Innovative Milieus in the context of emerging functional and polycentric Mega-City Regions

Comments to the discussion paper 'Towards a new territorial approach to economic development? Enhancing the Milieu concept'

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Introduction

Over the last decades, Europe has experienced the reorganisation of functional-territorial division of labour in the knowledge economy. The result is a multi-faceted, localised hierarchical network that has an increasing impact on the structure of space and eventually on spatial development policies. In this context, we pick out some aspects of the discussion paper and speak for a new perspective on the Milieu concept. Thereby, we understand innovative Milieus as integral parts of larger economic spaces, so called polycentric Mega-City Regions. Mega-City Regions are defined as "…a series of anything between ten and 50 cities and towns physically separated but functionally networked, clustered around one or more larger central cities, and drawing enormous economic strength from a new functional division of labour. These places exist both as separate entities, in which most residents work locally and most workers are local residents, and as parts of a wider functional urban region connected by dense flows of people and information carried along motorways, high-speed rail lines and telecommunications cables" (Hall and Pain 2006:3). The key point of this definition is that Mega-City Regions are characterised as socio-economic relational processes linking regions to other cities and towns on different geographical scales. In this sense, we refer directly to the 3rd phase of the internal evolution of the GREMI approach that was centred on the articulation 'milieu-network' and the crucial formula: local milieu + innovation networks = innovative milieu (Maillat, Quévit and Senn 1993). In our opinion, this formula is a key strength of the Milieu concept that should be further advanced in both conceptual and empirical terms.

The interplay between local milieus and innovation networks makes clear that future research in regional science is also about combining theoretical approaches and empirical methods. Therefore, we argue that the emergence of polycentric Mega-City Regions – and to some extent innovative Milieus too – is a spatial phenomenon that results from two interdependent processes: agglomeration economies and global network economies. In the following sections, the main

arguments of these two processes will be discussed along the three levels proposed in the discussion paper: Technology, Organization and Territory.

Technology

Since long knowledge and technological change are recognized as important motors of changing spatial patterns of economic development. Knowledge is a key driver for the competitiveness of firms and regions. For firms, knowledge is an important resource for innovation, which, in turn, is one of the major drivers of economic growth. In this context, Michael Polanyi's (1967) distinction between codified and tacit knowledge is still vital. Codified knowledge can be applied, expressed and standardized. Hence, it is a marketable good that can easily be distributed over time and space. Tacit knowledge, in contrast, refers to knowledge, that cannot be easily transferred. It comprises skills based on interactions and experiences (Polanyi 1967).

Since the transfer of tacit knowledge requires direct face-to-face interactions, the findings of Polanyi (1967) are not only important for firms but also for regions. The main reason why regions play an important role in the supply of knowledge is that firm networks benefit from different kinds of proximity. Often, a distinction is made between spatial and relational proximity. While spatial proximity is defined as geographical distance between actors, relational proximity is associated with the closeness of actors in organizational terms, meaning that actors share the same space of relations, for example the way interactions and coordination between actors is organized (Boschma 2005). Initially, this debate was polarized around a dualism between 'local' and 'global'. On the one hand, the power of local know-how, inter-personal ties and local institutional or cultural synergies have been stressed. On the other hand, the possibilities of relational proximity offered by travel, technology, supply-chaining as well as corporate or inter-organizational links have been focused on. More recently, both sides have started to acknowledge that local and global ties importantly contribute to knowledge generation (Amin and Roberts 2008). Simmie (2003) for example shows that knowledge intensive firms combine a strong local knowledge capital base with high levels of connectivity to similar regions in the international economy. Thus they are able to combine and decode both codified and tacit knowledge originating from multiple regional, national and international sources (Simmie 2003). Various emipirical studies indicate that translocal relational learning networks are the key to understand the complex and simultaneous scale-sensitive process of local and non-local learning (Faulconbridge 2007).

Organization

Organizations, most importantly firms and groups or networks of firms tied together into production systems, are the second important level for spatial development processes in Mega-City Regions and Innovative Milieus. Most corporations develop their location networks as part of their overall firm

strategy in order to optimise their added value and to compete successfully on global markets. Such networks can be organized either intra-firm or extra-firm.

Intra-firm networks, on the one hand, are spatially distributed branches of one individual corporation. Peter Taylor (2004) provides with his *world city network* approach an empirical instrument for analysing inter-city relations in terms of the organizational structure of the global economy (Taylor 2004). Thereby, he analyses inter-city relations using the internal structures of large Advanced Producer Services (APS) firms and revealing the relationships between head offices and other branches located all over the world, building theoretically on Saskia Sassen's (2001) identification of APS as crucial actors and outcomes of globalization and localization processes, and Manuel Castell's (2000) notion of a "space of flows" (Sassen 2001; Castells 2000).

Extra-firm networks, on the other hand, are relations between corporations and business clients or suppliers based on contracts, joint ventures or shared projects. Knowledge exchange and business activities do not only arise through intra-firm office networks, but primarily from the division of labour between companies. In many cases, outsourcing strategies in respect of single activities are more efficient and lead to a higher quality of products and services. Many firms concentrate on their key competencies, which are produced in-house, while activities that do not belong to the core business are outsourced to other companies. Even networks between competitors open the opportunity for formal and informal knowledge exchange within the same field of business (Porter 1990). Under these conditions, there is a high potential for developing new products and services needing upstream and downstream inputs and costumers, which represents the different elements of the value chain in the knowledge economy. From an empirical point of view – and in our mind with far-reaching conceptual consequences – a value chain approach is a promising tool to understand the changing nature of international trade and industrial organization. Thereby, the key questions are which activities and technologies a firm keeps in-house and which should be outsourced to other firms, and where the various activities should be located (Gereffi, Humphrey and Sturgeon 2005; Coe, Dicken and Hess 2008, 2008).

Firms that are engaged in innovation processes need constantly to acquire new knowledge of various kinds from internal and external sources during the development of any given innovation. Thereby, organizations can facilitate their innovation process either by local clustering and/or global sourcing strategies. There are three main reasons why knowledge-intensive firms choose local clustering strategies in order to improve their innovation capacity (Simmie 2003):

- First, because trust and the exchange of tacit knowledge within social networks are built up by frequent interactions that can take place more easily within spatial proximity than over greater distances.

- Second, labour mobility among highly qualified professional and technical workers contributes to the sharing of tacit knowledge and this is easier within a given regional labour market.
- And third, the agglomeration of knowledge resources makes it easier to 'pick and mix' the inputs required at different stages of the innovation process.

However, although there is strong evidence that knowledge is highly concentrated in a minority of city-regions, it is unlikely for a firm that all the knowledge required for innovation can be found within a single region, especially when region is a narrowly defined as territory. This fact is often attributed to the following two arguments:

- First, new information and communication technologies offer the opportunity of increasingly codifying and commodifying knowledge and making it tradable across long distances, which means that codified knowledge becomes more and more de-territorialized. This enables companies to source activities and inputs globally and to benefit from relational proximity and international knowledge exchange.
- Second, according to modern evolutionary theory (Nelson and Winter 1982; Dosi et al. 1988), intra-firm networks of large multinational corporations (MNCs) are important driving forces in the global knowledge economy concentrating and centralizing their power in their headquarters that are often located in core metropolitan areas (Henderson and Castells 1987; Thrift and Taylor 1982). The growing prevalence of MNCs provides important vehicles for transferring research findings and knowledge resources. Much new information and knowledge is exchanged within the multinational manufacturing or service and consultancy companies. The decisions of these MNCs about where they conduct their activities along the value chain play a major role in where innovation and knowledge is located. They can split its activities into units and localize and disperse these units in the most favourable places in terms of local knowledge resources and industrial culture (Massey 1985).

Territory

The figure below depicts schematically the inter-relationships between the knowledge economy (Technology level) that basically follows a functional logic and the emergence of Mega-City Regions (Territory level), which basically are the effect of spatial logic at work. The driving force behind this process is the location behaviour of knowledge-intensive firms (Organization level) leading to agglomeration economies on the on hand, and global network economies on the other. As described in the sections above, agglomeration economies result from the clustering of knowledge-intensive firms in certain areas enabling them to benefit from spatial proximity and local knowledge spillovers. Global network economies, otherwise, result from global sourcing strategies of knowledge-intensive

firms leading to relational proximity and international knowledge exchange. Based on this functional logic, we argue that polycentric Mega-City Regions are the outcome of a spatial up scaling of agglomeration economies and a spatial re-concentration of global network economies:

- The up scaling process of agglomeration economies is determined by the achievements realised in transportation and telecommunications technologies. The costs of several modes of transport and communication have drastically declined, and, in some cases, speed and reliability have significantly improved. As a consequence, polycentric Mega-City Regions are increasingly enabled to achieve agglomeration economies of comparable magnitude to those of large mono-centric cities.
- The spatial re-concentration of network economies is determined by the location behaviour of the knowledge economy. In order to improve their added value, knowledge-intensive firms need several local business conditions such as proximity to international gateway infrastructures like airports and high-speed train nodes. Furthermore, knowledge intensive firms are looking for high quality infrastructures such as universities with good reputation or large settlements of leading global companies, as well as for the availability of specialised knowledge, the presence of competitors, business partners and customers as well as qualified manpower.

All in all, the interplay between the up scaling process of agglomeration economies and the spatial re-concentration of network-economies is strongly subject to increasing returns to scale leading to polycentric Mega-City Regions as essential spatial nodes and engines of today's global economy. It is this two-fold process of simultaneous re-concentration and decentralization, both elements associated with the same dynamics of the knowledge economy, which explains the complexity of Mega-City Region development. It is to be expected that similar processes are affecting the development of Innovative Milieus, which cannot be understand without its integration in wider spatial configurations and multi-scalar production systems.

Some concluding remarks

The increasing importance of network economies has introduced new lines of thinking about space, place and scale that interprets regions as unbounded, relational spaces. From a relational point of view, regions can be defined by their linkages and relations within and beyond its territorial boundaries (Pike 2007). The main conclusion of this contribution is that functional polycentric Mega-City Regions as well as Innovative Milieus emerge as a scale-dependent phenomenon based on the coming together of various networks of different organizational structures and scalar reach. Therefore, future research activities should not consider geography first, but start with the location behaviour of firms and institutions itself. When looking at their value-creation process, it becomes

obvious that these processes follow a functional and networked logic of independent as well as interdependent institutions throughout the value chain. These processes are not necessarily bound by the limitations of territorial borders. In this sense, we argue not to put the territory at the centre, but to analyse economic activities and relations from a spatial perspective. In other words, it does not help much to formulate a new territorial economy as an alternative theory to globalisation. In our opinion, it makes much more sense to understand regional sciences as a complementary approach to globalization. Regional theory needs to understand the roles that locality plays as individual nodes in the networks of national and international linkages. Through that line of reasoning the vertical or hierarchical perspective gets reintroduced again into the debate, which in the end is more mind-opening than the juxtaposition of a territorial economy versus globalization processes.

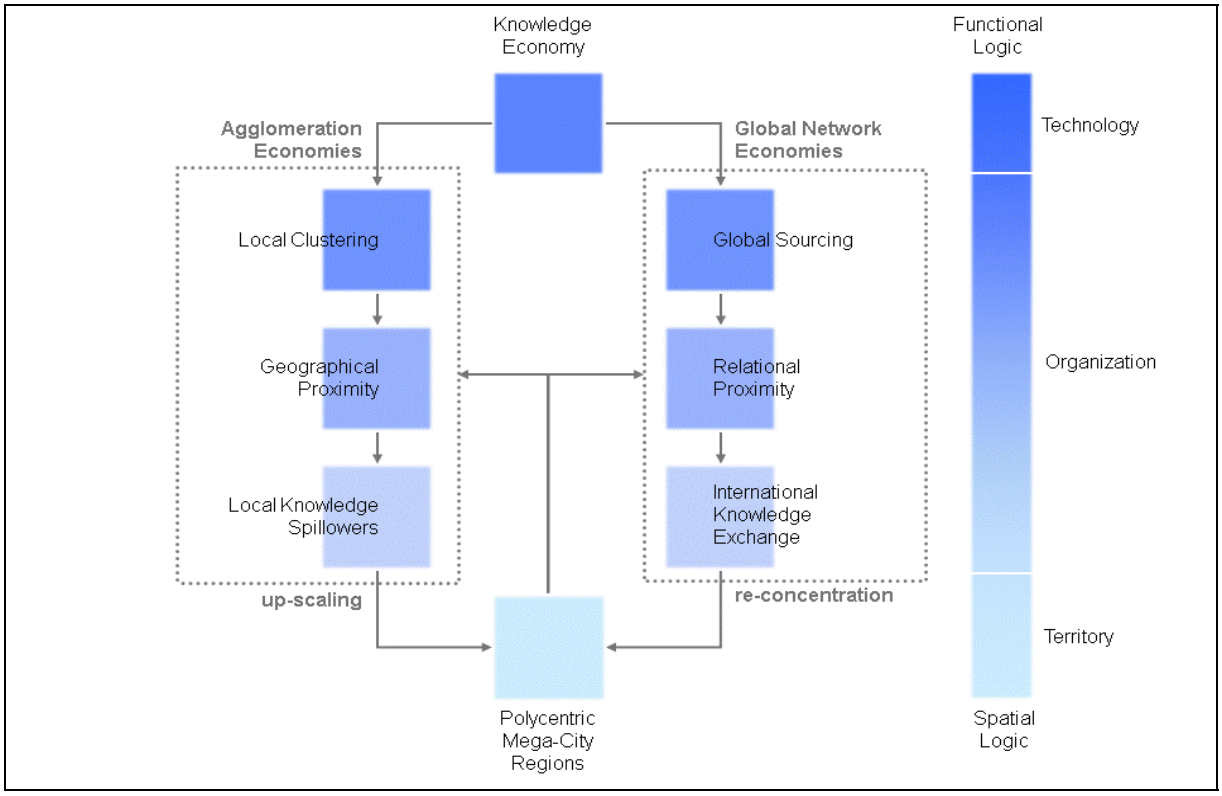

Figure 1: Agglomeration economies and global network economies in the context of Mega-City Region Development (Own illustration).

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