CRITICAL FACTORS FOR THE DEVELOPMENT OF AIRPORT CITIES

Mauro Peneda, Prof. Rosário Macário
AIRDEV Seminar
IST, 20 October 2011
Airports are becoming new dynamic centres of economic activity. They have incorporated several commercial services and businesses, both inside passenger terminals and on their landside areas.

In this process, they have taken on many features of metropolitan central business districts and established themselves as new regional development poles.

Different concepts to address this type of developments can be found in the literature; this dissertation will address the concepts of "airport city", "airport corridor", and "aerotropolis". The airport city will be the key object of study.
Motivation

• The airport city and airport metropolis (aerotropolis) models are claimed by some authors to have become the norm for strategic development of major hub airports in the 21st century;

• These new airport development models imply major territorial, social, and economic impacts, as airports’ reach extends well beyond their boundaries;

• However, bibliography on this matter is scarce and presents the concepts of Airport City and Airport Metropolis in a semi-scientific perspective, and sometimes even for publicity purposes;

• Hypothetical drivers and dynamics of airport-centered urban development are enumerated in some literature, but the perspectives of different authors are sometimes contradicting.
Objectives

• Establish the connections between major trends in the aviation and airport sector, and the advent of airport-centered urban development;

• Define the concept of “airport city”, based on information from the literature and from a ‘key informant survey’;

• Assess the airport city’s components and the main pillars of its activity;

• Understand the relationship networks between the agents involved;

• Assess the critical factors for airport city development.
Airport-centered urban development

LIBERALIZATION  GLOBALIZATION

Low-Cost Carriers
Low-Cost Airports
Hub and Spoke
Airline Alliances
Capacity, safety and security needs
Economic impact and value added
Increased market volatility

Pressure on airport charges

COMMERCIALIZATION  PRIVATIZATION

INCREASED RELIANCE ON NON-AERONAUTICAL REVENUES

REAL ESTATE DEVELOPMENT

CRITICAL FACTORS

AIRPORT CITY
AIRPORT CORRIDOR
AEROTROPOLIS

Revenue diversification
• Concept first appeared in the 1970s (USA), referring to the development of industrial and business parks in the vicinity of airfields;
• Nowadays, it has been used to describe the growth of aeronautical and non-aeronautical land developments occurring at modern airports worldwide.
• Acknowledged by some agents (mainly related to urban planning and architecture), as a new urban form;
• However, other agents do not accept the airport city as having any urbanity;
• Economic perspective: airport city as simply the clustering of economic functions at and around the airport (Burghouwt, 2010; van Tol, 2010);
• Airport operators’ perspective: airport city as a business model, a strategy, and a marketing tool to promote the airport and its surroundings as attractive locations for businesses (Kreutel, 2010; van Wijk, 2010).
Planned and integrated real estate development between the city and the airport, arising as a result of the interactions between global flows and players, and local conditions. In practical terms, it consists of linear urban development occurring alongside major surface infrastructure, in the (previously) underdeveloped areas between airports and the major cities they serve.

Source: Schaafsma et al. (2008, p101)
The aerotropolis (also known as the Airport Economic Region) describes the sum of all airport-related developments that appear around airports (Schaafsma et al., 2008). It is an area that centers its economy on the airport, which in turn serves as the community’s economic engine.

- It is analogous in shape to the traditional metropolis, made up of a central city and outlying corridors, clusters of aviation-oriented businesses, and their associated mixed-use residential developments.
Airport-centered urban development considerations

Adapted from Yigitcanlar et al. (2008)

- **Infrastructure, terminals, retail space. Development with focus on terminals.**
- **Some additional facilities in the immediate surroundings of the terminals (airport-related business facilities).**
- **Development with focus on the aviation business. Additional non-aviation services and facilities, third-party market.**
- **Offer everything, like a real city; create living spaces.**

- **In-terminal commercial development**
- **Off-terminal commercial development**
- **Airport City**
- **Airport Corridor**
- **Airport region / Aerotropolis**
### Agent framework (I)

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Airport Operator</th>
<th>Users</th>
<th>Non-Users</th>
<th>Politicians</th>
<th>Developers and Investors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agents</td>
<td>• Real Estate division</td>
<td>• Passengers</td>
<td>• Neighbour organizations</td>
<td>• Central administration</td>
<td>• Long-term investors (internal and external)</td>
</tr>
<tr>
<td></td>
<td>• Strategic Management (Master Planning)</td>
<td>• Transport and infrastructure providers</td>
<td>• Local community groups</td>
<td>• Territorial authorities (national, regional, local)</td>
<td>• Short-term investors (internal and external)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Passenger-oriented business organizations</td>
<td>• Anti-noise groups</td>
<td>• Sectorial regulators</td>
<td>• Real estate developers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• (retail, hotel, conference...)</td>
<td>• Environmental activists</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Cargo-oriented organizations (logistics, warehousing, distribution...)</td>
<td>• Neighbourhood residents</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Workforce (inside and outside the fence)</td>
<td>• Surrounding landowners</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Business visitors/clients</td>
<td>• Commuters using the airport intermodal station</td>
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</table>

**AirDev**

Airport Development
Agent framework (II)
### Airport city component

<table>
<thead>
<tr>
<th>Logistics, cargo, distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics and industrial parks</td>
</tr>
<tr>
<td>Direct road connections to the city center</td>
</tr>
<tr>
<td>Direct rail connections to the city center</td>
</tr>
<tr>
<td>Convention and exhibition centers</td>
</tr>
<tr>
<td>Office complexes</td>
</tr>
<tr>
<td>Hotels and other accommodation</td>
</tr>
<tr>
<td>Intermodal platform for passengers</td>
</tr>
<tr>
<td>Provision of public transport between the different poles</td>
</tr>
<tr>
<td>Direct rail connections to the hinterland</td>
</tr>
<tr>
<td>Direct road connections to the hinterland</td>
</tr>
<tr>
<td>Airport station as a local integrating node of public transport</td>
</tr>
<tr>
<td>Airport station as a regional integrating node of public transport</td>
</tr>
<tr>
<td>Intermodal platform for cargo</td>
</tr>
<tr>
<td>Shopping mall merged with passenger terminals</td>
</tr>
</tbody>
</table>
### Survey findings: critical factors for the development of airport cities

#### Connectivity
- Surface connectivity to the CBD and between the different clusters
- Air connectivity
- Central location (geographic and aviation network-wise)
- Significant air cargo traffic
- Intermodal freight connectivity
- Frequent flights to the world’s main capital cities.

#### Economic potential of the hinterland
- Strong local and regional economies to provide a solid base for traffic
- Specialized suppliers and large local markets
- Adequate economic profile of the region to potentiate aeronautical activities
- Available supply of highly skilled labour.

#### Sustainable development context
- Inclusion in national and regional strategic planning
- Policies to support the location of airport-oriented companies
- Comprehensive planning
- Consensus among the different tiers of territorial authorities
- Capability for expansion (airside and real estate)
- Coordinated development of airside and real estate
- Community engagement.

#### Commercial attitude of the airport operator
- Active management by the airport operator (corporate organization, aggressive marketing and pro-active land acquisition)
- Creation of a development company (real estate division of the airport operator) where both the airport authority and public bodies are represented.
Conclusions (I)

- Liberalization, along with globalization, triggered new developments that caused profound impacts in aviation markets.

- The need to access income flows that are stable, reliable, and not entirely influenced by aviation cycles, and the significant maturity of commercial activities at some airports, led to the extension of airport offerings to additional target groups (such as visitors, airport employees, and companies from the region).

- Airport operators are now increasingly reliant on non-aeronautical revenues, in a trend that has already manifested worldwide.

- Airport companies brought airport commercial development one stage ahead, by moving into real estate businesses, in cases where this type of development fit their value proposition. Examples are now emerging of smaller airports planning for real estate development.
• Strategies of commercial revenue diversification through real estate, constituted the main motivation for airport operators to engage in airport-centered urban development;

• Depending on factors such as the degree of territorial authorities’ involvement, and the operators’ freedom to purchase and develop land outside the airports’ boundaries, airport-centered development may occur at different spatial scales (from the micro scale of the passenger terminal, to the regional or metropolitan scale), thus assuming different shapes and manifestations.

• The “airport city”, “airport corridor”, and the “aerotropolis” concepts arose as descriptive models for this type of development.
The airport city concept is perceived by the agents involved as the clustering of multifunctional business property projects at airports and in their immediate surroundings.

Airport city developments are primarily oriented towards one or more of four markets: real estate, air cargo and logistics, retail, and services to business travellers.

Their added value relies mostly on four pillars of their infrastructure: the aviation node, the surrounding surface networks, intermodality, and public transport provision.
• Sustainable development of the aviation node in the airport city core is fundamental to fuel its activities, and allow its expansion outwards, into an airport corridor or aerotropolis model.

• This expansion occurs when it is accompanied by a corresponding evolution in the value proposition of the Airport stakeholder;

• Development is greatly shaped by the mutual interactions between Airport, Users, and Politicians.

• The airport city concept as a whole, encompasses multiple dimensions:
  • it is a business model of the airport operator;
  • it is a marketing and a branding tool;
  • it is the spatial form composed of economic activity clusters, located in and around the airport.
The potential of an aviation node for airport city development relies on four main areas:

- Connectivity;
- Economic potential of the hinterland;
- Sustainable development context;
- Commercial attitude of the airport operator.
Future recommendations

- The implementation of large-scale airport-centered urban development models should be preceded by mature airport city development.
- The adequacy of an aviation node for airport city development should be assessed in light of the four critical factors identified.
- Airport commercial development must be developed sinergetically with the aeronautical activities at its core.
- Existence of a critical mass of air traffic is key for sustainable commercial development.
- Successful airport-centered urban development is a joint and coordinated effort from the airport operator and the surrounding territorial authorities.