning. Not surprisingly, APS are bound to have a strong spatial impact, because of their requirements concerning office space, infrastructure, connectivity, environment, and image.

For Sassen, global cities are ‘cities [that] have the resources which enable firms and markets to be global’ (2002: 13). Sassen stresses the fact that ‘relatively few’ cities are able to provide the organizational and management architecture necessary to support the ‘new intensity and complexity of globally connected systems of production, finance and management’ which allow production to be dispersed around the globe. ‘This produces new geographies and hierarchies of centrality _particular cities and regions that have key roles in globalization’ (2002: 13). For Sassen, cross-border flows in the age of globalization are articulated by several key-actors, which include not only national states, the main articulators of these flows in the past, but also firms whose global operations are facilitated by economic flexibilization and liberalization. ‘In this context, we see a re-scaling of the strategic territories that articulate the new system. With the partial unbundling or at the least the weakening of the national as a spatial unit come conditions for the ascendance of other spatial units and scales’ (Sassen, 2002: 13). Among these new spatial units able to articulate transnational flows are regions, cross-border regions and supra-national entities (i.e. global digitised markets and free trade-blocks). With this ascendance of other spatial units, come new issues about decision-making, planning and managing territories.

The new role of city-regions in the articulation of transnational flows is intimately related to their role as places where command activities choose to agglomerate. The progression of transnational corporations around the world and the resulting rising sophistication and complexity of business operations has produced a need for increasingly sophisticated services for companies as well as for individuals. Sassen refers to command functions as being ‘not only (...) top-level headquarters, but rather all the top level financial, legal, accounting, managerial, executive and planning functions necessary to run a corporate organization operating in more than one country. (...) These central functions are partly embedded in headquarters, but also in what has been called the corporate services complex’ (Sassen 2002)(16).

According to Sassen, ‘the expansion of global management and servicing activities [resulting from increasing complexity of transnational business operations] has brought with it a massive upgrading and expansion of central urban areas, even as large portions of these cities fall into deeper poverty and infrastructural decay’ (Sassen, 2002: 14). Sassen recognises that this new role of cities as centres of command involves ‘only certain components of urban economies’ (2002:14).

Harvey foresaw the tremendous impact that command functions would have in the spatial organization of cities and regions. For Harvey (1985: 217) command functions tend, ‘by their very nature, to be highly

centralised while embodying immense power over all manner of activities and spaces'. Harvey asserted that cities could compete to become centres of command of finance capital, for information gathering and control, of government decision-making, etc. This kind of competition calls for certain strategies of infrastructural provision. 'Efficiency and centrality within a worldwide network of transport and communications is vital, and that means heavy public investments in airports, rapid transit, communication systems and the like (...) The provision of adequate office space and linkages depends upon a public-private coalition of property developers, financiers, and public interests capable of responding to and anticipating needs' (1985: 217). The establishment of networked infrastructures that allow rapid connections between the nodes of production and power obeys a systemic logic: stronger nodes tend to be connected first. Public investment in the creation of specific local advantages (like top-quality office space or proximity to ring roads) cannot be spread all over the city and therefore this kind of investment tends to be concentrated in a few privileged spots.

Some developments became emblematic of this new scenario. Early examples planned new corporate centralities such as La Défense (Paris, 1958, stretching on to the 1990s) and Battery Park City (New York, 1980s and 1990s) were followed by London Docklands (London, 1980s and 90s), Potsdamer Platz (Berlin, 1990s) and more recently, Pudong (Shanghai, 1990s and 2000s). In São Paulo, the Faria Lima Urban Operation, a large PPP launched in the first part of the 1990s, has yielded the constructions of more than 100 office buildings in the space of 10 years (Rocco, 2002). These new centralities have set the standard for grand-scale urban interventions. They mean today what railways meant in the XIX century: they are the spatial structuring elements connected to a global development of capitalism.

As existing large urban projects seem to indicate, the State continues to play a central role in the promotion of large urban projects conceived to house the activities and the people who decide when, where and how money is going to be invested.

According to Marcuse and van Kempen, 'the conception that if a city is global, then all of it is global is wrong' (1997:312). Their hypothesis is that, since command activities amount to a very small fraction of all employment in any city, including the most global, their impact therefore on spatial patterns is only one of a great variety of impacts, which are all moulded by the pre-existing fabric of the city. New spatial patterns created by the increase of global flows are built on existing spatial patterns and are as much extensions of old patterns as new ones.

São Paulo, a centre of command in South America

São Paulo is unquestionably the centre of control and articulation of global flows in South America. The absolute majority of global advanced service firms researched operating in Brazil and South America has headquarters and main offices in the Metropolitan Area of São Paulo. This is consistent with the prominence

São Paulo enjoys in the Brazilian urban system. This prominence is of course the result of a specific historical path.

The processes that have culminated in the city's primacy can be traced back to early accumulation of capitals due to coffee exports from the middle of the XIX century onwards, which allowed the development of a transportation network system centred in the city, reaching out to the Brazilian hinterland. This transportation network initially served solely the interests of coffee exporters who needed to ship their production to consumers in Europe and North America. However, as time went by, this network induced urbanization, creating new economic, political and cultural synergies across the Brazilian territory and beyond. In the 1950s, the better part of the Brazilian automobile industry was set outside the core municipality of São Paulo, in a string of peripheral municipalities known as ABC cities (from the names of Santo André, São Bernardo and São Caetano). This was the result of already mature transportation and communication systems that helped shape the networked city-region of today.

The accumulation of capital and the advantageous position of the city as a transportation hub later propelled industrialisation and the development of a dynamic financial market. Highway networks reaching out to the Brazilian hinterland eventually replaced the railway network, and the city's primacy was further accentuated by rapid industrialisation and the concentration of financial institutions. The setting up of automobile factories in the metropolitan area in the 1950s fuelled rapid industrialisation, one of the pillars of the Brazilian economic 'miracle', until its abrupt interruption in the mid-1970s. The 1990s saw a rapid diversification of Brazilian production and its dispersal in the national territory. Wages were too high and land was too expensive in the Metropolitan Area of Sao Paulo to sustain industrial expansion. Moreover, other large and medium sized cities in Brazil acquired sophisticated infrastructure that allowed production (and consequently, producer services) to disperse. Regional capitals became the motors of economic growth and São Paulo saw its participation in the country's GDP decline. However, studies indicate that industrial dispersal has meant that the city has shifted towards high-end services and command functions (Schiffer, 2004), and has not lost its position of command.

This prominent position in the articulation of business and financial services, combined with an extensive network of roads, train routes and airports serving the Brazilian hinterland and the South Cone (Argentina, Chile, Paraguay, Uruguay and Bolivia, roughly corresponding to the common market area known as Mercosur), makes the region of São Paulo one of the great articulators of all kinds of material and functional networks in the continent. As an illustration of the prominence in high-end services and command functions, the São Paulo Borse (BOVESPA) is the largest stock exchange in Latin America, the 3rd largest stock exchange for derivatives in the world and 16th largest world stock exchange by market capitalization (World Federation of Exchanges 2007) highlighting the importance of São Paulo as the main financial hub in the

continent. The region's GDP was approximately 227 billion US\$ in 2005 (IBGE, 2005), placing it third in the region after Buenos Aires and Mexico.

The services sector and R&D related activities are particularly susceptible to rich economies of urbanisation, because they are essentially knowledge-based activities depending on constant innovation and interactivity. The 'urban buzz', the interaction and the creation of synergies between knowledge users and producers are crucial factors for innovation to happen. We do not know precisely how the interactions that produce synergies leading to innovation happen, but it is fair to assert that geographical agglomeration and connectivity are some of the crucial factors. Because São Paulo has an extremely varied economy of urbanization, it is able to stay on the cutting edge in creative and knowledge-based industries, of which advertisement and electronic-internet related industries are the most celebrated.

This primacy goes hand in hand with deep imbalances in the distribution of knowledge-based economic activity across the São Paulo Metropolitan Area. This results in an 'uneven networked city', with distinct nodes or areas connected to local and global networks and vast expanses of 'marginalised' territory. There is no necessary opposition between a knowledge economy and a strong marginal informal economy. It is well established that the formal economy can benefit from informality, in the provision of low-skilled/ low-paid labour, for instance. The real problem resides in the hyper-concentration of knowledge production in only a few spots in the metropolitan area, which results in uneven distribution of job opportunities, investment and infrastructure and exaggerated land speculation. Because of this uneven distribution, locational advantages are excessively concentrated in a few spots, making them prize locations, for which firms will pay more in terms of office space. It also affects the pattern of public investment, as existing hubs receive a disproportionate amount of public funds in the form of large urban renewal projects and/or large infrastructural works. It can also be argued that the public sector has emphasized this dichotomy by carrying large urban projects that further accentuated this uneven distribution.

The location of advanced producer services in São Paulo

According to the São Paulo Real Estate Borse, São Paulo has currently nine dynamic areas for high-end commercial real estate development. These can be grouped into four large business districts: [1] Centro (Old Core), [2] Paulista Avenue and surroundings, [3] Faria Lima Avenue and surrounding and [4] Marginal Pinheiros and surroundings (DATABOLSA 2002).

Roughly speaking, these business hubs correspond to the various economic cycles that the country and the city went through during the 19th and 20th centuries (fig. 1). They reflect economic as well as socio-cultural changes through differences in form, morphology and socio-economic make-up. For each new economic phase, with its specific spatial requirements, a new dynamic centrality was developed. This idea is explored further.



Figure 1: The centre of dynamic economic activity has made a leap of approximately 14 km from the Old Core to the new Corporate Axis along the River Pinheiros, towards the West. Each area roughly corresponds to a new economic phase in Brazilian modern capitalism. Map. R. Rocco, 2006.

Office Development Areas

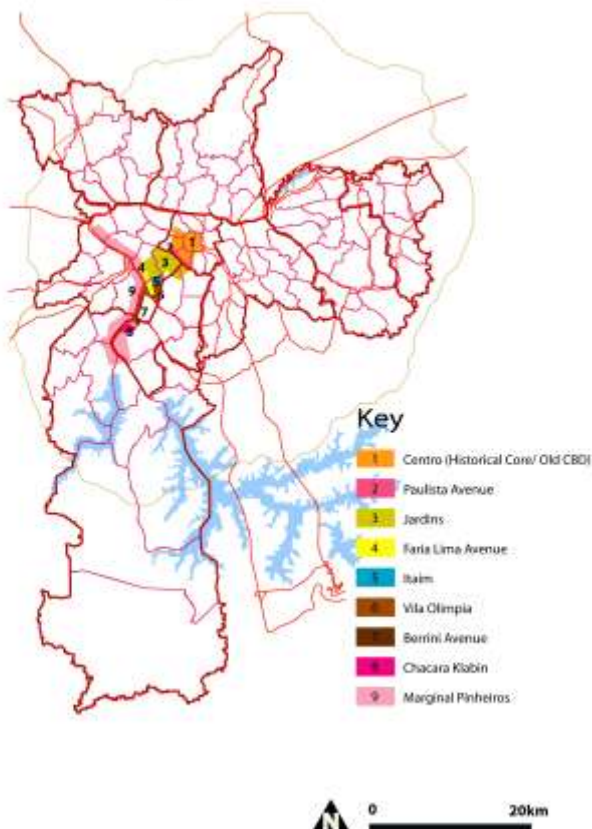


Figure 2: Main Areas for commercial real estate development in São Paulo. Map by R. Rocco, 2006. Source: Bolsa de Imóveis do Estado de São Paulo (2002).

Using mapping techniques, we could verify that Global APS firms, based on the list elaborated by GaWC (Taylor and Catalano 2005), are distributed over seven clusters: (1) Centro (Old Core), (2) Avenida Paulista, (3) Vila Mariana, (4) Avenida Faria Lima, (5) Marginal Pinheiros/ Avenida Berrini, (6) Marginal Pinheiros/ Avenida Verbo Divino (7) Água Branca (fig. 2).

Areas 4, 5 and 6 constitute together what we choose to call the new Corporate Axis of the city. The Corporate Axis is an enormous expanse of office developments running along the basin of the River Pinheiros, in the Western sector of the core municipality (São Paulo), along the city inner ring and it represents the newest corporate hub to be developed under the aegis of globalization.

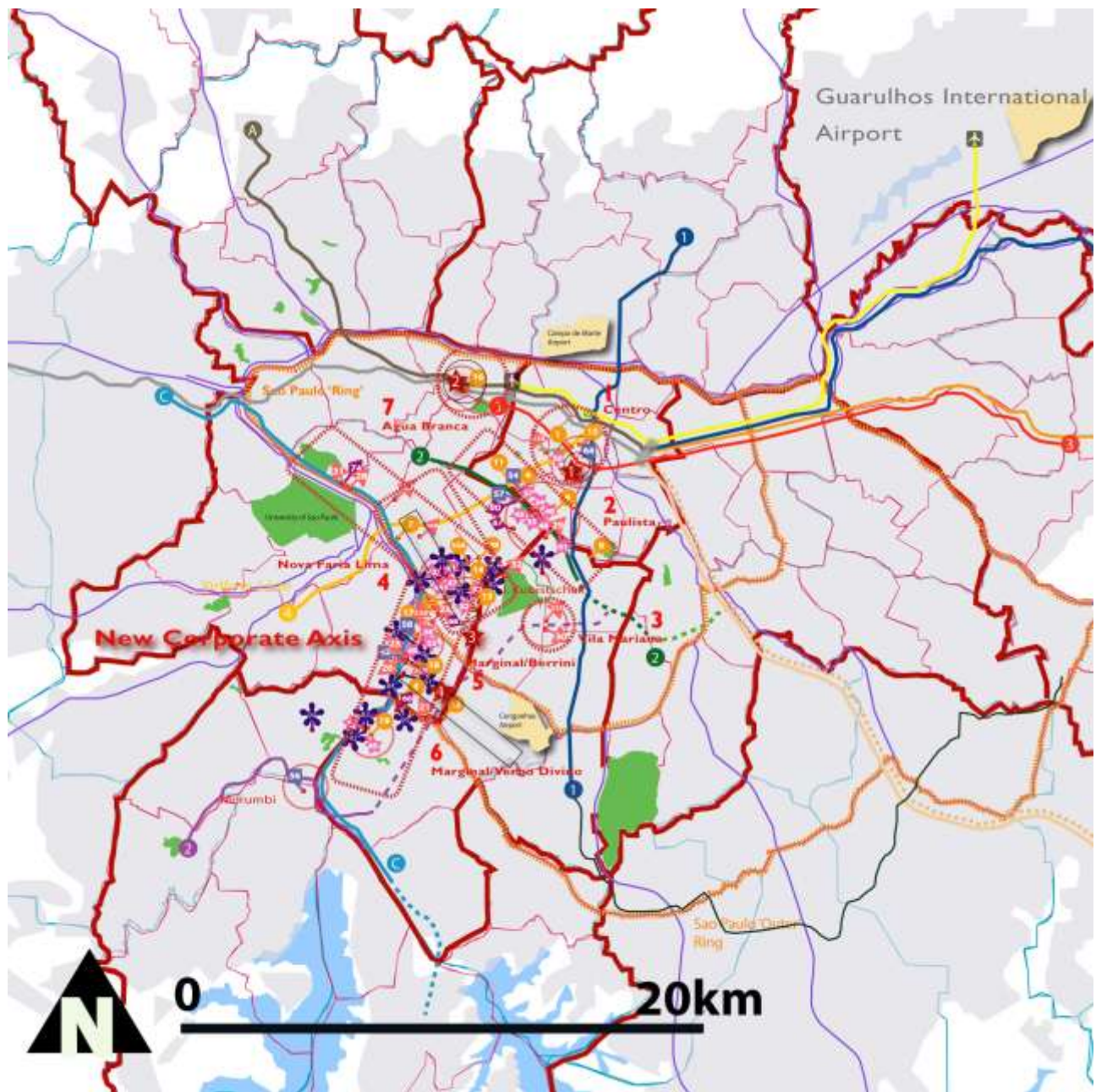


Figure 3: Advanced Producer Service Cluster in São Paulo. Based on the GaWC 100 list of Advanced Producer Services (Taylor and Catalano, 2005)

Dynamic centres for advanced producer services have made a ‘leap’ of approximately 14 km from the old core to the extremity of the New Corporate Axis, with various intermediate hubs along the way, of which Avenida Paulista (3 km away from the old core) is certainly the most significant.

The development of various command function hubs in the metropolis is related to:

1. The expansion of technical and services networks in the XX century, in the first decades of the XX century, but particularly after WW II
2. Different spatial/ structural requirements for each different economic phase (e.g. the expansion of the financial sector in the 1970s and 1980s required new kinds of office space, developed at Avenida Paulista and Avenida Faria Lima, at the expense of the city’s old core, which could not accommodate them).
3. The development of high-standard residential areas in the Western part of the city. At first, this movement was connected to the separation between high standard housing and industrial activities taking place in the Eastern sector of the metropolitan area. In the first half of the XX century, the Anglo-Canadian ‘Companhia City de Urbanização’ urbanised large areas of the city following British urbanization principles of that period. This provided wealthy households with living environments free from the constraints to be found in the more congested central neighbourhoods. This movement constituted, therefore, a movement of ‘suburbanisation’, although nowadays these ‘suburbs’ have been well incorporated into the urban fabric of the city and have become central in relation to new and even more distant suburbs. Most important, ‘Companhia City’ was an agent of comprehensive urbanisation, thanks to concessions from the public sector allowing it and its sister company, ‘São Paulo Light & Power’, to manage and extend urban technical networks related to electricity and trams to newly urbanised neighbourhoods. This generated transformation in the social composition of the central areas of the city, and triggered a spatial trend where wealthy households moved increasingly further west.
4. Social transformation triggered changes in the public sector’s investment priorities. The public sector became increasingly more committed to providing high quality infrastructure and services to the western sector of the city, in a context of defective governance, which was aggravated by periods of non-democratic political rule. Private investments followed, leading to a concentration of wealth, infrastructure and services in that area of the city.

In order to better assess the diversity of knowledge-based service hubs in the metropolis and their location patterns, it was necessary to survey the largest advanced producer services operating locally. By doing this, we expected to have a clearer picture of how these hubs were located in the urban fabric.

The following sectors were surveyed:

1. 50 largest insurance firms (by amount insured) (2004. Source: Maiores & Melhores, Revista Exame, 2004)
2. 50 largest banks' headquarters operating in São Paulo (by profit) (2004. Source: Maiores & Melhores, Exame, 2004)
3. 50 largest ICT and Digital services firms' headquarters (by profit) (2004. Source: Maiores & Melhores, Exame, 2004)
4. 50 largest advertising firms (by accounts) (2007, Ibope Monitor, ibope.com.br)
5. 50 largest general technical & logistic consultancy firms' headquarters (by profit) (2004. Source: Maiores & Melhores, Exame, 2004)
6. 100 firms with largest investment in ICT headquarters (by amount of investment in ICT) (2005. Source: Info, infoabril.com, 2005).

These samples were selected because of their significance in the post-Fordist modes of production and their importance as knowledge-intensive services. They also give us a broad overview on different sectors of the knowledge-based economy, partially covering the creative sector (i.e. advertising).

While financial and insurance services are intensive users of technology, they generally do not produce it. They are, primarily producers of information and services in the form of consultancy (the best tool for the commercialisation of tacit knowledge). On the other hand, ICT and digital services are obviously intensive producers of new technology, information and explicit knowledge. They are at the cutting edge of innovation. They depend, of course, on the outputs and inputs of other sectors in order to operate and grow. The existence of large financial and creative economies in São Paulo triggers the agglomeration of ICT services. Internet providers rely heavily on content providers. That is why, in Brazil, large Internet providers belong to or operate in association with content producers (large news agencies, newspapers, telephone and television companies). Advertising is a strong industry in Brazil, and particularly in São Paulo. A large quantity of advertisements is produced for global consumption (SEADE 2008). The Brazilian advertising industry is concentrated in São Paulo and Rio de Janeiro and the advertising market is closely monitored by IBOPE (Brazilian Institute for Survey and Research). The largest Brazilian and global advertising agencies are located in São Paulo, concentrated, as we shall see, in a very small area of the city.

The last category, 100 Brazilian firms of all sectors with the largest investment in ICT and digital technologies is revealing of who and where innovative knowledge and technology users are located. Banks, as pointed out, are intensive users of ICT, because of the high level of sophistication of banking operations in

Brazil. Other intensive ICT users include communication services, retail services, large industrial conglomerates and large public-owned companies.

When all samples are put together, we are able to see a clear picture of the various existing service hubs in the metropolis. They are structured in three main areas, with some exceptional nodes outside this main configuration. These three main areas are briefly described here:

1. The Old Core (Centro): This is the densest and perhaps one of the most well served areas of the city in terms of infrastructure. Traditionally, advanced services have located there since the mid-XIX century and have continued to do so all through the XX century, until well after WW II, when Brazil entered a new development phase based on rapid industrialisation and financial services. However, the old core lost most of its inhabitants and became a no-go area for the middle-classes, who see it as decaying and dangerous. The persistence of firm location in this hub can be attributed to locational inertia and the preservation of its connectivity advantages. However, a closer look at the firms located in this hub demonstrates that only ‘traditional’ APS locate here, mostly of Brazilian origin, whereas in other areas firms are more modern and international.
2. Avenida Paulista: Around the 1950s and 1960s, advanced services started to agglomerate on and around the prestigious avenue build by the early industrial bourgeoisie, with a rapid growth in the two following decades. By this time, the old core had started to decay, as it became congested and space for new developments became scarce. It was increasingly deserted by its dwellers. Avenida Paulista is almost fully occupied by high-rise buildings, so that streets around it suffered intense verticalization in the first years of the 2000s. As it approaches a point of saturation, it remains, however, a strong node for advanced services, especially in the financial sector.
3. The Corporate Axis: After the 1990s, Brazil entered yet another development phase, where the country liberalised its economy, tamed inflation and opened itself to global flows of all sorts. The area where service firms connected to the new economy chose to agglomerate was the banks of the river Pinheiros, along a ‘super avenue’, Marginal Pinheiros, devised originally by Robert Moses.

Therefore, the Old Core [1] and Avenida Paulista [2] have been traditional centres for financial and insurance services for decades. The old core emerged as a financial hub already in the beginning of the XX century, while Avenida Paulista took over as main financial centre during the 1970s and 1980s, when the Brazilian economy became exceedingly dependent on financial services thanks to hyperinflation and very high interest rates. However, these hubs started to lose their preponderance in the 1990s and first years of the 2000s, when other important hubs started to emerge: the [3] New Avenida Faria Lima), [4] Avenida Berrini and the area around the World Trade Centre at [5] Marginal Pinheiros.

The progressive internationalisation of the Brazilian economy can be easily read in the development of high-end advanced service hubs in the urban fabric. While most insurance firms located in the old centre are Brazilian, Avenida Paulista presents a much more mixed composition of Brazilian and foreign firms. The other areas to the Southwest, especially along the New Corporate Axis, have an impressive predominance of foreign firms established in Brazil during the 1990s.

Location patterns of the largest ICT service providers show that their absolute majority are located along the River Pinheiros, in the Corporate Axis, with a small hub also appearing at the edge city of Alphaville (this is a typical upper-middle class gated community located at the edge of the metropolis, which has started to generate its own economy of urbanization because of its sheer size). Reasons for this surprising configuration seem to be connected to the ring road, which acts as a connector to various services and infrastructures not easily accessible from the old core of the city, facilitating interactions. The old business districts are just not enough connected. This happens in the light of the prevalence of the motorcar as the preferred mode of transportation.

More dramatic concentration of APS seems to have to do with the location of MANs (Metropolitan Area Networks). The largest and most important MANs are operated from CENU (Nações Unidas Business Centre) and the University of São Paulo, both located at Marginal Pinheiros, the western section of the ring road (Telegeography, 2004). This configuration also denotes the enormous imbalance in digital development throughout the metropolitan area, with corporate producers and users located in very restricted spots in the city. It also indicates a large unevenness in the spatial distribution of the 'knowledge-economy', concentrated in the Western sector of the metropolis.

For Meyer et al. (2004), this concentration has to do with the release of former industrial plots near the ring road for development of high-standard office space and housing. This implies a high upward elasticity (the ability to build taller buildings) in an area that already attracts a large amount of public and private investment. Vila Olímpia is in the heart of the Corporate Axis and has been the object of massive investment in infrastructure of all kinds, but especially new roads, bridges and digital infrastructure. This is the area where most global advanced services agglomerate, because of the large number of new office developments. Some of its parts are also subject to a large number of developments in high-standard residential towers. Connectivity, upward elasticity (thanks to the removal of industrial activities), image and proximity to high-income groups make the area the most required for international standard developments.

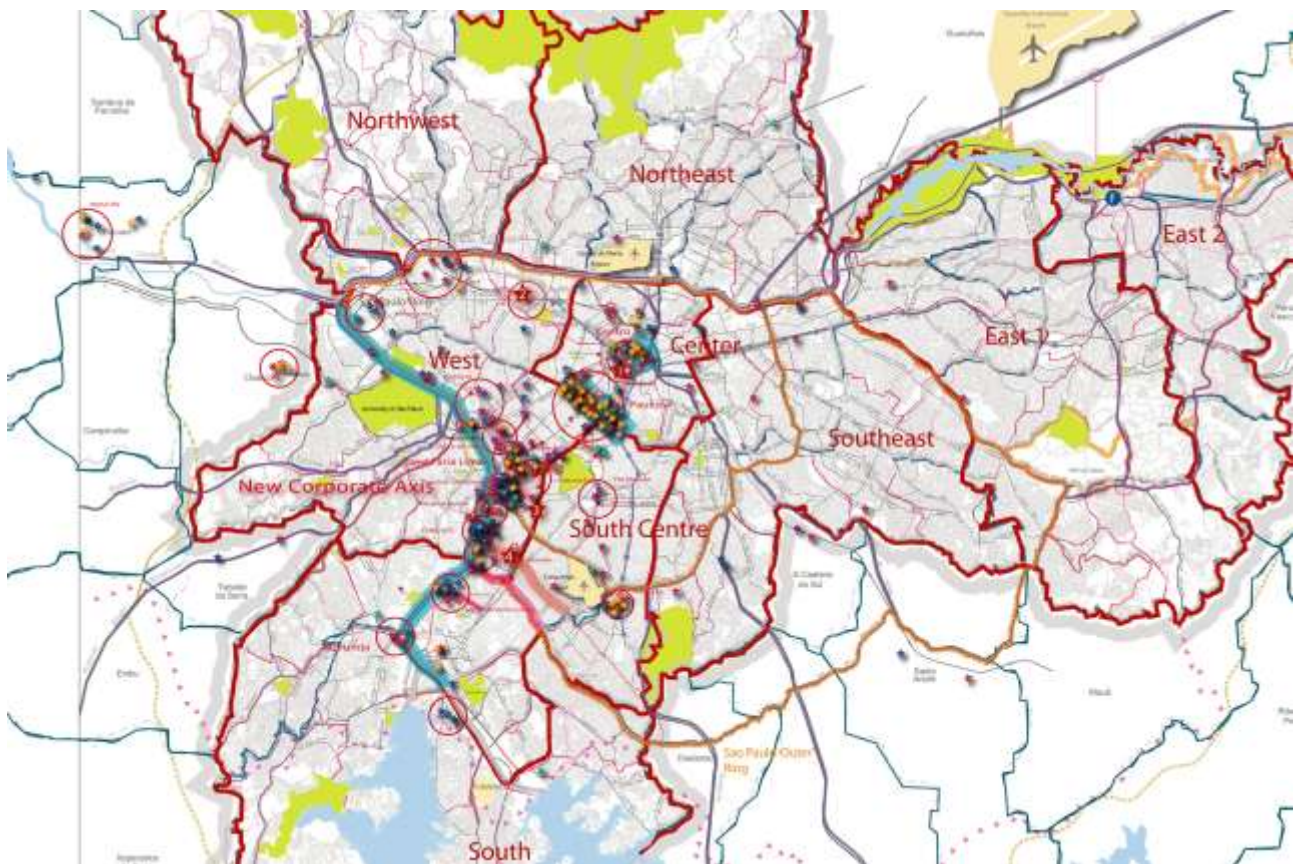


Figure 4: Main advanced service hubs with all APS headquarters of the samples surveyed. Right: Main hubs detail. Map R. Rocco 2007.

Transportation, communication services and logistics, on the other hand, do not concentrate in the same places as ICT service providers. In the sample we analyse, telecommunications companies, aerial companies and operators of technical urban networks (telephone, gas and electricity) are bound to provide services to other companies and to households. Many of them are State-owned companies. Of all our samples, this is the most diverse and no specific conclusion comes from the analysis of their location patterns. They concentrate equally in the three main advanced service hubs in the metropolitan area: the Old Core, Avenida Paulista and along the southern section of Marginal Pinheiros (Funchal/Olimpíadas area). No company in our sample was located in the industrial East of the city, where industrial areas are also beginning to vacate, but office space development is comparatively low.

Of all samples analysed, the most concentrated sector is advertising. Not only more than 90 % of all advertising companies are located in the West of the city, near Marginal Pinheiros. There is one very large hub of advertising companies at the Funchal/Olimpíadas area, around the extension of the Avenida Faria Lima and adjacent to the ring road. Two other large hubs are located near the first one: The New Faria Lima itself and the WTC (World Trade Centre)/CENU area (perhaps the largest office development of the city in the last 10 years). Just like ICT services are at the cutting edge of the ‘knowledge economy’, advertising is at

the cutting edge of the ‘creative economy’. That the largest companies in both kinds of economies are so concentrated in almost exactly the same areas in São Paulo indicates an unequal distribution of resources and development related to modern capitalist production, much related to and deriving from income spatial distribution and the location of communication infrastructure.

Places related to the new economy, just like in other globalizing metropolises; rely on high connectivity, high visibility, inter-modality and wide scale jump (the ability to go across a large number of scales at a given point in space). Car accessibility seems to be crucial, but in São Paulo, it is even more emphasised by the lack of a comprehensive and attractive metropolitan transportation system. The current metropolitan train system is mainly used by low and middle-income workers. Class distinctions, prejudice, safety issues and lack of efficiency make it unlikely that executives and white-collar workers use public transportation in the city.

Because of massive traffic congestion at peak hours (easily surpassing 100 km of linear congestion in one single day), the road system is high in the public eye and in the political agenda. This means that road works usually get a disproportionate amount of public investment, in relation to what public means of transport do.

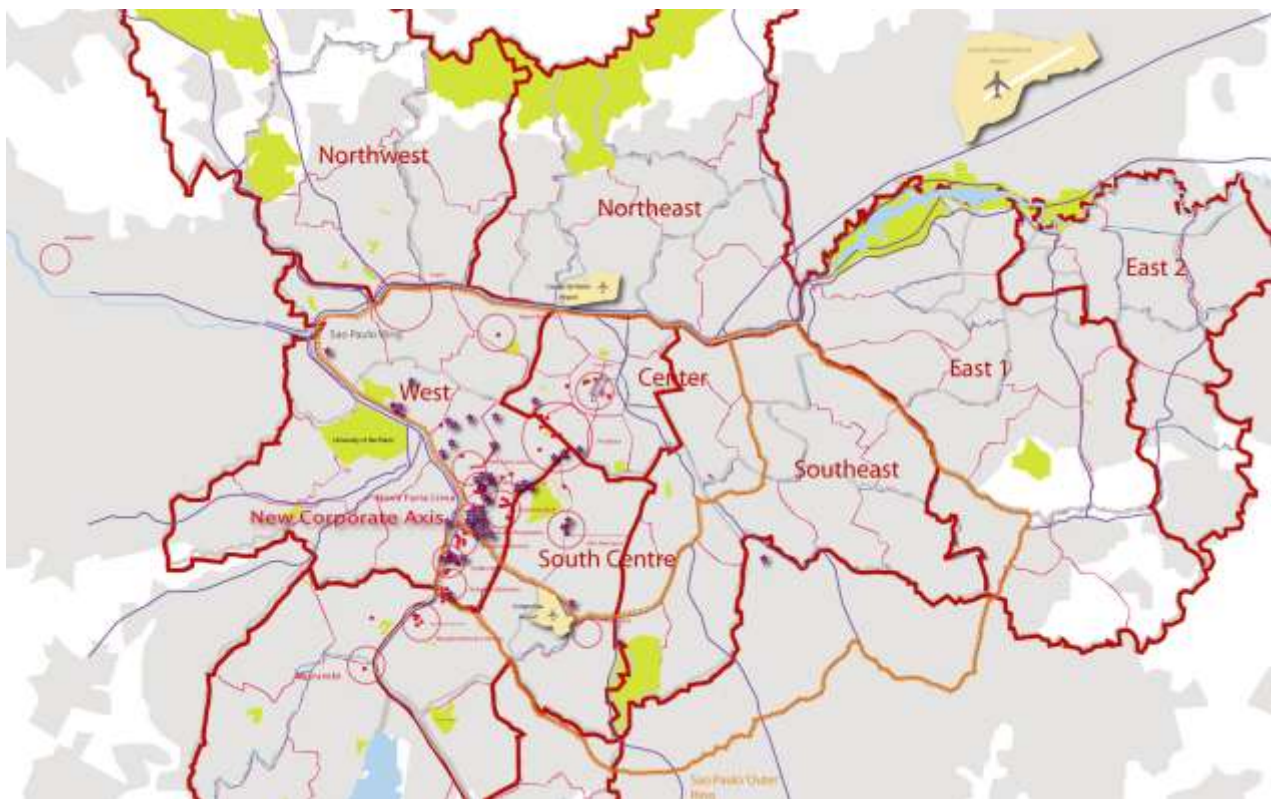


Figure 5: Largest advertising firms operating in the MASP. Left: Detail of the main concentration hub in Vila Olímpia. Map R. Rocco 2007.

It is important to emphasize that accessibility and the existence of consumers' services seem to be secondary factors in the location of APS in São Paulo. Commercial activity seems evenly distributed along the city's roads and streets. As one approaches the borders of the municipality, commercial activity decreases because density also decreases, but so do income and accessibility.

On the other hand, the spatial distribution of income has of course a very high impact on the distribution of economic activity. This is much more obvious in São Paulo than in the Randstad, for instance, because social contrasts are much more evident. There is an 'island of richness' in the west of São Paulo. The new economy seems to be restricted to a limited area. Again, path dependency seems to dictate the trend towards an even greater concentration of wealth and services in the west of the metropolis.

However, the middle-class 'march to the west' seems to be coming to a halt, as other sub-centres emerge outside the island of richness. Certain areas of the municipality of São Paulo (Santana to the north and Tatuapé, to the east) have seen their per capita income increase dramatically in the last decade (IBGE 2000). Other municipalities in the Metropolitan Area (São Caetano and São Bernardo to the South, Osasco and Barueri to the West) have strong middle classes and the variety and sophistication of services in these areas are bound to increase. Demographic and economic stability after the re-democratisation of the country has opened the door for a new phase in São Paulo's development: a time for urban regeneration and redevelopment. This illustrates the role of macro socio-economic and political conditions in shaping local conditions (Schiffer 2004).

Conclusions

Instead of regarding the global city (or the global city-region) as a uniform unit, we try to understand what are forces triggering spatial transformation in an increasingly knowledge-based economy and try to add a specific spatial component to the idea that global cities are increasingly inter-connected .

The trends found in the case study analysed (and reinforced by the analysis of the Randstad-Holland, carried out somewhere else, notably in Rocco, 2008) can be briefly summarised as follows:

1. The increasing location of business nodes over a main ring road, ensuring easy access to other business and consumption nodes, as well as services in other areas of the metropolis
2. The close proximity of a large airport, serving a large business hinterland (the vast Brazilian hinterland and part of the MERCOSUR Economic Community)
3. The existence of one or various MANs (Metropolitan Area Networks) ensuring optimal digital connectivity. The location of MANs might be a factor for attraction for large APS. However, it is also true that previous agglomeration of activities would attract a MAN. In the case studies analysed, the action of

World Trade Centres in setting up MANs have helped attract more enterprises to their immediate surroundings.

4. The interest of national pension funds, which invested heavily in real estate in the 1990s. Although this tendency has been dissipated in the last few years, with pension funds diversifying their real estate portfolio, the 1990s and first years of the 2000s saw pension funds invest generously in mono-functional business locations.

5. The relevance of the local government as a promoter of large infrastructural works, especially related to the road and transportation systems, sometimes in partnership with the private sector. However, as the case of Avenida Faria Lima in São Paulo seem to indicate, the commitment of the public sector is an a priori condition for private investment. The ensuing partnerships are not always balanced, as the public sector seems to assume most of the risk.

6. The social composition of the surrounding areas, where high skilled workers dwell and therefore can have easy access to work

7. The existence of facilities and services related to an international lifestyle (international schools, hotels and luxury shops, for example)

8. The perceived necessity for better connections with the old centralities (São Paulo Centro and Avenida Paulista), ensuring synergies with the traditional business and cultural nodes

Apart from structural convergence, there are many other kinds of convergence, including urban planning strategy convergence. From convergent developments, we can tentatively derive some very general trends in locational patterns of large APS firms:

1. Easy access to other nodes in distinct networks (the ring factor). This is coherent with the networked nature of work and knowledge flows in the service sector.

2. Easy access to large transportation nodes (the airport factor)

3. Clear connection to old centralities where consumer services and producer services are concentrated (the urban ‘buzz’)

4. Image as a crucial factor. Corporate image is not only associated to buildings, but also to the image created by modern, daring and innovative urban milieus (the corporate image factor)

From the analyses, we can also draw tentative recommendations and point at some problems of current urban policies:

1. Large Urban Projects must work within a system of interventions (not as sole interventions) in order to create dynamic growth and synergy between the various nodes in the urban network
2. Excessive concentration of investment in poorly articulated nodes might explain part of the problem of social and spatial polarisation
3. Investing in business centralities alone is not enough, because creating a one-dimensional node does not create the necessary synergy to promote innovation. Various kinds of networks must be articulated in order to benefit a large number of agents.
4. Large Urban Projects carried out through partnerships between public and private sectors seem to be more successful where pre-existing structural conditions match firms' requirements. This does not mean a blind submission to market forces, but indicates the necessity to understand what the spatial-structural requirements of the new economy are.

The emergence of new centralities has challenged old centralities. Surprisingly enough, instead of competing with them, new centralities seem to accommodate new functions that find it problematic to operate in old centralities. Old centralities seem to retain many of their old functions and are in fact complementary to emerging centralities. Emerging centralities apparently cannot always replicate the attributes that constitute the image of cities and that are to be found mainly at their 'old centres'. Indeed, some new centralities try to either to emulate these attributes or to associate themselves with them (e.g., Paris La Défense lies not in the municipality of Paris, but is physically connected to its most representative and symbolic spaces through a monumental axis). Old central places are going through deep transformations and have sometimes acquired new roles.

Simultaneously, cities have witnessed the multiplication of specialised centralities, creating a network of nodes in the city, following the networked nature of production and consumption in modern capitalism. On the other hand, former peripheral areas saw the emergence of new developments, which accommodate new kinds of activities related to the rise of the tertiary sector of economy. Activities that were formerly carried out in the centre are now carried in peripheral places, and vice-versa. Centrality and periphery coexist next to each other in the global city.

Since the emergence of a fast globalizing system, cities have been confronted with external models and forces. First, and more evidently, the imposition of form and structure by colonisers (e.g. the 'Spanish grid') and lately, by the requirements of modern capitalism. The generalisation of the capitalist mode of production has brought with it various types of convergences, or tendencies towards convergence, of which convergence in urban spatial structure and form is not the least important. Cities are confronted once again with converging models that they adapt to their own skin the best they can. This is a much more complex process than merely stating that cities are converging or becoming more similar. They might become more similar in

some aspects, while the heritage of previous times remains functional. Differences in geography, climate, position, not to mention specific historic developments and path dependency are not enough to prevent local administrations from emulating what they believe to be the model to be followed.

This is also true for large urban projects and infrastructural transformations. Cities in the new ‘world-system’ are also confronted with similar requirements from global agents (transnational corporations and transnational elites), which leads to convergence on one side, while the ‘inevitable continuities’ of the city (Beauregard and Haila, 2000) lead to divergence on the other side.

Our original case studies illustrate that processes of urban spatial structural convergence might exist in very dissimilar settings. Despite the enormous differences between São Paulo Metropolitan Area and the Randstad-Holland, similar processes including decentralisation, polarisation and accentuated polycentricism occur in both global city-regions, because they have similar functions as global nodes of command. Both are large nodes in global networks of power, finance, production and movement.

The processes to what globalizing agents are responding to are manifold. On one hand, urban processes are persistent and do not change overnight. New forms of organisation of production and the territory have to deal with the pre-existing fabric of the city and with long-standing societal processes. Global actors are increasingly present in the local arena and the real estate market is increasingly more delocalized. Simultaneously, local agents are more sensitive to global demands and opportunities. This does not mean that local urban regulations, local political restraints, local development policies and a myriad of other place-specific factors do not interfere with processes of urban transformation. It means, however, that cities are now more than ever exposed to a similar logic, which might result in similar spatial developments.

Governments (at various levels) had to promote structural and spatial transformation in order to strengthen connections to local networks and to deal with the effects of stronger and more dynamic networks being created by the expansion of national and foreign TNCs and other globalizing forces.

The role of the public sector is much more preponderant than we are led to believe by discourses advocating the shrinking of the public sphere and a new economic laissez-faire. In fact, local governments are perhaps the main promoters of urban transformation related to global forces. We do not underestimate, however, the growing power and influence of private corporations and the strong effects of market liberalisation reforms. The forging of alliances between the private and the public sector seems to have a very different meaning in different contexts, partly because of different perceptions on how public matters should be conducted in terms of societal goals.

As the Faria Lima Avenue in São Paulo so clearly exemplifies, attracting foreign investment in the form of headquarters and advanced producer services has become one of the main concerns of national and local authorities of the main global cities. One of the main tools deployed by local administrations in order to

attract these functions was the carrying out of large urban projects (LUPs). LUPs have had a deep impact on questions related to centrality, urban structure and infrastructure, image, local budget and the creation of distinctive spaces where the forces connected to globalization can operate. Distinctive urban locations as well as outstanding buildings are intimately associated with corporate image and marketing. The emergence of ‘new centralities’ in global cities is related to the progression of trade and foreign direct investment around the world and the ensuing sophistication of business operations, as well as increasingly complex location decisions that rely primarily in connectivity and image. Further research is necessary to establish whether this is valid for cities below a certain threshold in the global city hierarchy, as suggested by Taylor (2004) or whether the emergence of new centralities related to the rise of the tertiary sector is a widespread phenomenon.

Public Private Partnerships such as those described in the case of São Paulo should be considered in a broader context and analysed accordingly. Despite representing important steps towards the development of new patterns of governance, PPPs have produced a massive concentration of investment of all kinds, leading to growing interest of the market in investment in real estate.

We hasten to emphasize our conviction that globalizing forces do not create gleaming and glistening corporate hubs only. They have a general effect on how cities are organised as a whole, with disparate and often opposing results. Cities must be understood as systems composed by articulated parts, where structural transformations in one part of the system are bound to affect the structure of the whole system, both spatially and socially. We also point out at the fact that globalizing forces act upon existing national urban systems and hierarchies that are not bound to change overnight. Stakeholders operate in very specific urban, social and cultural systems. It is to be expected that the ‘continuities of the city’ offer resistance to convergent structural and functional processes. In São Paulo, this resistance has taken a very active form in the case of the Faria Lima Avenue, where organised civil society has actively protested against local government policies regarding what the local government saw as the expansion of global business hub.

In the case of São Paulo, it is clear that the new phase of capitalist production is reinforcing city polycentricism, either planned or triggered by market forces. Can these two ever work separately? The market seems to dictate the path. But it is the State who builds infrastructure and facilitates production.

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