

# Towards a relational planning approach? Case studies in the airport regions of Amsterdam, Barcelona and Munich

4th Joint Congress of the Association of Collegiate Schools of Planning (ACSP) and the Association of European Schools of Planning (AESOP).  
Chicago, United States of America. July 6<sup>th</sup> – 11<sup>th</sup>

**Bart de Jong**, Utrecht University, Faculty of Geosciences.

*Address:* P.O. Box 80115, 3508TC, Utrecht Netherlands. Tel: +31(0)30-2532738

E-mail: [b.dejong@geo.uu.nl](mailto:b.dejong@geo.uu.nl)

**Pere Suau-Sanchez**, Universitat Autònoma de Barcelona, Departament de Geografia

*Address:* Edifici B - Campus de la UAB, 08193 Bellaterra (Cerdanyola del Vallès).

Tel: +34 93-5814805

E-mail: [pere.suau.sanchez@uab.cat](mailto:pere.suau.sanchez@uab.cat)

**Michael Dross**, Technische Universitaet Muenchen, Faculty of Architecture

*Address:* Arcisstraße 21, 80333 München, Germany. Tel: +49(0)89-289-22142

E-mail: [dross@tum.de](mailto:dross@tum.de)

## Abstract

The aviation industry is constantly evolving. Airports are not simply airfields anymore; contemporary international airports are one of the most important hot-spots in metropolitan regions. The development of airports and the increasing expansion of European metropolitan regions, together with the rising economical potential of the airport area, make planning the airport region an intricate process. Conflicts are further enhanced through an increasing "glocal" complexity, understood as the constant tension between local and global market driven interests. Not only joint strategies for spatial development are strongly needed to manage future growth, but also a regional governance approach for airport regions in general seems to be necessary.

After introducing a relational planning framework, we will elaborate on the practical implementation of this framework by discussing three case studies: Munich Airport Region, Barcelona Airport Region and Amsterdam Schiphol Airport Region. By reflecting on these three cases we show that the conflicts around airport enlargements do not only base on aircraft noise and the sites for buildings and runways. We argue that there are additional conflicts arising with unsolved problems of regional spatial development like congestion, traffic noise and high infrastructure costs. These conflicts are emerging as a result of persistent traditional planning approaches. Traditional planning is sectoral and territorial orientated, while relational planning takes into consideration the complex multi-level dynamics of current developments in airport regions.

Consequently, planners should link together different spatial development conflicts, for instance conflicts arising because of growing populations in airport regions. Then different spatial scales must be linked together, such as the vicinity of the airport, the metropolitan region, and the state. All different actors and stakeholders have to be considered. We argue that ignoring this complexity makes current conflicts about airport extensions more complicated to solve then ever.

**Keywords:** Amsterdam Airport Schiphol; Munich Airport International; Barcelona Airport, airport, air transport, airport region, spatial development, complexity, relational planning approach

# 1 Introduction

The aviation industry is constantly evolving. Airports are not simply airfields anymore; contemporary airports function as dynamic nodes in metropolitan regions where local and global interests meet. Dealing with these partly parallel and at the same time intersecting universes is a difficult task for any airport planner worldwide, that involves many different and often articulated actors (Droß and de Jong 2007). It is no surprise that governments find it hard to deal with the current hybrid society as economic and social shifts entered the domain of the state, politics and administration, elite networks, lobby groups and social movements, stretching between and across cities, regions and countries. As a result, next to the government a growing number of public and private actors emerged that try to influence the spatial planning to their advantage, fragmenting and disintegrating it along the way (de Jong 2008).

Actor conflicts in the planning process are further empowered through an increasing *glocal* complexity, understood as the constant tension between local and global market driven interests. Not only joint strategies for spatial developments are needed to manage future growth, also a regional governance approach for airport regions in general seems to be necessary. However, current spatial planning frameworks seems to neglect these notions as it is still mainly dominated by a Euclidean conception of place and the assumption that space and time act as little more than objective and external containers. Traditionally, plans, maps, graphical representations, contours and reports are made to conceptualize the envisaged reality. Governments seem to acknowledge the network society and the need to search for new administrative concepts, but not one unambiguous vision or consistent strategy linking different spaces and times is converted into reality. On the contrary, in the attempt to deal with the *glocal* complexity, governments produce an excessive number of plans and form new deliberative bodies (Nel-lo 2003, Subirats 2007). This leads to a higher level of complexity in the form of unclear roles and a policy making patchwork quilt or excessive governance: there is simply too much co-ordination that is seen as oppressive and obstructive (Cerfontaine 2006, Wijk 2006). In this sense, traditional planning does ignore *glocal* complexity. We should try to understand the current high level of complexity as a way to reach a more effective urban management and planning process (Suau-Sanchez 2008).

We believe that it is time for a more relational view on planning that can help to understand the current complexity in the decision-making process by enhancing the relation among the different actors involved. Also a relational view helps to understand that different spatial scales are linked together, thus crucial issues of *airport* development and *airport region* development have to be brought together. Next we learn to have a relational view concerning time, which is needed while observing sudden changes in deregulated markets and ecosystems. Taking this into account, the research questions that will guide us are: a) What are the main gaps that can be identified when looking at desirable airport region planning for the contemporary network society and already existing planning frameworks? b) What kind of planning approach could be helpful to bridge these identified gaps

The paper will try to answer these leading research questions according to the following structure: chapter two will elaborate why planning the contemporary airport (region) is

becoming a more intricate process by discussing the new articulation of global and local processes and the consequences it has for the aviation industry and airport regions. To conclude the second chapter, we will outline a relational planning framework. Then, in chapter three we will introduce the case studies of Amsterdam Schiphol Airport region, Barcelona Airport Region and Munich Airport Region by conducting a spatial-economic and institutional analysis to see if existing traditional planning approaches in these airports are able to cope with the *glocal* complexity that influences major airport regions worldwide. To conclude, chapter four will address the second research question and will discuss to what extent relational planning can reduce the level of complexity and deal with the current multi-level dynamics in airport regions planning.

## **2 Theoretical framework: From airfield to airport region**

### **2.1 The complex articulation of global and local dynamics**

Space and time are traditionally treated as consisting of three dimensions: length-width-height and yesterday-today-tomorrow. However, in a globalising world, space and time are more than mere three dimensional concepts; they are effectively produced and created through social actions within and between places: “cultures, economies, social worlds, politics and environments all become driven by logics of increasingly intense interconnections and flows, over larger and larger geographical scales” (Graham and Healey 1999: 11). Places become articulated moments in networks of social relations. Still, a globalising world does not mean that place no longer matters. Robertson (1995) believes that the general myth of globalisation is that it is a rather casual way as referring to very large-scale phenomena and to believe that locality is neglected. Although the global and the local seem complete opposites, they may be regarded as two sides of the same coin. To improve the understanding of place and its dual nature Robertson (1995) introduces the term *glocalisation*. The notion of *glocalisation* is used in a more sociological manner to explain how the polarity between the global and the local (or the universal and the particular) is inaccurate. The global does not exclude the local; globalization involves the linking of localities. In other words: regions and localities become integrated in international networks that link their most dynamic sectors (Castells 1996, Robertson 1995). Castells (1996) states that the forces of globalization have triggered a technological revolution centred around information technology that is reforming our society into a network society. This network society is characterized by an increasing and paradoxical worldwide interdependency, blurring and redefining boundaries and flows of people, products, services, capital and information that gain independence. This means that traditionally fixed and geographical regularities become less and less relevant. Spatial contiguity is no longer an exclusive precondition for social and economic interaction. Activities can become footloose and are no longer bound to specific places. Nevertheless, it is wrong to believe that we live in a borderless world. Instead, the world’s increasing interdependency triggers an increasing complexity, interconnectedness and volatility, where boundaries are becoming more and more permeable. Hence, the space of places and the space of flows co-exist in harmony as well as disharmony (Castells 1996, Dicken 2004, Boelens 2005).

Airports play a crucial role in the network society concerning the exchange of information. Air transport is the only transport mode that has permitted to eliminate the

global friction between space and time (Suau-Sanchez 2008). One of the most outstanding features of the knowledge economy is competition. In such competitive environment, Information Communications Technology (ICT) gives a flexible respond to rapidly changing market conditions. However, face-to-face contacts are still important (van den Berg and Braun 1999). This is so because the knowledge economy shows a determinant difference between codified knowledge and tacit knowledge. The former aspect consists of information widely available to everyone through ICT. On the other hand, tacit knowledge consists of information available only to a limited number of people and requires face-to-face contacts for its transmission (van den Berg *et al.* 2004). Air transport network allows fast travelling to attain business face-to-face contacts. Schaafsma (2008: 70) states that “globalisation is about an information revolution and about a revolution in the transportation of people and goods”. So, air transport becomes crucial in people flows but also in cargo flows, especially for transporting perishable goods and cutting-edge electronics (Leinbach and Bowen 2004).

The network society not only triggered a higher level of complexity in global level relationships, but also a growing complexity concerning the decision-making process at the local scale for those planners that try to find the balance between local and global interests. Economic and social shifts enter the domain of state politics, elite networks, lobby groups and social movements, stretching between and across cities, regions and even countries (Dicken 2004, Boelens 2005, Burghouwt 2007). Established policy discourses are challenged, traditional arenas and government networks questioned, and actors search for new relationships with other stakeholders in both economic and socio-cultural spheres (de Jong 2008).

In this context airports become a multi-interpretable concept: airports are facilitating companies, business parks, urban complexes, polluters and so on. So, while on the one hand airports are clearly dedicated to global objectives and network building, on the other hand they find it difficult to cope with their direct surroundings, local inhabitants and other local stakeholders. In this way, airports seem to be fragmented into the material organization of time-sharing practices that work through flows on the one hand, and ecologically and historically rooted spatial organizations that dominate bounded geographic spaces on the other.

## **2.2 An evolving air transport sector**

The growing demand of air transport due to globalisation requires a likewise growing supply. The adaptations of the supply side to reach demand have to do with the ongoing process of deregulation. Deregulation started in 1978, when the United States of America enacted the *Airline Deregulation Act* on the 24th of October (Bouwens and Dierikx 1997). Another effect of the deregulation act was that airlines were no longer committed to one airport. Therefore, from that day on US airports had to do their best to retain their home carrier. Thanks to the deregulation of the American aviation sector and the positive outcomes that resulted from this, Europe also decided to deregulate the market gradually. This happened from 1987 until April 1997. Slowly but surely international competitiveness emerged within the aviation sector (Hakfoort and Schaafsma 2000, Burghouwt and Huys 2003).

In terms of network configuration, the deregulation introduced the hub-and-spoke principle. This means that direct flights from and to smaller airports were more and more replaced by indirect flights through a central bigger airport, otherwise known as hub. At

the same time, because of a free market system, airlines that are less spatially concentrated at the hubs emerged: the so-called low-cost carriers. Because of these no-frills-airlines, the full-service airlines experience cutthroat competition on their non-intercontinental origin destination network. As a consequence of the low-cost pressure, the privatization of the former flag-carriers, and the fact that the aviation sector is a low-margin business, full-service airlines were forced to establish alliances such as Skyteam, Oneworld and Star Alliance. These alliances are survival measures, in fact, according to De Neufville and Odoni (2003) deregulation takes away any impediment with a rapid change, it increases the volatility of overall traffic at airports. Therefore, we could conclude that deregulation is a vector that increases complexity.

As a result of this volatile character of contemporary aviation, large airports have evolved into multi-service platforms to distribute the risks and reduce the dependence on aeronautical revenues. Now, airports offer “urban” services such as shopping, entertainment and office buildings, and operate more and more as private companies. Besides these non-oriented airport activities, the growth of air traffic leads to an increasing supply of airport-related activities such as courier services, catering companies, and logistics distribution centres. The combination of non-oriented and airport-related activities can be defined as the airport city. The airport city is “the more or less dense cluster of operational, airport-related activities, plus other commercial and business concerns, on and around the airport platform. However, this cluster is called an airport city only if it shows the qualitative features of a city (density, access quality, environment, services)” (Güller and Güller 2003: 70).

### **2.3 Emerging airport regions**

The influence of an airport goes far beyond the airport city. Airports affect the regional economy in three ways. First of all there are the direct effects, which include all investment, running expenses and employment that accrue on the airport premises. Secondly indirect effects account for all the income and employment, which are generated through supplying the airport firms from the outside. Finally, there are the induced effects, which describe the aggregate spending power of the direct and indirect employment of the airport firms. So far, an airport would create similar effects like any other manufacturing or services activities on the same site. Hub airports on top generate network effects, which come along especially with the characteristics of air traffic. Catalytic effects base on to the rising accessibility, if an airport is opened or extended, which saves time for the passengers and improves the locational factors for the regional economy (Droß and Thierstein 2007).

Hence, large airports are becoming more than airport cities, they are new hot spots in the metropolitan areas for regional development. Airports have an excellent location, since “the position in relation to the main city centre has become less important than a strategic position within the regional context” (Güller and Güller 2001: 31). Through catalytic impacts the airport influence reach far beyond the city and the city region; it affects the wider region. We are talking about functional regions such as South-East England, the Dutch Randstad and Northern Switzerland. These regions get different appellatives: mega-city regions (Hall and Pain 2006, Thierstein *et al.* 2006) or global city regions (Scott 2001). Airports are one of the main gateways of these urban knowledge regions and facilitate the accommodation of face-to-face contacts.

So, airports work as growth engines beside the core cities and contribute to the formation of new functional regions. A current comparative study of the airports of Amsterdam, Frankfurt, Tokyo Haneda and Tokyo Narita by van Wijk (2007) demonstrates that the second highest office rents after those of Central Business Districts are found near the airports. In the Dutch Randstad, the rents at Schiphol airport are even higher than at the traditional downtown area (van Wijk 2007). Airports, as contributors to the formation of functional urban regions, not only transform airport cities; regions are also starting to be articulated and structured in reference to the airport. This greater airport area can emerge in a coordinated way – as in Kuala Lumpur – or in a more organic way – as in Denver (Schaafsma 2008). We will call these greater airport areas *airport regions*.

The success of airports and airport regions does not necessarily mean that the potential of the airport as growth engine is used. Van Wijk (2007) states that insufficient infrastructure and poor quality of land use, contributes to the lack of awareness for the crucial function of airports and airport regions. “The airport is often considered as a gateway to the world, but not as a gateway to the city-region” (Hartwig 2000: 66). Schaafsma (2008: 78) endorses this idea as airport regions “are a new reality, often still overlooked by planners and policy makers”. Hartwig (2000) recommends taking the airport out of its isolation and making the airport itself more responsible for its direct environment by a more open planning process with the airport taking on a more important role in regional planning.

Nevertheless, with linking global networks together airports play a highly important role for Mega-City Regions. Primarily hub airports deliver international accessibility and make their vicinity, the airport region, compatible with the global economy. Therefore hub airports are more than just large sites with runways, large employers and nodes in an international infrastructure network. Their importance is more comprehensive; we believe that, relating to their influence, this importance is even comparable with a large city.

## **2.4 Towards a more relational planning framework**

These profound spatial changes concerning the large influence of airports and emerging functional regions are difficult to link together with the traditional territorial thinking of concerned actors. Next to the government a growing number of public and private actors comes into existence, which try to influence the spatial planning to their advantage. This makes the process of policy making much more difficult. Decision-making was once the domain of the governments, but nowadays it takes place in more informal, network type configurations (Wissink *et al.* 2003). The government no longer appears as the focal point but just as one of the many players in these network type configurations. As a result governments and planners find themselves in the midst of whirls of complexity and conflict, performing difficult institutional work in building new policy perspectives and ideas through which to attempt to shape key aspects of (spatial) development (Healey 2007). Functional regions add complexity to this planning configuration since they are not easy to perceive or define; they differ from the territorial defined administrative entities. We believe they are constituted by their functions and networks, which are not always directly perceptible (Droß *et al.* 2006). Additionally, functional regions are connected to several spatial scales from the local to the global. Simultaneities of local development needs and global market influences render them to *glocal* regions. Actors and institutions from different scales – local, regional, state, EU – influence functional regions forming a multi-level system. The ongoing fragmentation and reclusterings of

economic, social and political constellations in fact ask for a fundamental reorientation of planning theory and practice, taking heterogeneous developments and structural and/or sustainable items at the same time (Boelens and de Jong, forthcoming).

We believe that airport planning needs a reconfiguration in order to become “increasingly relational and actor-oriented, rather than setting contextual and geographical conditions” (Boelens and de Jong 2006: 111). This relational viewpoint perceives places and humans not only in direct relation to their environment, but in relation to other connected places and activities. In order to analyze a particular space or spatial question, we must follow the actors or stakeholders and the networks of relations that they form. Thus, relational planning does not consider a plan or a project as the focal point when it comes to spatial developments, but the actors. The theory believes that generalizations about desirable spatial forms, dominated by narrow pursuits of understanding, should be replaced by the comprehension that *social processes* and *spatial form* are related (Healey 2007). Complex interactions, linking public society, civil society and the business society in diverse, uneven ways, form relations, networks, communities and institutional practices either in synergy or conflict. Through such interactions, place must be seen as a stage where complex, shifting and conflicting relations shape the meanings, values and knowledge by which daily life is experienced and constituted. Spatial strategies emerge from specific situations understood as structured by different times and spaces (de Jong 2008).

In this manner it makes no sense to approach airport regions as clear and unambiguous objects. Conflicts about spatial developments concern actors, institutions and networks on different spatial scales from the local, to the national, to the European and global scale. Not only the connection between actors and spatial issues is important, furthermore links between different issues have to be considered. Traditional planning approaches often do not take connections into their account. For instance land-use and transport are connected (Pujinda 2006). However land-use and transport are often planned separately. Another crucial factor is time. Fast changes in the aviation market face long-term conflicts in airport regions.

To deal with the *glocal* complex dynamics indicated above, we believe that we need to reconsider the importance of all influenced and influent actors that reconfigure their coalitions and attitudes to adapt to the constantly evolving *glocal* environment. This reconsideration requires an entirely new sort of planning approach to deal with different spatial conflicts, different spatial scales, different times and stakeholders of the spatial conflicts which are emerging with airport extensions and spatial development in airport regions.

### **3 Airport regions of Amsterdam, Barcelona and Munich**

We have shown how airports evolved functionally from one-dimensional transport junctions towards more multimodal network cities where the space of flows and the space of places meet. First, we stressed a changing role of place and distance and the emergence of *glocal* places. Second, airports changed their business model by offering more and more “urban services”, which influence their vicinity. Third, this influence triggers spatial restructuring; a process, which we think generates a new type of functional region that we call airport region. This restructuring process leads to spatial development conflicts. Finally, the role of governments changed and many new actors arise in these multi-level systems.

Our hypothesis is that the traditional planning systems did not adapt to these crucial changes and developments. This lack of awareness can trigger conflicts about new runways and airport extensions and other complex spatial developments. In this chapter we conduct a spatial economic and institutional analysis of three airport regions to show how traditional planning approaches do not seem capable of dealing with *glocal* complexity that influences major airport regions worldwide. Afterwards we will discuss to what extent relational planning can cope with the new situation.

### 3.1 Airport region of Amsterdam

Amsterdam Airport Schiphol (AMS from now on) was founded in 1916, originally as a military airfield. Nowadays, Schiphol covers 2,878 hectare in the municipality of the Haarlemmermeer (van Wijk 2007). In 2007 the airport, which currently operates six runways, handled 47.8 million passengers, a growth of 3.8 percent compared to 2006. Schiphol had 267 scheduled destinations in 2007. Furthermore, 59 percent of all air transport movements were made by Air France-KLM and its partners and 12 percent by low-cost carriers (Schiphol Group 2008). AMS mostly handles transfer passengers.

**Figure 1: Amsterdam Airport Schiphol bird-eye picture. Source: Schiphol Beeldbank, 2007.**

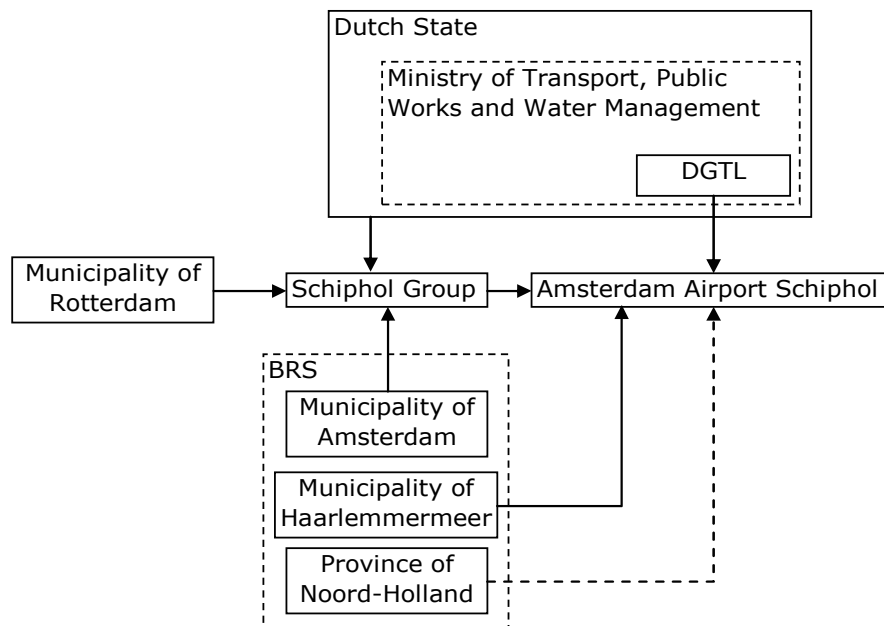


#### 3.1.1 Institutional framework

The limited liability company NV Luchthaven Schiphol (Schiphol Group from now on) formed by the end of the fifties manages the governmental-owned airport. Shareholders of Schiphol Group are the Dutch state (76 percent), the city of Amsterdam (22 percent) and the city of Rotterdam (2 percent). Thus the national government is the largest shareholder and therefore is responsible for the institutional settings. Within the national government, the Ministry of Transport, Public Works and Water Management – to be more precisely, the Directorate-General of Civil Aviation and Freight Transport (DGTL) – is responsible for the Schiphol file. These institutional settings are stipulated in chapter

eight of the Aviation Act, the so-called “Schiphol Act”. This act was enacted when the fifth runway came into operation in 2003. The act consists of the “airport planning decree” (*luchthavenindelingsbesluit* in Dutch, LIB) and the “airport traffic ruling” (*luchthavenverkeersbesluit* in Dutch, LVB). The first one regulates spatial developments around the airport, taking into account safety norms and noise contours. The LVB regulates air traffic around AMS. These are mostly rules for the aviation sector (airport, Air Traffic Control the Netherlands and airlines) to limit the adverse consequences of air traffic (Ministry of Transport, Public Works and Water Management 2004). In addition, the Aviation Act stipulates the function, tasks and powers of enforcement agencies such as the ministerial inspectorates, the responsibilities for Air Traffic Control of the Netherlands (LVNL) and the duties of the Schiphol Regional Consultative Committee (CROS) (Staatsblad van het Koninkrijk der Nederlanden 2002). Next to the Aviation Act, the Minister of Transport, Public Works and Water Management designated the Stichting Airport Coordination Netherlands in 1998, a foundation which is responsible for the allocation of available slots at Amsterdam Airport Schiphol, Eindhoven Airport and Rotterdam Airport (SACN 2007).

**Figure 2: Institutional framework of Schiphol. Source: Authors’ own elaboration.**



On a regional scale, focussing on regional planning issues, the “Bestuurlijke Regiegroep Schiphol” (BRS) exists, consisting of the provinces of Noord-Holland, Zuid-Holland, Utrecht, the municipality of Amsterdam and Haarlemmermeer and thirty other municipalities affected by the airport. However, the most important actors are Noord-Holland, Amsterdam and Haarlemmermeer. BRS has no legislative powers, but can be seen as a strong lobby group, consisting of parties which do have legislative powers. The first one is the province of Noord-Holland, which makes regional plans. These plans are not legally binding in a direct sense. However, the detailed zoning plans of the second party with legislative powers, the municipality of Haarlemmermeer where AMS is

located, are legally binding spatial plans in the Netherlands, and should fit the framework of the regional plan.

### **3.1.2 Spatial economic framework**

The volatile aviation market and increasing competition had two major consequences for AMS. First, the airport could evolve into an important intercontinental hub. Because of a small catchment area transfer passengers had always been important for Schiphol, but by the 1980s the number of transfer passengers grew faster than the total amount of passengers (Boelens and de Jong 2006). Hub carrier KLM most definitely contributed to this hub forming. KLM was the first airline to enter successfully into an open skies agreement with North America, leading to a domination of the trans-Atlantic market. Although the merger between KLM and Air France in September 2003 threatened the hub-status of AMS, because of a possible shift towards Charles de Gaulle in Paris, agreements between Air France-KLM and the Dutch government made sure that this status is assured until 2008 (van Wijk 2007). Second, deregulation triggered a further commercialization of Schiphol. Landside revenues gained importance (van Wijk 2007, Schaafsma 2008); actually, Schiphol Group obtains higher yields with its landside activities than with aviation operations. In 1995, Schiphol Plaza, a shopping mall accessible for everyone was inaugurated and Schiphol Real Estate delivered its first projects. In 1997 Schiphol Group created the airport city concept, which in combination with the hub-status, exploits the economic potential of the airport vicinity. This concept suggests that the airport should be viewed as a city and a perfect stopover in the travel process where the visitor should be offered a unique experience. Another cornerstone of the concept is the development of commercial real estate on airport land (Schaafsma 2008). The airport city formula is also rolled out internationally, with Schiphol having shares or participating in several airports worldwide such as JFK International New York, and Brisbane Airport (Boelens and de Jong 2006).

### **3.1.3 Airport region**

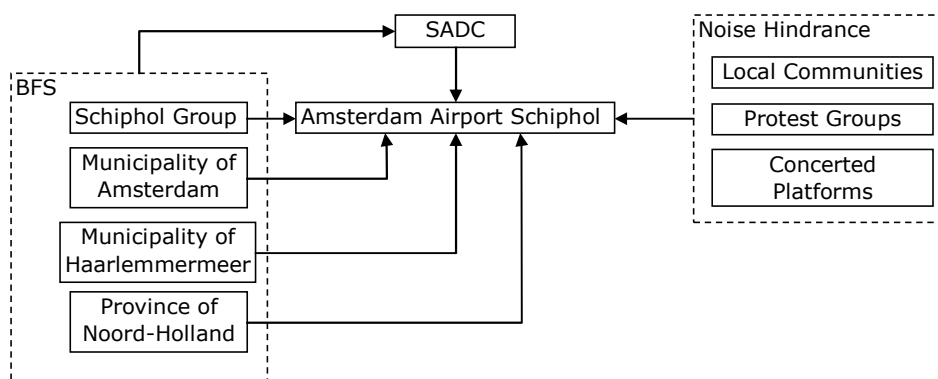
AMS actually lies within the boundaries of the municipality of Haarlemmermeer, but is normally perceived as being part of the greater metropolitan area of Amsterdam. The effects of the airport on its direct surroundings are enormous, from noise nuisance, to spatial restrictions, to the creation of jobs and international competitiveness. For example, CROS registered 637.362 complaints in 2007. In that same year AMS generated more than 62.000 direct jobs and even more indirect jobs in the region, especially in trade, logistics and businesslike services. Furthermore, AMS attracted European Headquarters and Distribution Centres in the region (Ministry of Housing, Spatial Planning and the Environment 2006, Schiphol Group, 2008). Therefore the enormous importance of the airport for Dutch prosperity in the global network economy is emphasized by several national plans and reports. At the same time, authorities stress that economic growth should be feasible without environmental deterioration: the so-called *double objective*.

However, despite the widely accepted importance of AMS for the Netherlands as a whole, and preliminary plans to realize an airport corridor between the Airport and Amsterdam, there is no real coordinating regional plan. Nevertheless, we could say that there is a quite important interaction between the airport and the surrounding local, regional and national authorities. This relationship is based on a sharp spatial-economic zoning that consists of so-called *Platformrelated*, *Schipholrelated* and *Schipholoriented*

economic activities. This distinction was mostly motivated by the consideration of using the scarce land around Schiphol effectively, increase the competitiveness of the region as a whole and prevent unnecessary congestion at the landside of the airport (Provincie Noord-Holland 2007). The airport itself is responsible for the platformrelated activities; the development of these activities is carried out by Schiphol Real Estate that develops and exploits the buildings at the airport area itself. For the Schipholrelated activities the region was made responsible. Therefore, Schiphol Group, the municipalities of Haarlemmermeer and Amsterdam and the province of Noord-Holland – together called the “Bestuursforum Schiphol” (BFS) – established the Schiphol Area Development Company (SADC). All parties participate in this constellation with land, resources and expertise. In this sense SADC, as a private organ, serves the interests of all its shareholders while competing with other private parties operational in the Schiphol area. Finally, Schipholoriented activities focus on high-quality business sites for both logistics and the service industry. The surrounding municipalities within the framework of the general policy of the national and provincial authorities are responsible for the realization of this last category as these sites are mostly located outside the airport area (Boelens and de Jong, forthcoming).

Ironically, the most important issue on the airport region scale is believed to be noise hindrance. The current discussion about future capacity is dominated by the noise nuisance issue and to a lesser extent by economic advantages that the airport creates. Furthermore, official noise contours restrain developments in the region, making planning a highly urbanized area not an easy task (Boelens and de Jong, forthcoming). It can be concluded that the double objective seems to be unfeasible. It became an unrewarding and paradoxical task to find a durable balance between economic development and environmental sustainability, as in practice economic growth and environmental sustainability were not always reconcilable because of an abundance of incompatible interests. Schiphol Group is held responsible for this by the direct surroundings. The realisation of the fifth runway in 2003 and the extensive network of enforcement points did not bring the economic and ecological relief that was expected.

**Figure 3: Regional framework of Schiphol. Source: Authors' own elaboration.**



### 3.1.4 Gaps in traditional planning approaches

There are three important matters in the Schiphol file: international competitiveness, regional noise nuisance and planning conflicts as a result of limited available

development sites. Despite the fact that these more or less paradoxical matters were brought together in the double objective, a gap appears between official national ambitions regarding AMS stipulated in national acts and traditional planning approaches, as well as the actual daily airport affairs where global and local interests collide and unite. On the one hand the enormous importance of the airport for Dutch prosperity in the global network economy is stressed, but on the other hand no one wants to take full responsibility for this so-called 'political headache portfolio'. The last five years have been turmoil: the new runway came into operation, the total amount of complaints increased considerable and political dissension and a climate of distrust arose. Therefore Schiphol became an emotional charged topic with a growing number of parties – from governmental to commercial – involved in the decision making process.

The disturbed relationships have an impact on the policy making process. While concerned actors try to solve the crisis of confidence by forming new deliberative bodies, excessive governance arises, which means there is simply too much co-ordination that is seen as oppressive and obstructive (Cerfontaine 2006). Thus there are many actors concerned with Schiphol and severe dissension has arisen between these actors. All together this results in a lack of trust, unclear roles and a policy making patchwork quilt (van Wijk 2007). Prevailing policies seem not to solve this political stalemate. They are mostly characterized by ad hoc decision-making, enabling legislations, typical Not-In-My-Back-Yard behaviour and a lack of collaboration when it comes to spatial developments.

## **3.2 Airport region of Barcelona**

Barcelona airport (BCN from now on) is located 10 kilometers from the city of Barcelona in the delta of the Llobregat River within the municipality of el Prat de Llobregat. BCN is Spain's second largest airport in terms of passenger traffic, and in the period from 1996 to 2001 was the second fastest growing European airport in terms of passenger traffic. Since the Olympic Games in 1992 passenger traffic has grown by more than 100 percent, such that in 1992 the airport had 10 million passengers, and in 2004 had 24.5 million. With 33 million passengers in 2007, it is the 2<sup>nd</sup> most important airport in the Euro-Mediterranean region after Rome. Moreover, the Barcelona-Madrid air shuttle service is the busiest city-pair connection in the world (OAG 2006). Since a couple of years, it has three runways; two of them are parallel and can operate independently.

### **3.2.1 Institutional framework**

BCN is classified as a general interest airport facility and its management is carried out by AENA, (*Aeropuertos Españoles y Navegación Aérea*) a Public Business Entity with its own legal character. It is listed in the Ministry of Transport and Infrastructures (*Ministerio de Fomento*), which monitors the activity of AENA. The main goal of AENA is to manage civil airports of general interest and the facilities and networks of air navigation assistance. More particular, the goals and functions of AENA are: a) The disposition, management, coordination, operation, maintenance and administration of public civil airports. b) The planning, execution, management and monitoring of investments in infrastructure and facilities. c) The disposition, management, coordination, operation, maintenance and administration of aeronautical telecoms facilities, navigational aid and air traffic control. d) The development of order and safety services in the facilities under its management, as well as the participation in specific training related

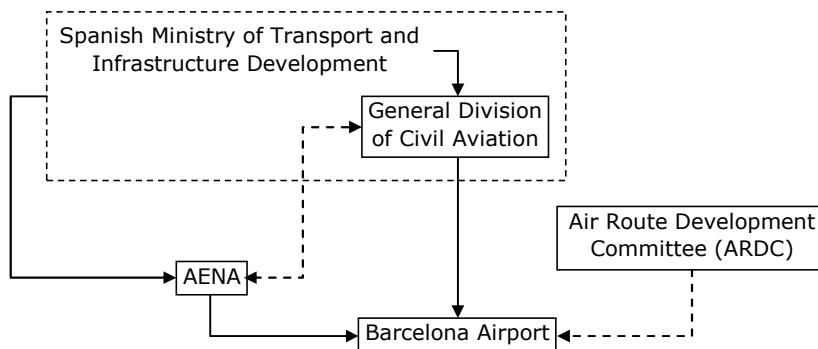
to air transport and subject to the granting of an official license, all without detriment to the powers assigned to the General Division of Civil Aviation.

**Figure 4: Barcelona Airport bird-eye picture. Source: AENA.**



Hence, the institutional framework of BCN is a top-down structure in which almost every decision depends on AENA and the Spanish Government. Besides, there is the already mentioned General Division of Civil Aviation that is integrated within the Ministry of Transport and Infrastructures and its functions are more focused in the safety navigation management, the license certification for pilots, the negotiation and management of the air service bilateral agreements among other functions.

**Figure 5: Institutional framework of Barcelona Airport. Source: Authors' own elaboration.**



### 3.2.2 Spatial economic framework

BCN is a successful airport in terms of passenger growth; during the last decade it has had an average annual growth between 7 to 10 percent in passenger traffic. An important part of this growth should be imputed to the important role of low-cost carriers during the

last years. While in 2001 the share of passengers flying with low-cost carriers was 11 percent, in 2007 this percentage rose up to 32 percent. The unresolved matter at Barcelona airport is that of intercontinental flights. In December 2006 and after the closing of four intercontinental connections (Bogotá, Guayaquil, Santiago de Chile and Buenos Aires) by the bankrupt AirMadrid, Barcelona airport only offered 9 intercontinental flights. This numbers have risen, but still are below the average for an airport of this size (AENA 2007, Bel and Fageda 2006).

The low number of intercontinental flights, the Iberia's cut down on flights and bet for the airport of Madrid, and the null participation of the local institutions in the airport management motivated the creation of the Barcelona Air Route Development Committee (ARDC), formed by the Public Works Department of the *Generalitat* (Catalan Autonomous Government), the Barcelona City Council, the Barcelona Chamber of Commerce and AENA. This Committee has as a main objective to get new intercontinental routes for BCN, as well as working on the maintenance of the present ones. Thanks to the actions taken by ARDC, during the 2007 winter season there were intercontinental continental connections with 24 destinations. Besides, there were intercontinental cargo flights with Dubai, Shenzhen and Hong Kong (ARDC 2008).

Currently, the airport is finishing its expansion plan (AENA and Ministerio de Fomento 1999). The main improvements are a new third runway near the coast line (already working), a new terminal building between the two parallel runways, a people mover for inter-terminal transits, a new maintenance and cargo areas and a new airport city business district. All these investments will be finished by 2009 and will allow to rise the capacity from 23 to 52 million passengers a year and from 52 operations per hour to 90 operations per hour.

### **3.2.3 The airport region**

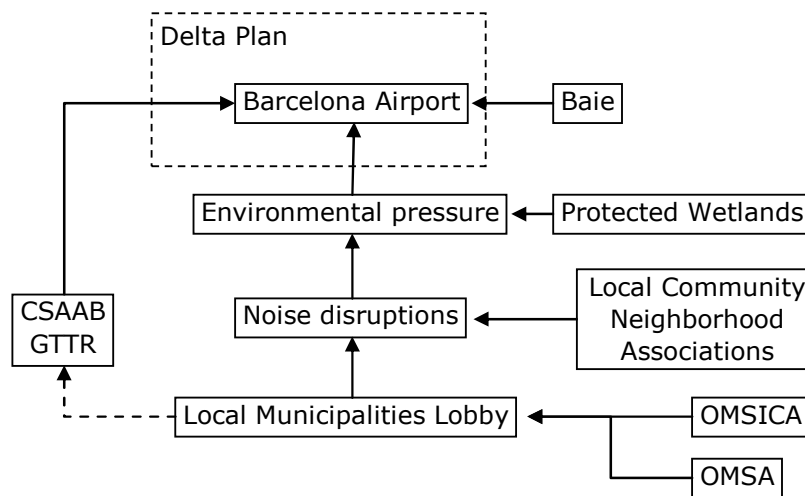
The BCN enlargement project is part of a wide regional infrastructure project called Delta Plan. The Delta plan, also marketed as The Euro-gate, is an agreement for cooperation in the infrastructure and natural environment of the Llobregat River Delta; so, although it is called a plan it is just a cooperation agreement to open a political opportunity window to permit the realization of all the strategic infrastructures planned by different administrations in the delta area. It was signed on April 16th 1994 at Prat de Llobregat municipality by all the administration levels present at the area, which are: Spanish Ministry of Transport and Infrastructures (*Ministerio de Fomento*), the *Generalitat* of Catalonia Government, the Comarcal Council of Baix Llobregat, the Commonwealth of Municipalities of the Metropolitan Area, and the City Halls of Prat de Llobregat and Barcelona. This agreement establishes a list of plans and projects to develop with the goal of transforming the Llobregat Delta in the major logistic center of the south of Europe. It also determines that all parts should adapt their planning to the planning directives defined in the agreement. The Delta Plan wants to take advantage of the synergies created by the Airport and the Port, as well as by the train and road networks, to consolidate Barcelona Metropolitan Region as the most important center in the Mediterranean Axis (Alemany 1995, Baró 1995, Trullén 1995, Suau-Sanchez 2007).

Besides the Delta Plan, there is an important organization promoting the aeronautical and space industry on the regional scale. This is the Barcelona Aeronautics and Space Association (Baie). Baie is a platform created in November 2000 that aims to promote the Metropolitan Region of Barcelona as a competitive setting for the activities related with

the aeronautical and space industry. Baie counts 93 members that can be divided in various categories: companies, supporting institutions, universities and research centers, financial institutions and new venture capitals. Baie and Barcelona airport region have to face fierce competition within Spain. Currently, 60 percent of the aerospace industry turnover is created at Madrid, 15 percent at Andalucía and another 15 percent at the Basque Country. Catalonia's turnover in aerospace industry today represents only 5 percent. (Baie 2008).

Airport master plan developments and airport management are responsibilities of AENA. This unilateral approach to sectoral planning crashes with the complexity of the local planning framework. In Catalonia, municipalities are responsible for urban and land-use planning and the usual situation is a lack of regional coordination. The Urbanism Commission of the Generalitat Government can block developments proposed by municipalities in order to avoid regional incoherencies, but the Commission seldom blocks a municipality proposal. In this sense, the lack of coordination between airport planning and municipal decisions has led to important problems related with noise disruptions.

**Figure 6: Regional framework of Barcelona Airport. Source: Authors' own elaboration.**



The main regional spatial problem related with BCN is environmental pressure. The airport is located in the delta area of the Llobregat river and it is surrounded by various wetlands protected by the Nature Network 2000 and the PEIN (*Pla d'Espais d'Interès Natural*). These wetlands act as a buffer between the airport and the urban areas, but also represent a constrain for future airport enlargements. However, the real environmental problem is the noise disruption caused by the planes taking off from the airport. Mainly, two kinds of stakeholders confront the airport activity; local communities and local municipalities. The strong pressure done by these two actors motivated the creation of the Technical Working Group for Noise (GTTR) within the Environment Monitoring Commission of the Enlargement Developments of Barcelona Airport (CSAAB). The GTTR meets with AENA professionals and the Barcelona, Gavà, Castelldefels, Sant Boi de Llobregat, Viladecans and el Prat de Llobregat City Councils representatives to monitor the noise impact and take the right decisions. Since the new third runway came

into operation in 2004 the runways have suffered several changes to their configurations as a result of the disturbances created, especially in the coastal neighborhood of *Gavà Mar* (Suau-Sanchez 2007, AENA 2005). The current agreement within the GTTR is to maintain the segregated runways configurations that cannot provide full capacity (90 movements per hour), which can only be achieved with an independent runway configuration, but creating more noise impact (AENA 2005).

### **3.2.4 Gaps in traditional planning approaches**

Several conflicts arise and unresolved issues persist in the airport region of Barcelona. The liabilities of BCN are very much influenced and motivated by the traditional approach to planning both by the airport and the region. Airport management in Spain presents itself as a top-down structure without any institutionalized bottom-up influence. Besides, AENA, traditionally, has not shown any sort of market oriented, flexible airport planning or anticipation to future developments. AENA's master plans mainly base their development choices on simple forecasting figures; furthermore, these master plans arrive too late. This is the case of the BCN master plan (AENA and Ministerio de Fomento 1999) of 1999: another expansion seems to be needed to meet demand. Forecasts show that the airport could reach its roof of 52 million passengers between 2013 and 2015 (Suau-Sanchez 2007). This means 6 to 8 years from now. Mega infrastructural developments need years for consensus among actors and realization, usually more than a decade, hence AENA and BCN are arriving late to meet the needs for airport infrastructure in the region. At the beginning of 2008 the planning of a new Satellite Terminal that will be connected with a people mover to the currently under construction South Terminal was confirmed. This development that should be more than welcome will not solve the capacity problem since it will add terminal capacity but no runway capacity. While the airport institutional framework presents itself as a monopolistic model in which only one actor takes all management decisions (AENA), the regional spatial framework appears to be a complicated and intricate web of relations. As said above, municipalities are free to develop their own land without important restrictions. Many times municipalities, pushed by the need of more funding, develop land to obtain short-term benefits without taking into account the regional needs or the long-term consequences. Besides this fragmented map in the decision-making process, municipalities open offices such as the OMSICA (Castelldefels Municipality Office for the Monitoring and Control of the Airport) and the OMSA (Gavà Municipality Office for the Monitoring of the Airport) for lobbying in those airport decisions that they consider to be against their municipalities and to canalize inhabitants complains. But local communities not only canalize their opinion through these offices, they also use their own neighborhood associations that make their own proposals. Currently, there is not a regular communication canal between AENA and the local communities, only the meetings in the Technical Working Group for Noise (GTTR) force a contact between local municipalities and the airport manager. Hence, we consider that the management framework does not correspond to the spatial needs.

### 3.3 Airport region of Munich

Munich Airport International (MUC from now on), inaugurated in 1992, is a young airport located 30 kilometres to the north of the city of Munich. Before 1992 there was a small city airport just south of the city of Munich. MUC covers 1,560 hectares in the administrative districts of Erding and Freising. It has two runways on which planes can take off and land independently, which allows 90 flights per hour. MUC is with a 10.4 percent passenger growth in 2007 one of the fastest growing airports in Europe. In the same year the airport handled 34 million passengers. 35 percent of them are transit passengers.

**Figure 7: Munich Airport bird-eye picture, 2006. Source: Flughafen München Gesellschaft.**

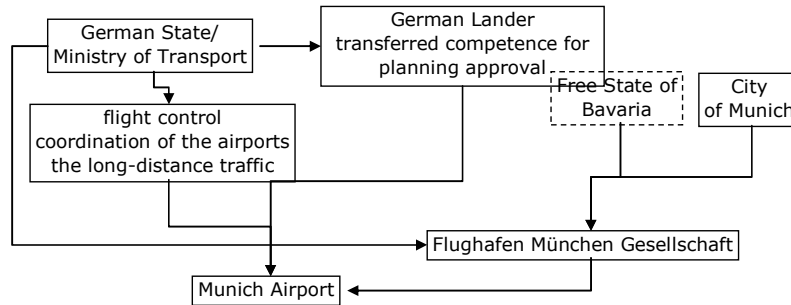


#### 3.3.1 Institutional framework

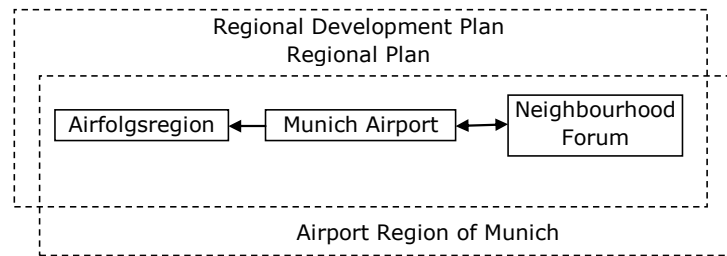
Munich airport is run by the Flughafen München Gesellschaft GmbH. Shareholders are the German State, the Free State of Bavaria and the City of Munich. The German state is responsible for flight control, coordination of the airports and long-distance traffic access to the airports. The Free State of Bavaria is responsible for the *Plangenehmigung* (planning approval), which originally had lain with the state, but in fact, it transferred the competence to the federal states. In Germany the municipalities have a powerful role within territorial development. In general the airport system of Germany is strongly decentralized. However the City of Munich has no responsibility concerning Munich airport.

In Munich Airport Region there are two institutions founded by the airport operator, the *Airfolgsregion* and the *Neighbourhood Forum*. The *Airfolgsregion* is a joint venture of the administrative districts of Erding and Freising, the cities Erding and Freising and the airport. Main task of the *Airfolgsregion* is regional marketing for the airport vicinity. The *Neighbourhood Forum* was founded to accompany the planning procedure for a third runway (see next chapter). The board consists of local communities, action groups, pressure groups, aviation businesses and the Munich regional planning association as well as the owners of the airport enterprise (Droß and de Jong 2007).

**Figure 8: Institutional framework of Munich Airport. Source: Authors' own elaboration.**



**Figure 9: Regional framework of Munich Airport. Source: Authors' own elaboration.**



### 3.3.2 Spatial economic framework

The double hub system, consisting of Frankfurt and Munich, copes with 48 percent of the 174 million passengers in Germany (Arbeitsgemeinschaft Deutscher Verkehrsflughäfen 2007, own calculations). At MUC the intercontinental flights grew fast and the number of transfer passengers increased in the last years. MUC developed its hub function and extended its position as second hub in Germany. But the capacity of the fast growing airport draws to an end. First bottlenecks have appeared in 2006. The estimated number of passengers in 2020 is 58 million, 24 more than 2007 (Flughafen München 2007). As a consequence the shareholders of the airport enterprise decided in 2005 to expand the capacity of the airport with a third runway. The formal planning procedure started in August 2006.

The MUC site belongs to the two administrative districts of Erding and Freising. The latter is one of the administrative districts with the lowest unemployment rates in Germany. With 27.400 employees in 2006, MUC is a very large employer. From 2003 to 2006 four new jobs per day were provided by the airport company (Flughafen München 2006). On the site of the airport an airport city is growing with shops, restaurants, medical specialists, a discotheque, a first class hotel and a conference centre. The non-aviation sector is highly important for the airport company because it produces about 50 percent of the turnover. Aviation firms and other companies settle in the airport vicinity. Approximately 50 percent of the airport employees live in the vicinity of the airport (Flughafen München 2006). This generates an enormous housing demand.

### 3.3.3 Airport region

The corridor between the airport and the city of Munich is very important for the economic development of the Mega-City Region of Munich (MCRM from now on). Many global players, like the German division of Microsoft and the European research centre of General Electric are located there. Most of the municipalities located in the corridor have an enormous job growth, relatively and absolutely above the regional average (Bayerisches Landesamt für Statistik und Datenverarbeitung 2007, own calculations).

Hence, the airport region arises as a distinguished location within the MCRM especially for knowledge firms. A recent survey of the integration of knowledge firms demonstrates that the functional urban area of Freising, in which the airport is located, has a very strong position as location area for knowledge firms in the MCRM (Thierstein, Goebel and Lüthi 2007). Together with the accessibility factor that the airport provides, companies find other crucial location factors in the airport region such as the presence of two of the three German excellence universities, which provide a high-qualified workforce. Consequently, we could say that the airport region of Munich is a highly attractive location. However it also causes hindrance. A striking result of a survey in the airport vicinity was that people find traffic noise just as annoying as aircraft noise. An even more striking result of the survey is that the population of the airport vicinity fears a declining quality of life because of rising air and road traffic (Flughafen München 2004). So, these are the first emerging signs of conflict because of growth and development.

The regional plans lay down the airport expansion and want to control the economic effects of the airport by directing these to certain districts of the airport region. The Munich regional plan contains one forthright objective for the airport region. It stipulates that especially the rural part of the surrounding area should profit from the economic effects of the airport. The plan suggests that future growth should mainly take place in the rural municipalities to the north and east of the airport (Regionaler Planungsverband 2002). The regional planning programme of the Free State of Bavaria states that improving the accessibility of the region is important for the development of the MCRM (Bayerisches Staatsministerium für Wirtschaft 2006). Furthermore, the capacity of the airport should be enhanced and the position as European hub airport should be assured (Bayerisches Staatsministerium für Wirtschaft 2006). Both plans focus on to economic objectives when it comes to the airport region.

The municipalities develop their areas individually and seem to dislike future growth (Droß and Thierstein 2007: 9). In the airport region there are two municipal collaborations. The “North Alliance” is a collaboration of eight municipalities within the corridor between the city of Munich and the airport. In the past the alliance tried to block further development of infrastructures. In the last years the alliance changed its character and got a marketing association (Droß and Thierstein 2007). The other municipal collaboration is the joint venture “Airfolgsregion” that links together the two administrative districts of Freising and Erding, in which the airport is situated, their capitals and the airport company. The association tries to integrate all relevant groups, strengthen the regional identity, to set up a network between the regional actors and existing projects and to start new projects. The projects of the joint venture mainly focus on marketing issues (Airfolgsregion 2007).

The only tangible indication that public planning authorities developed certain awareness about the unfolding development problems in the larger area around MUC is a report,

which was mandated by the Free State of Bavaria, the administrative districts Freising and Erding as well as the airport company. The objective of the report was to develop a concept for the spatial development of the airport region. According the further settlement developments, the report stipulates a higher growth of the larger municipalities because of their good equipment with public and private infrastructure. The smaller municipalities did not accept this objective and in the end they were allowed to grow with the average of the forecasted growth rate. Additionally, the municipalities are not obliged to obey the objectives in the report; the concept is based on voluntary contribution (Bayerisches Staatsministerium für Wirtschaft 2004).

However, there is not much emphasis on the airport region of Munich so far. The airport region concept hardly exists as description of a specific region. Currently, the concept only exists as reference area for analysing the effects of the airport (Flughafen München 2007) and as long term hypothesis at the Chair for Territorial and Spatial Development of Munich University of Technology ((Thierstein and Droß 2006). However, we think that the mentioned growth poles, the airport and city of Munich, form a new functional region that should be called Airport Region of Munich (ARM).

### **3.3.4 Gaps in traditional planning approaches**

The heavy population and job growth in the ARM are not sustainable. The small municipalities grow relatively more than the larger ones. Especially the growth of smaller municipalities is not sustainable as they develop low densities and have the largest growth of settlement area consumption per person which derives in higher infrastructure costs. Additionally, many of them do not have access to the main public transportation network (Droß and Thierstein, 2007). Hence much of the traffic is car based. Above we mentioned that people suffer under traffic noise as much as under aircraft noise. For us it seems obvious that low density developments, poor access to public transport, growing car traffic, growing traffic noise and high expenses of settlement development are all part of the same story. It is the story of urban sprawl with its low-density buildings and mono functional, car oriented land-use patterns.

Within the planning procedure for a third runway four main conflicts occur: a) the requirement of a new runway. b) the location of the planned runway, c) the road and railway traffic in the airport region, d) the expenses of the growing population (Droß and de Jong 2007). The first ones originally deal with the planned runway; the second ones (traffic and expenses) are partly effects of the strong airport growth. Traffic and expenses of the growing population are additional conflicts, which are connected with the development of urban sprawl. The conclusion is that conflicts within the planning procedure for a third runway of Munich airport stick together with development of sprawl in the airport region. These conflicts are mostly not on the agenda of the formal sectoral, municipal or regional planning authorities. Even regional planning works sector oriented, only focussing on economic objectives of the airport region. Regional planning lacks in focus on growth related conflicts, which emerge with the strong growing traffic and the expenses of the growing population and the chosen land-use model.

With the enormous airport growth and its strong regional effects a gap opens between traditional sectoral planning, municipal planning and regional planning. Currently, neither regional planning has discovered the emerging airport region as a challenge nor has sectoral planning, nor has municipal planning.

## 4 Conclusion

**Figure 11: Comparison between the three airport regions. Source: Authors' own elaboration**

	<b>Amsterdam Airport and Region</b>	<b>Barcelona Airport and Region</b>	<b>Munich Airport and Region</b>
Passengers 2007	47.8 Million	32.8 Million	34 Million
Cargo 2007	1.610.282 tonnes	96.700 Tonnes	251,100 Tonnes
Movements 2007	435,973	352,489	431,800
Dominant Airline 2007	KLM-Air France	Iberia and Spanair	Lufthansa
Dominant Alliance 2007	Sky Team	One World and Star Alliance	Star Alliance
Dominant Low-Cost Carrier	Easy Jet	Clickair and Vueling	Air Berlin
Airport Manager	Schiphol Group (Shareholder: Dutch State, city of Amsterdam, city of Rotterdam)	AENA (100 percent Estate Government)	Flughafen München Gesellschaft (Shareholder: Bavarian State, the Federal Republic of Germany, city of Munich)
Distance from the city	6 km	10 km	30 km
Area of the airport	2,878 ha	1,533 ha	1,560 ha
Airport status	Intercontinental hub	No hub-function, lack of intercontinental connections	Secondary hub airport
Institutional framework	Decentralized, but with strong enabling legislation	Top-down, no local or regional involvement	Strongly decentralized, sector orientated
Spatial economic framework	Airport city	Airport city under development	Airport corridor
Airport region	Airport region concept hardly exists. Regional enabling legislations concerning spatial planning and noise hindrance do exist	Delta Plan not really enhancing coordination among projects, important noise disruptions	Airport region concept hardly exists, so far a great challenge for the responsible actors
Main Gaps in traditional planning	Excessive governance, climate of distrust, no general development strategy	Excessive freedom of municipalities in land-use planning, rigid and outmoded airport master planning	Sector oriented, not dealing with the spatial conflicts, no growth management for airport region

Figure 11 summarizes and compares the three case studies presented above. We can identify some regularities in the three cases that confirm that traditional planning is not able to cope with the complexity described. The gaps we can identify after our analysis are: a) There is an excessive number of plans, sometimes they are superposed, but

however do not fit together. Plans of different hierarchy scale are not correctly interlaced and regional plans presented as comprehensive tools lack legislating power or comprehensiveness. b) Crucial spatial development conflicts are not linked together. The responsible institutions seem to deal with spatial conflicts in a really sectoral way. c) There are many actors who influence and are influenced by the airport region which are not involved in the planning and management process. d) Round tables where actors meet do not result in a common vision and strategy for the airport and the region; however, they become new conflict arenas. e) Airport operators see local actors as a thread and vice versa; however, both their success depends on collaboration and the search for synergies. As Pujinda (2006: 5) highlights “the potential for economic growth around an airport not only depends on the capacity of the airside facilities, but is also directly related to the quality of landside accessibility of the airport. And vice versa, the quality of access depends on the monitoring and control of the growth of the developments in airport regions”. f) There is a lack of long-term strategies and long-term agreements between actors. What these identified gaps cause is super-complex scenarios: a big puzzle of different issues that are interrelated in different time and space scales and involving different actors. These gaps make it very difficult to face the current and future challenges that may arise in airport regions.

We state that there is a need for new spatial development policies for airport regions, which should include strategies that incorporate all crucial spatial development conflicts and concerned actors. The core issues should be analysed and linked together. Often there are far more interrelations than could be seen at first glance. This development strategy should be the result of a consulting process of all responsible and affected actors. Deregulation, liberalization, the network society and knowledge economy, footloose activities and other effects of globalization foster complex dynamics and developments in the airport region, which are formed by a dense network of – sometimes paradoxical – relationships. Effective strategies to deal with this complex scenario are becoming necessary. We believe that the perception and recognition of the airport region as a functional region is a precondition for any effective strategy, since the airport becomes a regional engine that participates and influences a wide range of network relationships all along the region.

To come back to our research questions, we state that the case studies demonstrate wide gaps which traditional planning frameworks cannot bridge. We cannot declare and describe a new (relational) planning approach. However we have figured out that the relational approach is a useful tool to analyse the current global environment in which different times, places and actors appear interlaced. Besides the potential of the relational approach as an assessing tool, it does not provide enough guidelines to solve the actual complex scenario since a relational planning approach has not yet fully arisen. Nevertheless the relational approach gives impetus to identify the gaps. We believe that any planning approach and strategy for airport regions has to take into account an analysis comparable with the one we have worked out for this paper.

## References

- AENA (2007): *Aena Estadísticas*. URL: <http://estadisticas.aena.es>.
- AENA (2005): *Memorando de actuaciones del grupo de trabajo técnico de ruidos de la comisión de seguimiento de la ampliación del aeropuerto de Barcelona*. Barcelona: AENA-CSAAB.
- AENA and Ministerio de Fomento (1999): *Plan Director del Aeropuerto de Barcelona*. Madrid: Ministerio de Fomento, Centro de Publicaciones.
- ACI (2007): *Passenger Traffic 2006 preliminary*. URL: [http://www.airports.org/cda/aci/display/main/aci\\_content.jsp?zn=aci&cp=1-5\\_9\\_2\\_\\_](http://www.airports.org/cda/aci/display/main/aci_content.jsp?zn=aci&cp=1-5_9_2__)
- ACI-Europe & York Aviation (2004): *The social and economic impacts of airports in Europe*. URL: <http://www.aci-europe.org>.
- Airfolgsregion (2007): *AirfolgsRegion*. URL: <http://www.nachbarregion-erding-freising.de>.
- Aleman, J. (1995): *El Plan Delta III. Análisis económic de las grandes infraestructuras*. Barcelona: Gabinet Tècnic de Programació, Alcaldia, Ajuntament de Barcelona.
- Andere Overheid (2005): *Je gaat er over of niet: Rijksbrede takenanalyse Advies Gemengde Commissie Bestuurlijke Coördinatie*. Den Haag: Andere Overheid.
- Arbeitsgemeinschaft Deutscher Verkehrsflughäfen ADV (2006): *Statistiken IVF im Internet*. URL: <http://www.adv-net.org/de/gfx/stats2000.php>.
- ARDC (2008): *Air Route Development Committee*. URL: <http://www.bcnair-route.com>
- Baie (2008): *Barcelona Aeronautics and Space Association*. URL: <http://www.bcnaerospace.org>.
- Bayerisches Landesamt für Statistik und Datenverarbeitung, *GENESIS-Online - Statistisches Informationssystem Bayern* [Online]. <https://www.statistikdaten.bayern.de/genesis/online/logon>, 04.07.2007.
- Bayerisches Staatsministerium für Wirtschaft, Infrastruktur, Verkehr und Technologie (2004): *Der Flughafen München und sein Umland Ergebnisse des Dialogprozesses für ein Leitkonzept Flughafenumland*. München
- Bayerisches Staatsministerium für Wirtschaft, Infrastruktur, Verkehr und Technologie (2006): *Landesentwicklungsprogramm Bayern 2006*. München.
- Baró, E. (1995): *El Plan Delta II. Evaluación de las repercusiones de la construcción y del funcionamiento*. Barcelona: Gabinet Tècnic de Programació, Alcaldia, Ajuntament de Barcelona.
- Bel, G. and Fageda, X. (2006): *Aeroports i globalització. Opcions de gestió aeroportuària i implicacions sobre el territori*. Barcelona: IERMB.
- Boelens, L. (2005): *Up to fluviology*. Inaugural speech. Utrecht University.
- Boelens, L. and de Jong, B. (forthcoming): *Airport planning in actor-network-constellations: the case of Amsterdam Airport Schiphol*.
- Boelens, L. and de Jong, B. (2006): "Constellatie Schiphol. De nationale luchthaven op de overgang van (semi)overheid naar doorslaggevende actor in een complexe netwerkwereld" IN Boelens, L.; Wissink, B.; Spit, T (Eds.): *Planning zonder overheid*, pp: 85-115. Rotterdam: 010 publishers.
- Bouwens, A. and Dierikx, M. (1997): *Tachtig jaar Schiphol: op de drempel van de lucht*. 's-Gravenhage: SDU Uitgevers.
- Burghouwt, G. (2007): *Airline network development in Europe and its implications for airport planning*. Aldershot: Ashgate.
- Burghouwt, G. and Huys, M. (2003): *Deregulation and the consequences for airport planning in Europe*. *DISP 154*, pp.37-45.
- Castells, M. (1996): *Rise of the Network Society – the Information Age: Economy, Society and Culture, Volume I*. Oxford: Blackwell.
- Cerfontaine, G. (2006): *Governance in Randstad Holland*. Inaugural speech. Utrecht University.
- De Neuville, R. and Odoni, A. (2003): *Airport Systems. Planning, Design and Management*. New York: Mc. Graw Hill.
- Dicken, P. (2004): *Global Shift: Reshaping the global economic map in the 21st century*. London: Sage Publications.

- Doganis, R. (2002): *Flying off course. The economics of international airlines*. London: Routledge. Third Edition.
- Droß, M. and de Jong, B. (2007): *Planning airports in an era of glocalisation: A spatial economic and institutional comparison between Amsterdam Airport Schiphol (AMS) and Munich Airport International (MUC)*. 47th Congress of the European Regional Science Association, Paris, August 29th to September 2nd 2007.
- Droß, M., and Thierstein, A. (2007): *Airport Region of Munich – Show-Case for a Lack of Territorial Governance*. AESOP, Napoli 14th November 2007.
- Droß M., Förster A., Thierstein A. (2006): *Mega-City Regions: On awareness and value chain approach*. 46th Congress of the European Regional Science Association, Volos, 30th August to 3rd September 2006.
- Flughafen München (2004): *Der Flughafen München aus Sicht der Nachbarn. Ergebnisse einer bevölkerungsrepräsentativen Befragung 2003*. Munich: Flughafen München.
- Flughafen München (2006): *Arbeitsstättenenerhebung 2006*.
- Flughafen München (2007): *Auswirkungen des Vorhabens 3. Start- und Landebahn auf Wirtschaft und Siedlung im Flughafenumland*. URL: [https://www.muc-ausbau.de/downloads/gutachten\\_PFV/06\\_WSP\\_01\\_Kompendium.pdf](https://www.muc-ausbau.de/downloads/gutachten_PFV/06_WSP_01_Kompendium.pdf).
- Flughafen München (2008): *Facts and Figures*. URL: <http://www.munich-airport.de/de/company/facts/index.jsp>.
- Graham, S. and Healey, P. (1999): *Relational concepts of space and place: issues for planning theory and practice*. European Planning Studies 7, vol. 5, pp. 623-646.
- Güller, M. and Güller, M. (2003): *From Airport to Airport City*. Barcelona: Gustavo Gili.
- Güller, M. and Güller, M. (2001): *From airport to airport city*. Barcelona: Airport Regions Conference and Barcelona Regional.
- Hakfoort, J. and Schaafsma, M. (2000): “*Planning AirportCity Schiphol: een heroriëntatie op de toekomst van de luchthaven*” IN Boelens, L. (Ed.), *Nederland Netwerkenland*. Rotterdam: NAI Uitgevers Rotterdam, pp. 77-97.
- Hall, P. and Pain, K. (2006): *The Polycentric Metropolis, Learning from Mega-City Regions in Europe*. London: Earthscan.
- Hartwig, N. (2000): *Neue urbane Knoten am Stadtrand? Die Einbindung von Flughäfen in die Zwischenstadt: Frankfurt/Main - Hannover - Leipzig/Halle - München*. Akademische Abhandlung zur Raum- und Umweltforschung. Hannover: VWF.
- Initiative Luftverkehr für Deutschland (2006): *Master Plan. Zur Entwicklung der Flughafeninfrastruktur*.
- Jong, B. de (2008) *Glocal Complexity and airport planning: towards a more relational planning approach*. In: Blue Skies or Storm Clouds? Essays on Public Policy & Air Transport. Amsterdam: ScienceGuide
- Leinbach, T.R. and Bowen, J.T. (2004): *Air cargo services and the electronics industry in Southeast Asia*. Journal of Economic Geography 4, pp. 299-321.
- Ministry of Housing, Spatial Planning and the Environment (2006): *Nota ruimte: ruimte voor ontwikkeling, deel vier*. Den Haag: Ministry of Housing, Spatial Planning and the Environment
- Ministry of Transport, Public Works and Water Management (2004): *Luchthavenverkeerbesluit Schiphol en Luchthavenindelingbesluit Schiphol*. 's-Gravenhage: Ministerie van Verkeer en Waterstaat
- Ministry of Transport, Public Works and Water Management (2006): *Evaluatie Schipholbeleid, eindrapport*. Den Haag: Ministry of Transport, Public Works and Water Management
- Nel-lo, O. (2003): *Aquí, no! Els conflictes territorials a Catalunya*. Barcelona: Empúries.
- OAG (2006): *Official Airline Guide*. URL: <http://www.oag.com>.
- Provincie Noord-Holland (2007): *Vestigingslocaties Schiphol: een globale verkenning voor de lange termijn*. Haarlem: Provincie Noord-Holland.
- Pujinda, P. (2006): *Planning of land-use developments and transport systems in airport regions*. Bauingenieurwesen und Geodäsie. Darmstadt: Technische Universität Darmstadt.
- Regionaler Planungsverband München: *Regionalplan München*. München 2002

- Robertson, R. (1995): "Glocalization: time-space and homogeneity-heterogeneity" In Featherstone, M.; Lash, S.; Robertson, R. (Eds.): *Global Modernities*. London: Sage Publishers, pp: 25-68.
- SACN (2007): *About SACN – Organization*. URL: [http://www.slotcoordination.nl/about\\_organization.asp](http://www.slotcoordination.nl/about_organization.asp)
- Schaafsma, M. (2008): "Accessing Global City Regions. The Airport as a City" In Thierstein, A. and Förster, A. (Eds.): *The Image and the Region - Making Mega-City Regions Visible!* Baden: Lars Müller Publishers.
- Schiphol Group (2008): *Jaarverslag 2007*. Amsterdam: Schiphol Group.
- Schiphol Group (2007): *Annual report 2006*. Amsterdam: Schiphol Group. Oxford: Oxford University Press
- Scott, A. (Ed.) (2001) *Global City Regions*.
- Staatsblad van het Koninkrijk der Nederlanden (2002): *Wet van 27 juni 2002 tot wijziging van de Wet luchtvaart inzake de inrichting en het gebruik van de luchthaven Schiphol*. 's-Gravenhage: SDU Uitgevers.
- Suañer-Sánchez, P. (2007): *Strategic Environmental Assessment towards sustainable airport development in Catalonia*. Master Thesis. Bellaterra: Universitat Autònoma de Barcelona.
- Suañer-Sánchez, P. (2008): *El repte socioambiental dels aeroports*. *OmnisCellula*, 16. pp. 7.
- Subirats, J. (2007): "Els miratges de la certesa?" IN Tarroja, A.; Castañer, M.; Mercadé, M. (Eds): *Anuari Territorial de Catalunya 2006*. Barcelona: Societat Catalana d'Ordenació del Territori.
- Thierstein, A.; Goebel, V.; Lüthi, S. (2007): *Standortverflechtungen der Metropolregion München. Über Konnektivität in der Wissensökonomie*. Lehrstuhl für Raumentwicklung, TU München, München. URL: <http://www.raumentwicklung-tum.de/publikationen.php>.
- Thierstein, A. and Droß, M. (Eds.) (2006) *Airport Region Munich. Von der Genese eines Handlungsraumes. Ergebnisse. Seminars Airport Region Munich im Wintersemester 2005/2006 am Lehrstuhl für Raumentwicklung München*: Lehrstuhl für Raumentwicklung, TU München.
- Thierstein, A.; Kruse, Ch.; Glanzmann, L.; Gabi, S.; Grillon, N. (2006): *Raumentwicklung im Verborgenen. Untersuchungen und Handlungsfelder für die Entwicklung der Metropolregion Nordschweiz*. Zürich: NZZ Buchverlag.
- Trullén, J. (1995): *El Plan Delta I. El modelo económico y territorial de Barcelona*. Barcelona: Gabinet Tècnic de Programació, Alcaldia, Ajuntament de Barcelona.
- Van den Berg, L. et al. (2004): *European Cities in the Knowledge Economy*. Rotterdam: EURICUR.
- Van den Berg, L. and Braun, E. (1999): *Urban Competitiveness, Marketing and Need for Organizing Capacity*, *Urban Studies* 36, num. 5-6, pp. 987-999.
- Van den Berg, L. (1999): "The Urban Life Cycle and the Role of a Market Oriented Revitalisation Policy in Western Europe" In van den Berg (Ed.): *Urban Change in the United States and Western Europe*. Washington: The Urban Institute Press.
- Wijk, M. van (2007): *Airports as cityports in the City-region: spatial-economic and institutional positions and institutional learning in Randstad-Schiphol (AMS), Frankfurt Rhein-Main (FRA), Tokyo Haneda (HND): and Narita (NRT)*. Utrecht: NGS
- Wissink, B.; Buunk, W.; Kreukels, T. (2003): *Naar een gedragswetenschappelijke planologie*. *Stedebouw & Ruimtelijke Ordening* 5, pp. 42-47.