Airport cities:
The evolution

The impressive 160-acre Rossypole development at Paris CDG.

Airport cities guru, Dr John Kasarda, reports on the growing worldwide phenomenon, the rise of the aerotropolis and their increasing economic importance.

Airport city and aerotropolis development is gaining substantial traction, multiplying rapidly on a global scale.

Using qualitative and quantitative techniques, I've identified over 80 airport cities and broader aerotropolises (airport-centred urban economic regions) around the world that are either already operational or in early stages of development.

Their distribution is widespread with 38 identified in North America, 20 in Europe, 17 in Asia-Pacific, seven in Africa and the Middle East and one each in Central and South America. Various criteria were used to designate operational or developing airport cities and aerotropolises. Some of the criteria are clearly subjective, so this list is by no means definitive. Without doubt, new sites will be added while some shown here may fall by the wayside.

Airport City evolution

Airport cities have developed along different paths. A portion of them were planned from the start. Most, however, evolved in a largely organic manner responding to (1) airport land availability, (2) improved surface transportation access, (3) growing air traveller consumer demands, (4) airport revenue needs, (5) new business practices, and (6) site-specific commercial real estate opportunities.

Regardless of process, airports continue to transform from primarily air transport infrastructure to multimodal, multi-functional enterprises generating considerable commercial development within and well beyond their boundaries.

Today, virtually all of the commercial functions of a modern metropolitan centre are found on or near most major air gateways, fundamentally changing them from 'city airports' to 'airport cities'.

The passenger-terminal has led this transition. Airside (past security), gallerias and retail streetscapes have been incorporated into concourses, as have multiple leisure and consumer services.

Upscale boutiques offering high-end fashion clothing and accessories, along with gourmet and themed restaurants, have been complemented by health, fitness and entertainment facilities including spas, clinics, multiplex cinemas and, in some cases, museums, art galleries, concerts and gaming venues.

Depending on your tastes, you can play roulette at the Holland Casino at Amsterdam Schiphol or view famous Dutch master paintings at its branch of the Rijksmuseum. Again, depending on taste, you can visit Dr Müller's sex shop situated along Frankfurt Airport's concourse or listen to the London Philharmonic at Heathrow.

Should an overnight stay be desired for airport area get-togethers or to simply to shop and relax in the airport city, a growing number of gateways have Terminal-linked 4 and 5-star hotels offering fine dining, nightclubs, and comfort amenities.

Airports as corporate headquarters

Corporate headquarter functions were once the domain of downtown office buildings. No longer. Go to Terminal D at Dallas-Fort Worth International Airport or to the concourse of Detroit Metro's magnificent McNamara Terminal and you will see business people with bulging briefcases walking from their arrival gates into DFW's Grand Hyatt and Metro's swanky Weston Hotel.

They are pouring into these concourse-connected business class hotels not to sleep, but to meet.

DFW's Grand Hyatt and Detroit Metro's Weston increasingly serve as virtual headquarters for geographically dispersed corporate staff, executives, and board members who fly in for sales meetings, client contacts, and high-level decision-making.

The full-range of office services and business support staff of a traditional corporate complex are available, including meeting rooms, computers and advanced telecom, secretarial and tech assistance.

Some airport hotels, such as the Sheraton at Amsterdam Schiphol, Hilton at Frankfurt and Sofitel at Heathrow's Terminal 5 now even rank among the most popular places to hold business meetings in Holland, Germany and the UK respectively.

And airports in Asia are taking 'doing business' in them to a new level. For example, in 2010, Hong Kong International Airport opened the world's largest terminal commercial lounge. Its 15,000sqft facility is a full-service business centre that supports up to 300 users with wireless office workstations, projectors, meeting rooms, advanced videoconference stations, and tech assistance. Large-screen TVs and an all-day buffet provide the entertainment during any downtime.

In tune with today's corporate needs for quick access to their widely dispersed clients and enterprise partners, The Squaire (designated 'New Work City') opened at Frankfurt Airport in 2011. This two million square foot, mainly office and hotel complex, is over 2,000ft long (650 metres) and nine stories high.

Its primary value-proposition is speedy connectivity, not only local and national, but also global. The Squaire is just eight minutes via covered walkway to the airport's international check-in counters.

In addition to an adjacent high-speed motorway, rapid ground connectivity to much of the region and beyond is provided by the inter city rail station underneath the complex. Served by some 230 long-distance trains daily, The Squaire is without doubt the best-connected office building in Europe.

Excellent surface connectivity, together with Frankfurt Airport's extensive international flight network, has fashioned it into a magnet for offices of travel-intensive firms. One prominent multi-national accounting, auditing, and consulting firm, KPMG, has made The Squaire its European corporate headquarters, occupying 400,000sqft.

A number of major airports now actually exceed many downtown metropolitan central business districts in office space and employment. Rossypole, occupying 160 acres (65 hectares) in the middle of Paris CDG has over 2.5 million sqft (230,000sqm) of offices.

There are around 700 firms based on the 3,200-hectare (7,900 acre) airport property, employing a total of 87,000 people.

Proceeding outwards, there is an additional 770,000 sqm of offices in the immediate vicinity of the airport along with many hotels and logistics facilities. Approximately 250,000 jobs in the Paris region are directly or indirectly related to CDG.

The rise of the aerotropolis

Airports have become not just 21st century business magnets, but also regional economic accelerators, catalysing and driving business development outward for many miles.

As aviation-oriented businesses increasingly locate at major airports and along transportation corridors radiating from them, an aerotropolis emerges stretching up to 25km (nearly 20 miles) from some major airports.

Analogous in shape to the traditional metropolis made up of a central city core and its rings of commuter-heavy suburbs, the aerotropolis consists of an airport-centred commercial core (airport city) and outlying corridors and clusters of aviation-linked businesses and associated residential development.

Some of these largest aerotropolis clusters such as Amsterdam Zuidas, Las Colinas, Texas, and South Korea's Songdo International Business District – near Incheon International Airport – have become globally significant airport edge-cities whose business tentacles routinely touch all major continents.

The aerotropolis, in fact, is the concrete urban manifestation of the global meeting the local, with the airport serving as its physical interface. Among the most prominent are Amsterdam Schiphol, Chicago O'Hare, DFW, Dubai, Hong Kong, Incheon, Memphis, Paris CDG, Singapore and Washington Dulles international airports.

Each has attracted a remarkable number of businesses to their properties and broader airport areas, generating huge economic returns to their regions and nations.

For example, more than 1,000 firms have located in the Amsterdam Aerotropolis (including the world headquarters of ABN Amro and ING banks located just six minutes from Schiphol's terminal) in part because of the superb connectivity this airport provides their executives.

Likewise, four Fortune 500 world headquarters are located in Las Colinas Texas, only a 10-minute drive from DFW, while Chicago's O'Hare airport area has more office and convention space than most major cities.

The Washington Dulles airport region is the second largest retail market in the US (just behind New York City's Manhattan Island) and has become a high-tech business and consulting hub, as well.

Hong Kong, Incheon, Memphis, and Paris CDG boast leading cargo and logistics complexes, with the former two airports sustaining, respectively, Hong Kong Disneyland and New Songdo IDB, an airport edge city the size of downtown Boston.

Dubai and Singapore have emerged as a full-fledged aerotropolises with their large leisure, tourism, commercial and finance sectors dependent on aviation. Both may legitimately be described as global aviation hubs with city-states attached.

The employment scale and industry mix of the aerotropolis is much greater than many realise. Research by Dr Stephen Appold and myself on employment around the 25 busiest passenger airports in the US, found that 3.1 million jobs as of 2009 were located within a 2.5-mile radius of these airports (2.8% of total US employment); over 7.5 million jobs within a five mile distance (6.8% of all US employees) and 19 million jobs (17.2% of the US total) within 10 miles.

Assessment of wages and salaries in these airport radii showed that the respective percentages from payrolls were 3.4%, 8.2% and 21.9%.

Airport City & Aerotropolis Locations Worldwide

■ **Operational Aerotropolis**

■ **Developing Aerotropolis**

■ **Operational Airport City**

■ **Developing Airport City**

Europe

Amsterdam Schiphol
Athens International Airport
Eleftherios Venizelos
Barcelona El Prat Airport
Bremen Airport
Budapest Ferenc Liszt
International Airport
Dublin Airport
Frankfurt Airport
Frankfurt-Hahn Airport
Helsinki-Vantaa Airport
London Heathrow Airport
Manchester Airport
Moscow Domodedovo Airport
Munich Airport
Oslo Airport, Gardermoen
Paris Charles de Gaulle Airport
Paris Vatry Airport
Stockholm Arlanda Airport
Vienna International Airport
Warsaw Chopin Airport
Zurich Airport

Asia-Pacific

Bangkok Suvarnabhumi Airport
Beijing Capital International Airport
Bengaluru International Airport
Brisbane Airport
Clark International Airport
Cochin International Airport
Delhi Indira Gandhi International Airport Guangzhou
Baiyun International Airport
Hong Kong International Airport
Hyderabad Rajiv Gandhi International Airport
Incheon International Airport
Kuala Lumpur International Airport
Shanghai Pudong International Airport
Singapore Changi Airport
Subic Bay International Airport
Taiwan Taoyuan International Airport
Zhuhai Jinwan Airport

North America

Baltimore-Washington International Airport
Charlotte Douglas International Airport
Chicago O'Hare International Airport
Cleveland Hopkins International Airport
Dallas-Ft. Worth International Airport
Denver International Airport
Detroit Metropolitan Wayne County Airport
Edmonton International Airport
Fort Worth Alliance Airport
Hartsfield-Jackson Atlanta International Airport
Huntsville International Airport
Indianapolis International Airport
Jackson-Evers International Airport
John C. Munro Hamilton International Airport
John F. Kennedy International Airport
Kansas City International Airport
LA/Ontario International Airport
Lambert-St. Louis International Airport
Los Angeles International Airport
Louisville International Airport
McCarran International Airport
Memphis International Airport
Miami International Airport
Milwaukee General Mitchell
International Airport
Minneapolis-Saint Paul International Airport
Newark Liberty International Airport
Northwest Florida Beaches International Airport
Orlando International Airport
Philadelphia International Airport
Phoenix Sky Harbor International Airport
Phoenix-Mesa Gateway Airport
Piedmont Triad International Airport
Pittsburgh International Airport
Raleigh-Durham International Airport
Rickenbacker International Airport
Ted Stevens Anchorage International Airport
Vancouver International Airport
Washington Dulles International Airport

Central & South America

Belo Horizonte International
Airport, Brazil
Tocumen International
Airport/Panatropolis, Panama

Africa & Middle-East

Abu Dhabi International Airport
Cairo International Airport
Dubai Al Maktoum International Airport
Dubai International Airport
Durban King Shaka International Airport
Jeddah King Abdulaziz International Airport
Johannesburg-Ekurhuleni OR Tambo International Airport

Aerotropolis and airport city selection criteria for sites and assignment of status (operational or developing)

The subjectivity of these must be recognised, and actual development (or lack of progress) may alter these selections and statuses.

Criteria include:

- Dr John Kasarda's assessment based on his qualitative knowledge and quantitative research of the airport and surrounding aviation-linked business and industry clusters that correspond to the airport city and aerotropolis models.

- Demonstrated commitment to the aerotropolis or airport city model as seen in the establishment of aerotropolis steering committees, strategic planning, and development initiatives.

- Government/regulatory support of the aerotropolis or airport city through aerotropolis legislation, tax incentives or other mechanisms.

- Media announcements by proponents with substantiated evidence that an aerotropolis or airport city initiative is moving forward.
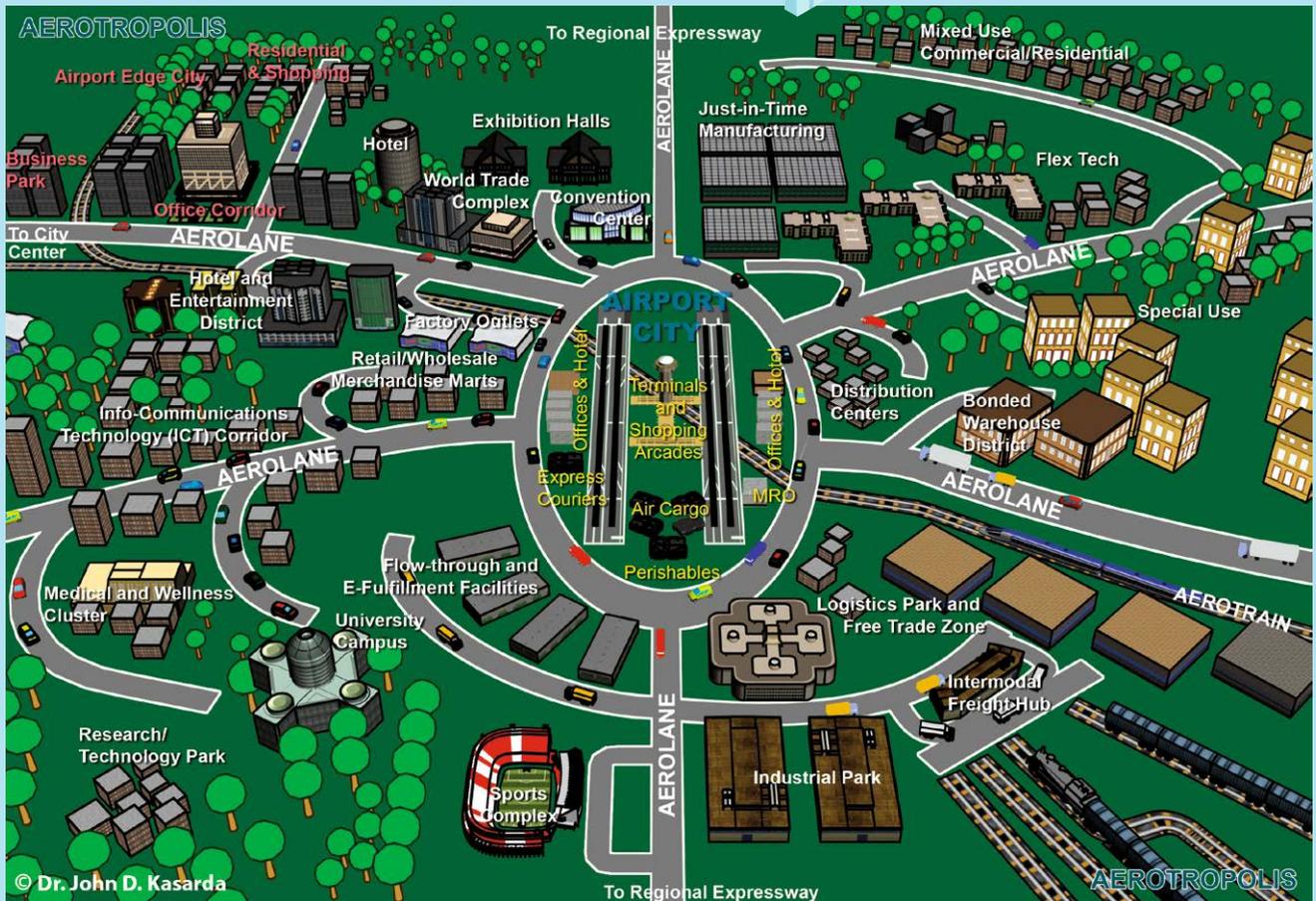
A spatially compressed model of the aerotropolis.

This indicates that many jobs near major airports are relatively well paid.

When we studied individual airports, we found that those located a greater distance from the metropolitan city centre generated significant employment clusters of their own.

Fostered by these clusters, Chicago O'Hare has 450,000 jobs within a radius of five miles; DFW 395,000 jobs, and Washington Dulles almost 240,000 jobs.

Fully 9.3% of all US employment in transport and warehousing is located within 2.5 miles of the 25 airports we analysed. The disproportionately high concentration of these jobs continued outward at least as far as a 10-mile radius of the airport fence.

Even traditional downtown employment sectors such as finance, insurance, and administration are moving to airport areas. Our research comparing airport area employment with metropolitan central business district area employment, showed that zones within five miles of the airport register 55% of the finance and insurance jobs that are located within five miles of the city centre and 78% of the administrative and support jobs.

Hotels, of course, are mushrooming around airports. There are 49 hotels within 2.5 miles of Hartsfield-Jackson Atlanta, with the heaviest concentration just one to 1.5 miles away. This compares to 51 hotels located within 2.5 miles of Atlanta's city centre.

And, the largest concentration of hotel rooms on the entire US west coast is adjacent to Los Angeles International Airport's fence.

Areas surrounding airports are also attracting businesses in a full range of professional, medical (life-sciences) and information and communication functions. Sports, recreation and entertainment complexes as well as showrooms, exhibition and convention centres are also gravitating towards them.

A spatially compressed model of the aerotropolis depicting its main components is presented above. No aerotropolis will look exactly like this illustration, but most will eventually take on similar features, led by newer 'greenfield' airports less constrained by many prior decades of non-aviation oriented surrounding development.

The aerotropolis is thus much more a dynamic, forward-looking concept than a static, cross-sectional model where much existing development reflects historic airport-area growth over many prior decades, some in the distant past.

Future development of the aerotropolis will be driven by further global integration and the need for speedy connectivity.

Both will be enabled and catalysed by the continuing expansion of aviation routes operating as a Physical Internet moving people and products quickly worldwide, analogous to the way the digital Internet moves data and information.

With airports serving as key nodes (or routers) of this Physical Internet, aviation, globalisation, and urban development converge, creating the 21st century aerotropolis.

Concluding comment

We have entered a new transit-oriented development era where cities are being built around airports instead of the reverse.

In the process, the urban centre is being relocated in the form of globally significant airport cities and aerotropolises.

Propitious opportunities await metropolitan regions (including their traditional central cities) that can marshal the vision, planning skills, and co-ordinated actions to capitalise on them.