



Aerotropolis engines beyond Asia

Aerotropolis concept leader, Dr John Kasarda, provides an update of airport city and aerotropolis developments in the Americas, Europe, Africa and the Middle East, and considers the implications of the coronavirus pandemic on aviation and future developments.

Last issue, I described how the Asia-Pacific region leads airport city and aerotropolis development. Other world regions are also moving forward. Western Europe has built on its early airport city successes, while the Americas awoke from aerotropolis slumber with major projects, as have Africa and the Middle East.

Let's look at these and what the unprecedented 2020 health, economic and aviation "triple whammy" portends for them.

Europe

The granddaddy of airport cities, Amsterdam Schiphol (AMS) was first to formally embrace the concept in the 1990s under the brand Schiphol AirportCity. Its core is Schiphol Central Business District (CBD) where the passenger terminal and forecourt area offer two million square metres of retail, office buildings (including the European headquarters of Microsoft), three 4-star hotels, conference facilities, art galleries, a casino, health clubs and restaurants.

The Base, a 47,000-square-metre office and commercial services complex a 10-minute walk from the terminal, was completed in late 2019. In total, 65,000 people work on AMS's 2,787 hectares encompassing five additional commercial/industrial zones supplementing Schiphol CBD.

The Schiphol Area Development Company (SADC), a public-private partnership (PPP), spearheads Schiphol's greater aerotropolis. The SADC markets several business and logistics parks, including Schiphol Trade Park, Business Park De President, Schiphol Logistics Park, Polaner Park, Green Park Aalsmeer, Business Park Amsterdam Osdorp, and Schiphol Rijk.

Zuidas, a large mixed-use business district seven minutes by transit to AMS, houses the corporate headquarters of numerous Dutch firms, while the famous Aalsmeer Flower Auction five minutes away sells 20 million flowers and decorative plants each weekday for global shipment.

The Paris Charles de Gaulle–Le Bourget Airport Area (420km²) is among the world's fastest-developing aerotropolises, containing 17 logistics parks, 85 business parks, two international-class exhibition and convention complexes, and 12,000 hotel rooms in 2019.

Its multi-modal commercial epicentre is 1,340 hectares on Paris Charles de Gaulle Airport (CDG) dedicated to non-aeronautical development of which hotels, office buildings, retail, and distribution facilities already occupy 600 hectares. Overall, CDG Airport City hosts 700+ firms employing 90,000, placing it among the largest airport cities globally.

Stretching outward from CDG, 25 major commercial projects have either been recently completed or planned. These include the International Trade Centre, the largest integrated business and congress complex in Europe that opened in 2019 near CDG's perimeter hotel cluster. These 25 projects are expected to generate €15 billion in investment and 130,000 jobs by 2025.

Over 1,000 firms are located at Frankfurt Airport (FRA) and its immediate environs, making up Frankfurt Airport City. Its landmark commercial structure, 'The Squire', a 660-metre-long, nine-storey edifice employing a total of 10,000, is less than a 10-minute covered walk to FRA's check-in counters.



Auditing and consulting giant KPMG's European headquarters occupies 40,000 of The Squire's 140,000sqm that additionally house the headquarters of Fraport (the airport's operator), two hotels, shops and restaurants.

Two other key components of Frankfurt Airport City are Gateway Gardens (headquarters to LSG Sky Chefs and others) and the 750,000-square-metre Mönchhof Logistics Park. Gateway Gardens also houses three hotels (completed since 2017) along with higher education, medical, exhibition, and leisure facilities, while Mönchhof is reputedly the largest contiguous block of logistically zoned land being constructed in the Rhine–Main region.

Surrounding green areas and protected forests (Frankfurt City Forest) spatially constrain aerotropolis development. Accordingly, Fraport and others strive to make the highest and best use of commercial and logistics properties on and adjacent to FRA.

Known as 'Aviapolis', Finland's 42-square-kilometre aerotropolis is being developed around Helsinki Airport (HEL) via PPP between the city of Vantaa (HEL's location), Finavia (the airport's operator), real estate firms, and local landowners.

Aviapolis contains a significant hotel cluster (three completed since 2017), a congress centre, the 87,000sqm Flamingo Entertainment Centre and, adjacent 86,100sqm Jumbo shopping centre employing 1,500, the Helsinki Airport World Trade Centre and Vantaa Business Park's seven office buildings (housing numerous firms along with a Technopolis campus providing technology-oriented firms space and supporting services). About 2,000 companies call Aviapolis home, employing more than 35,000 people.

Airport city projects are also underway at Munich Airport (MUC), which has a 551-room five-star Hilton Hotel between Terminals 1 and 2 with an adjacent special events area plus a full-service medical clinic. MUC is likewise developing a future-oriented innovation campus on 500,000sqm of land. Other airport cities and aerotropolises from Athens to Zurich (also including Manchester, Moscow Domodedovo, Prague and Vienna, among others) are evolving throughout Europe.

The Americas

In the US, six gateway airports drive airport city and aerotropolis development: Atlanta, Dallas/Fort Worth, Denver, Detroit, Memphis, and Orlando.

After decades of dormancy, commercial investment is accelerating on and outward from Atlanta Hartsfield-Jackson Airport (ATL) — 2019's busiest, handling 111 million passengers. Aerotropolis

Community Improvement Districts are attracting investment in logistics, hotels, and corporate headquarters, including those of Porsche Cars, Chick-fil-A and Delta.

Dallas/Fort Worth International Airport (DFW), which covers 17,000 acres, and its outlying areas remain hotbeds for aerotropolis investment. By 2020, half of the 6,000-acre airport property designated as commercial and industrial was developed, most recently the 598-acre Passport Business Park and Amazon's 2.4-million-square-foot fulfillment centre.

In the greater DFW Aerotropolis, dynamic Las Colinas (ten minutes from DFW) hosts 8,000+ businesses, including the global headquarters of seven Fortune 500 firms.

Southlake, an upscale community three miles from DFW, has emerged as one of the wealthiest US municipalities by median household income. Home to executives, managers, and air travel-intensive professionals, Southlake demonstrates aerotropolises can be quality residential as well as commercial magnets.

With expanses of open land on and around the 53-square-mile Denver International Airport (DEN), expectations remain high for the Denver Aerotropolis. The 484-room, 35-suite terminal-linked Westin hotel at DEN is being complemented by substantial upgrades of retail and leisure services in its architecturally stunning terminal.

Just beyond DEN, Panasonic's Denver CityNOW project and the Gaylord Rockies Resort and Convention Center are spurring aerotropolis development. So, too, are a number of 1,000+ acre mixed-use aerotropolis projects underway along with transit-oriented development around airport express train (FasTracks) stations linking DEN to downtown.

Detroit Metro Airport (DTW), a Delta hub, supports a region that has faced severe economic challenges. Regional leaders embraced the aerotropolis model to diversify and ignite local economies, but the Detroit Region Aerotropolis also struggled. After decade-long inactivity, Amazon, GE, Mopar, Penske Logistics, and others' investments in the last five years have pumped new life into the aerotropolis.

A Detroit Region Aerotropolis Development Corporation has mobilised fiscal resources and aligned stakeholders to promote 60,000 developable acres outward from DTW's magnificent \$1 billion McNamara terminal (an airport mini-city itself) and Westin Hotel within.

Memphis International Airport (MEM) was rocked when Delta closed its hub in 2013. MEM's airport authority is restructuring its terminals for greater compactness and accessibility of retail, F&B and passenger services.

Despite Delta's withdrawal, MEM's FedEx World hub continues to attract e-commerce, smart electronics, high-value food perishables, pharmaceutical, and medical device facilities to its environs. FedEx announced a \$1 billion upgrade to its Memphis hub in 2018, including new sort and cool-chain systems, advanced automation, and other capabilities that should further boost the Memphis Aerotropolis. Completion is expected in 2022.

An aerotropolis is evolving around Orlando International Airport (MCO), spurred not just by high-tech and Disney World (plus other theme parks and resorts), but also the 17-square-mile (10,800-acre) rapidly developing Lake Nona smart city just east of MCO.

Lake Nona hosts Medical City, a life sciences district anchored by the University of Central Florida's medical school and world-leading research centres. During the past three years, this mushrooming airport edge city established a world-class international sports and performance district led by the US Tennis Association's national campus and PGA championship golf courses.

It has also attracted several corporate complexes, such as KPMG's \$450 million, 800,000-square-foot global training centre for its auditing and consulting professionals.

Alberta, Edmonton, and Vancouver are at the forefront of Canada's airport city and aerotropolis development. A major aerotropolis around Toronto's proposed second major commercial airport in Pickering is planned, though environmentalists still fight the project.

South America's aerotropolis development held considerable promise a decade ago, particularly on and near Panama City's Tocumen and Brazil's Belo Horizonte international airports, but recent political and economic disruptions impeded progress.

Similarly, Mexico City's \$13 billion international airport that was being constructed 14 miles northeast of downtown under airport city and aerotropolis principles was abruptly cancelled in late 2018, midway through construction, by Mexico's newly elected president. Consequently, Mexico City's airport authority compensated contractors \$4.5 billion in 2019.

Africa and the Middle East

Two aerotropolis projects are underway in South Africa's Johannesburg and Durban regions. An airport city is forming on Johannesburg International Airport (JNB) consisting of three major commercial precincts. Aerotropolis development is occurring outward from JNB in the Ekurhuleni Metropolitan Municipality based on a master plan completed in 2015 for a 30-kilometre radius around the airport.

The Durban Aerotropolis is centred on King Shaka International Airport (KSIA), 35 kilometres north of downtown Durban. Attracting investment in 2017–2020, Dube TradeZone, Dube AgriZone and Dube City comprise Dube TradePort, a logistics-oriented complex occupying major portions of KSIA.

Around 8,000 developable hectares radiate from KSIA. As of 2019, 42 million square metres of commercial development and 130,000+ residential units were planned for the Durban Aerotropolis.

Numerous Middle East countries have stated ambitions to develop airport cities at their primary air gateways and aerotropolises around them (Abu Dhabi, Egypt, Iran, Saudi Arabia, Turkey, and Qatar, for example), but Dubai followed through and went big.

Airport city functions are heavily concentrated at Dubai International Airport (DXB), the world's busiest gateway by

international passengers. Dedicated primarily to flag carrier Emirates, Terminal 3 is an airport city itself, housing world-class duty-free shopping, four and five-star hotels, leisure amenities, and a remarkable Emirates business-class lounge the scale of some midsize airport terminals.

DXB's 691,000-square-metre Free Zone offers distribution centres, offices, and light manufacturing plus a 10,000-square-metre temperature-controlled perishables centre.

Dubai's second international airport (Al Maktoum) that opened for passenger service in 2013 anchors Dubai South, a 145-square-kilometre purpose-built aerotropolis. Originally envisioned to be the world's busiest, the airport is designed to drive eight surrounding aerotropolis districts focusing on Aviation Industry, Logistics, Residential, Golf, Commercial, Humanitarian, and Exhibition (World Expo 2020, for instance) functions, plus Dubai Business Park.

By 2019, 1,200 firms were operational in Dubai South. However, with the slowdown in Emirates Airline's growth the past two years, plans to shift much of DXB's passenger traffic to Al Maktoum stalled. Dubai South's commercial development will likely be impacted.

Coronavirus and aviation crisis impacts

The impact of the 2020 coronavirus pandemic will further delay Dubai South's development timetable as it already has with the postponement of World Expo 2020.

Airport-linked development in most other regions will also be stymied, at least in the short-term, by the 2020 collapse of aviation created by the pandemic and its associated global economic downturn. With air traffic in many countries depleted by as much as 90% in April 2020 compared to a year earlier, passenger terminals throughout the world were near empty and new investment initiatives in their surrounding commercial zones at a virtual standstill.

Yet, just as was the case with SARS in 2003, the great recession of 2008–09, and prior health and economic crises, resolutions of the coronavirus pandemic and the global economic downturn will occur with worldwide air passenger and cargo volumes rebounding in the years afterward to new heights.

Consequently, commercial airports and their outlying economic zones, which together constitute the aerotropolis, will resume their 21st-century roles as modern business magnets and metropolitan area economic catalyzers.

It must not be forgotten that aviation, airports, and the aerotropolis are inextricably interwoven and that their growth represents long-term structural trends. These long-term growth trends (measured in decades) will endure and not be reversed by periodic short-term downward cycles of a year or two, no matter how steep they may be.

Dictated by the wants and needs of people and business, the 21st century will remain the aviation century with airports, airport cities and their greater aerotropolises taking on ever more importance. AW

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