



# AIRPORT CITIES & THE AEROTROPOLIS: NEW PLANNING MODELS

AN INTERVIEW WITH DR. JOHN D. KASARDA

## What is the airport city model?

Airports have traditionally been viewed as places where aircraft operate and passengers and cargo transit. This traditional understanding is giving way to a broader, more encompassing model which recognizes the fact that along with their core aeronautical infrastructure and services, virtually all major airports have incorporated a wide variety of non-aeronautical facilities and services. Retail mall concepts have been merged into passenger terminals. Airport property beyond the terminal is being developed with hotel and entertainment facilities, conference and exhibition complexes, shopping centers, office buildings, and logistics and free trade zones. Airports also frequently offer complementary sets of facilities for airport and airline employees (such as day care centers and health clinics), as well as commercially serve residents in the local market area.

Larger airports are thus taking on features of metropolitan central business districts, increasingly operating as points of multimodal surface transportation convergence with surrounding office, hotel and commercial facilities. Indeed, under the new airport city model, many airports are becoming significant employment, shopping, business meeting and entertainment destinations in their own right.

## Can you give specific examples of airports applying this new model?

Beginning within the terminal, Hong Kong International houses more than 30 high-end designer clothing shops; Singapore Changi has cinemas, saunas and a swimming pool; Las Vegas McCarran has a museum along with gaming; Amsterdam Schiphol hosts a Dutch Masters Gallery; Frankfurt offers the world's largest terminal clinic treating over 30,000 patients yearly; and the intensely utilized chapel at Stockholm Arlanda conducted over 450 weddings last year.

Because of the critical importance of landside commercial development to revenue streams, numerous airports are turning to the airport city model as a key component of their master plan and development strategies. For example:

- Beijing Capital Airports Holding is rapidly proceeding with its highly ambitious Capital Airport City, whose master plan takes an expansive definition of airport functions including, among others, shopping, entertainment, education, sports and leisure, logistics, light manufacturing, finance, trade and housing.

- Aeroports de Paris established a real estate division in 2003 to act as the developer, general contractor and construction project owner and manager of landside commercial properties at Paris Charles de Gaulle and Orly international airports.
- Dallas-Forth Worth's management is aggressively expanding its real estate development business, leasing its vast airport land to a wide variety of commercial tenants, including oil and natural gas exploration.
- Hong Kong International Airport's SkyCity is a one million square meter retail, exhibition, business office, and hotel and entertainment complex near its passenger terminal. The first major phase opened in late 2006. (See Figure 1)
- Kuala Lumpur International Airport's new airport city is commercially anchored by its large Gateway Park that, in addition to retail and office development, includes motor sports, an automotive hypermarket and leisure venues drawing on the local as well as aviation-induced market.
- Incheon's "AirCity" encompasses international business areas, logistics zones, shopping and tourism districts, as well as housing and services for airport city workers and residents.
- Dubai World Central is a \$32 billion airport city under development 25 miles south of downtown Dubai. Cornerstoned by a massive multimodal air logistics hub, the airport city will include office towers, hotels, a mega mall, golf course and housing for 40,000 on-site workers. Its airport, commercial and residential zones will be connected by an internal light rail system.
- Amsterdam Schiphol, through its Schiphol Real Estate Group, has been involved for two decades in landside commercial development. These developments include office complexes, hotels, meeting and entertainment facilities, logistics parks, shopping and other commercial activities branded under the AirportCity name. (See Figure 2) Nearly 58,000 people are employed at Schiphol, which integrates multimodal transportation, regional corporate headquarters, shopping, logistics and exhibition space to form a major economic growth pole for the Dutch economy.

Numerous other international airports, not quite the scale of Amsterdam Schiphol or Seoul's Incheon, have given the airport city model high priority in their master planning and strategic development (e.g., Brisbane, Calgary, Vienna, Zurich), positively affecting their financial bottom line.

In fact, many airports today receive greater percentages of their revenues from non-aeronautical sources than from aeronautical sources (e.g., landing fees, gate leases, passenger service charges). These non-aeronautical revenues have become pivotal to airports meeting their facility modernization and infrastructure expansion needs, along with their being cost-competitive in attracting and retaining airlines.

#### **How have airport non-aeronautical revenues grown over the years?**

ACI has estimated, based on historic benchmarks from International Civil Aviation Organization (ICAO) airport financial data, that non-aeronautical revenues constituted approximately 30 percent of total airport revenues in 1990. ACI's economic surveys have shown that non-aeronautical revenues rose to 46 percent in 1995, to 51 percent in 2000, and to a record 54 percent last year. For some large airports, such as Atlanta's Hartsfield-Jackson International Airport, non-aeronautical revenues now exceed 60 percent of their total revenues. Airport retail and, in particular, parking have become huge cash cows.

#### **What about revenue sources in the years ahead?**

Numerous airport managers with whom I have interacted have stressed that they will be increasingly dependent on revenue derived from non-aeronautical sources in the future. With airports under pressure by airlines and passengers to keep aeronautical costs under control, increasing non-aeronautical revenues pose the primary means by which airports will be able to meet their financial and growth needs. In fact, most do not see expanding non-aeronautical revenues as an option, but as a necessity.

It is my further view that these non-aeronautical revenue-generating activities – especially retail – will increasingly take place on airport land beyond the terminal. This is because: 1) terminals are basically planned and built according to aeronautical needs; 2) most terminals have restricted operations hours due to aircraft noise constraints; and 3) security issues tend to pose limits (e.g., limiting shopping locations of meeters and greeters). Other space constraints of terminals will limit the amount of retail and other non-aeronautical economic activities there, pushing these activities further out landside as the airport develops.



Figure 1: Hong Kong Sky City Phase 1

### Are these trends affecting airport management structure?

Yes, they are. Consistent with their expanding non-aeronautical roles and functions, airports are altering their operational management. Many airports – both public and private-sector operated – have established commercial and/or real estate divisions to develop their landside areas as well as foster development beyond airport boundaries to generate revenues. They include, among others, UK-based airport operator BAA, Aéroports de Paris (ADP), Dallas-Fort Worth International Airport (DFW), the Metropolitan Washington Airports Authority (MWAA), Frankfurt Airport [Fraport], Amsterdam Schiphol, and Singapore Changi.

For instance, MWAA has acquired 400 acres just beyond its property to joint venture with a master commercial developer. Schiphol has formed a public-private partnership, the Schiphol Area Development Company, with the Province of Noord-Holland, the City of Amsterdam and the Municipality Haarlemmermeer to develop property in the broader Amsterdam Airport Area. And Stockholm's Arlanda International Airport is cooperating with the airport municipality of Sigtuna to develop Arlandastad (Arlanda-City) on a 1300-acre tract near the airport.

Further extending their reach, some airports are buying and/or operating other airports through special investment management divisions. Leaders here are ADP, BAA, Fraport, Malaysia Airports Holding Berhad, Singapore Changi and the Schiphol Group.

These new operational structures offer testimony that airports are evolving from basic aeronautical infrastructures into complex multi-functional enterprises, serving both aeronautical needs and profitable business development. The current trend in airport operation and planning is therefore to complement traditional technical airport functions with revenue-generating terminal and landside commercial management.

### You are known as the leading developer of the aerotropolis model. How does an aerotropolis differ from an airport city?

The airport city is really the urban core of the more geographically expansive aerotropolis. With the airport itself serving as a region-wide multimodal transportation and commercial nexus, strings and clusters of airport-linked business parks, information and communications technology complexes, retail, hotel and entertainment centers, industrial estates, logistics parks, wholesale



Figure 2: Amsterdam Schiphol Office Complex

merchandise marts and mixed-use residential developments are forming along airport transportation corridors up to 20 miles or more outward.

This dispersed airport-linked development is giving rise to a new urban-form – the “Aerotropolis.” Similar in shape to the traditional metropolis, made up of a central city and its commuter-linked suburbs, the aerotropolis consists of an airport city core and extensive outlying corridors and clusters of aviation-oriented businesses and their associated residential developments.

Perhaps the most striking illustration of the airport city – aerotropolis relationship is that which is taking place at and outward from Hong Kong International Airport. With its air, highway and express train connectivity complemented by fast-ferry service and a new bridge to southern coastal China, Hong Kong's Sky City is positioning itself as the quadramodal commercial core of an expansive aerotropolis encompassing 26 million people.

### Why has the aerotropolis emerged?

The aerotropolis has emerged because of the advantages airports and their environs provide to business in the new speed-driven, globally networked economy. Today's most competitive manufacturers, for example, use advanced information technology and high-speed transportation to source parts globally, minimize their inventories, and provide fast and flexible responses to unique customers' needs, nationally and worldwide.

To meet the imperatives of speed and agility in order fulfillment, time-critical manufacturing, repair and distribution, facilities are being built near airports that have extensive flight networks. The clustering of such facilities around airports is stimulating further expansion of air cargo, air express, trucking, freight forwarders and logistics providers along airport transportation corridors.

It is not only time-sensitive goods-processing and distribution facilities that are being drawn to airport areas. As the world's service economy likewise shifts into fast-forward, airports have become magnets for regional corporate headquarters, trade representative offices, professional associations and information-intensive firms such as consulting and auditing that require executives and staff to undertake frequent long-distance travel.

Because major airports typically have excellent expressway links, the airport area provides local metropolitan market accessibility



advantages as well. This accessibility serves to attract commercial facilities of all types to airport areas which are developing their own “brand” image such as “the Amsterdam Airport Area,” “the DFW Area” or “the O’Hare Area.”

#### What are the key challenges to future aerotropolis success?

Although most aerotropolis development to date has been spontaneous and haphazard – often spawning airport area congestion and environmental problems – in the future, it can markedly improved through strategic infrastructure and urban planning. Dedicated airport expressway links (aerolanes) and high-speed airport express trains (aerotrails) should efficiently connect airports to business and residential clusters, near and far. Special truck-only lanes should be added to airport expressways, as should improved interchanges to reduce congestion. Cluster, rather than strip development, should be encouraged along airport transportation corridors with sufficient green space between

clusters. Residential mixed-use developments for airport area workers and frequent air travelers should be designed to human scale, encouraging social interaction and sense of neighborhood. In short, aerotropolis development and “smart growth” should go hand-in-hand.

The above outcomes will not occur under current airport area planning frameworks which are politically localized and functionally fragmented. A new approach is required, bringing together airport planning, urban and regional planning, and business site planning in a synergistic manner so that future aerotropolis development will be economically efficient, aesthetically pleasing, and socially and environmentally sustainable. The real question is not whether aerotropolises will evolve around major airports – they surely will. It’s whether they will form and grow in an intelligent manner, minimizing problems and maximizing returns to aerotropolis businesses and residents, and to the airport itself.



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