Creating a Competitive Aerotropolis
What is an Aerotropolis?

The US government has defined an aerotropolis as …

“a multimodal freight and passenger transportation complex which supports efficient, cost-effective, sustainable development in a defined region of economic significance centered around a major airport.”


A simpler definition …

a metropolitan subregion whose infrastructure, land-use, and economy are centered on an airport.
But the aerotropolis is also a strategy

That is, a successful aerotropolis represents a coordinated set of infrastructure, commercial real estate, and policy interventions which

1. Upgrade airport-region urban and employment assets,
2. Reduce ground-based transport times and costs, and
3. Expand air route connectivity

to boost trade, attract investment, and increase operational efficiencies of firms and places by economizing on time.

For many high-value businesses and high-value businesspeople, time is not just cost; it is currency.
The Aerotropolis Strategy

• Primary objective: Enhancing business and metropolitan-region competitiveness through better air connectivity, improved multimodal airport surface transportation access, and coordinated aviation-linked commercial development, complemented with good urban planning.

• Aerotropolis value proposition: Offers businesses and businesspeople located near or with good transport access to the airport with speedy connectivity to their suppliers, customers, and enterprise partners, nationally and worldwide.

• Key components: Contains the full set of cargo, logistics, commercial, and urban services that support airlines, air travelers, and aviation-linked businesses.

• Outcome: Leverages the “Fifth Wave” of transit-oriented development to anchor airport-centric commercial development and drive it throughout the metropolitan region.
The Aerotropolis Represents The Fifth Wave of Transit-Oriented Development

First Wave: Seaports
Second Wave: River & Canal-Based Development
Third Wave: Railroads
Fourth Wave: Highways
Fifth Wave: Airports

Transportation infrastructure has always shaped business location, commercial activity, and urban development.
Basic Drivers of the FIFTH WAVE

- **Large jet aircraft** (along with IT advances)
- **Globalization** (producers & consumers)
- **Speed** (time-based competition)
- **Agility** (customization & flexible market response)
- **Connectivity** (worldwide enterprise networks)
- **Perishability** (pharma, fish, flowers, fashions)
- **Tourism** (especially international)

Tourist Arrivals by World Region

Global Air Transport, 1970-2014

The Next Two Decades

• Between 2014 and 2034, worldwide commercial passenger traffic will likely increase from 5.4 billion to approximately 14 billion (nearly 40 million pax/day).

• In the same period (2014 to 2034), world air cargo traffic is expected to nearly triple.

• During this period (2014-2034), 35,280 new commercial aircraft will come into service with a new market value of US$4.8 trillion.

Source: IATA & Airports Council International (2015); Boeing Current Market Outlook 2014-2034
The 21st-Century Economy is becoming an Aviation-Based Economy

• Aviation is shaping the new global economy.

• High-value products and high-value business people go by air: e.g., aerospace components, biomeds, smartphones, sushi-grade tuna, business executives, corporate lawyers, investment bankers, etc.

• 35% of the value of world goods trade already moves by air (much greater percentage for business services exports and international tourism).

• Almost all high-tech supply chains are connected by air cargo (the physical Internet).

Source: John D. Kasarda and Greg Lindsay, Aerotropolis: The Way We’ll Live Next (2011), IATA 2014
Global Supply Chain – Apple iPhone 6
Aviation’s Global Physical Internet
(over 72,000 commercial aircraft routes in June 2014)

Source: Airline Route Mapper (2014-Jun-28 dataset)

Image Source: OpenFlights.org
Airport Roles in the Physical Internet

- Routers of aviation’s Physical Internet

- Concrete interfaces of the global meeting the local in flows of people, products, and advanced business services

- Business and industrial magnets

- Metropolitan region economic catalysts
Airports Have Become Business Magnets and Metropolitan Area Economic Catalysts by…

- Providing accessibility, speed, and agility to global supply chains and perishables.

- Rapidly connecting a metropolitan region’s firms to their suppliers, customers, and enterprise partners nationally and worldwide.

- Attracting tourists and serving commercial needs of millions of air passengers and airport-area visitors annually.

- Creating major new urban economic entities: Airport Cities and the greater Aerotropolis.
New Airport-Centered Urban Economic Forms

Airport Cities and The Aerotropolis
Rise of the Airport City

• Airports today – much more than aviation infrastructures

• They are multimodal, multifunctional enterprises generating considerable business development within and well beyond their boundaries.

• All commercial functions of a modern metropolitan center are locating on and immediately around major airport sites – transforming them from “city airports” to “airport cities”.
The Airport City

Airside
- Shopping mall concepts merged into passenger terminals
  - Retail (including streetscapes & upscale boutiques)
  - Restaurants (increasingly higher-end and themed)
  - Leisure (spas, fitness, recreation, cinemas, etc…)
  - Culture (museums, regional art, musicians, chapels)
- Logistics and Air Cargo

Landside
- Hotels and entertainment
- Office & retail complexes
- Convention & exhibition centers
- Free trade zones & SEZ’s
- Time-sensitive goods processing
Airport City’s Economic Impact

1. Daily consumer population at major airports is larger than that of many mid-sized cities, and with higher incomes.

2. Numerous airports achieve greater percentage of revenues from non-aeronautical sources than aeronautical sources.

3. Rapid commercial development around many major airports makes them leading urban growth generators, as airport areas become significant employment, shopping, trading, and business destinations in their own right.

4. Airport area develops a “brand image”, attracting even non-aviation-linked businesses such as direct factory outlets & big box retail, as well as housing.
The Rise of the Aerotropolis

Spines, nodes, and clusters of aviation-linked business and associated residential complexes are forming along airport transportation corridors up to 30 kilometers from some airports with significant economic impact measured up to 90 kilometers.

- Logistics and perishables distribution centers
- Time-critical light manufacturing
- Office buildings and technology parks
- Retail centers and wholesale merchandise marts
- Information and communications technology complexes
- Bioscience and medical facilities
- Higher education campuses
- Hotel, convention, tourism and entertainment complexes
- Large mixed-use residential/commercial developments
- Airport “Edge Cities” (e.g., Amsterdam Zuidas; Las Colinas, Texas; S. Korea’s Songdo City)

Just as you have Central Cities and the greater Metropolis, you now have Airport Cities and the greater Aerotropolis.
Aerotropolis Schematic with Airport City Core
(compressed version)
Illustrations of Airport City & Aerotropolis Business Developments
Civic Plaza: Indianapolis Terminal
(21st-Century Central Square)
Hotel & Meeting: Dallas-Ft. Worth Grand Hyatt
(21st-Century Virtual Corporate Headquarters)
Frankfurt Airport’s “The Squaire” (21st-Century Multimodal Office Hub)

Airport-Linked Business Parks
(Gate8 Business Park, Vantaa’s Aviapolis)
Small Business Incubators
(Technopolis: Vantaa’s Aviapolis)
Airport-linked High-tech Manufacturing

Foxconn Smartphone Assembly Campus Adjacent to Zhengzhou International Airport
(260,000 workers assembled over 100 million iPhones in 2015)
Air Cargo and Logistics Complexes
(Taiwan Taoyuan Airport Farglory FTZ)
Airport City
Amsterdam Schiphol Central Business District
Paris Charles de Gaulle
(Roissypole: CDG’s Airport City)
Washington Dulles Aerotropolis Corridor
(Strings & Clusters of ICT & Consulting Firms)

450,000 jobs generated
Dulles Access Highway Corridor
(Washington Dulles International Airport in background at top)

1962

© 2007 Metropolitan Washington Airports Authority, Photo by Eric Taylor

2007

© 2007 Metropolitan Washington Airports Authority, Photo by Eric Taylor

Photo courtesy of Metropolitan Washington Airports Authority
Aerotropolis Corridor Cities

- Major airport edge cities are forming along aerotropolis corridors
  - Amsterdam Zuidas
  - Las Colinas, Texas
  - Songdo City, South Korea
- Attracting large multinational firms
- Reorienting the urban business landscape
Amsterdam Zuidas
(6 miles east of Schiphol Airport)

7 million ft\(^2\) office space
1.1 million ft\(^2\) retail
1 million ft\(^2\) housing

Headquarters of ABN AMRO and ING

ABN AMRO

7 minutes to Amsterdam Schiphol’s airport terminal

Las Colinas, Texas
(7 miles east of Dallas-Forth Worth Airport)

22.5 million ft\(^2\) offices
1.3+ million ft\(^2\) retail
8.5 million ft\(^2\) light industrial space

10 minutes to DFW’s Terminals
5 Fortune 500 headquarters
8 Fortune 1000 headquarters

New Songdo City, Incheon, South Korea
(8 mi east of Incheon International Airport)

Office: 43 million ft²
Residential: 38 million ft²
Retail: 11 million ft²
Hotels: 554 thousand ft²
Civic Space: 5.4 million ft²
Pop.: 65k in 2015

Courtesy: Gale International
Creating Competitive Advantage: Speed & Connectivity Can Trump Size

• In the aerotropolis model, it is not the big eating the small, but the fast eating the slow.
• Connectivity = Competitiveness
  – Amsterdam Zuidas
  – Dubai
  – Hong Kong
  – Las Colinas, Texas
  – Singapore
  – Songdo City
  – Vantaa
• The fastest, best-connected places will capture 21st-century global business.
• This is the aerotropolis strategy.
Aerotropolis: Creating Competitiveness & Business Development

The 21st-Century Airport, Airport City, and Aerotropolis
Leveraging Speed and Connectivity for Commercial Advantage
Thank You!

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