

Creating the successful airport city of the future: A vision

White paper



vision

The situation

Brand new greenfield airports are few and far between. In the West, the two most recent examples, Munich and Denver, are now both over a decade old and have long ceased to be called “new.”

Japan has moved a few of its airports offshore, creating not only the facility but also the ground on which it sits. Similar techniques were employed in the building of Hong Kong’s Chek Lap Kok, now also a decade old, which carried the model a bit further by incorporating an intermodal transportation hub. Other cities that have opened new facilities include Bangkok, Kuala Lumpur and Hyderabad. Obviously, most of the new construction has been in the burgeoning Asian market.

In the period that these facilities have been designed and built, technology has enabled stunning changes in the way that passengers are handled. Many travelers no longer require or use traditional processes for their journeys and the ubiquitous nature of cell phones and other portable devices portends a continuing evolution of alternative forms of passenger interconnectivity. Hong Kong has extended that process innovation to baggage, where RFID tags are affixed to each passenger’s bags in order to facilitate handling and transfer.

Nonetheless, even these relatively new facilities have failed to fully incorporate the technological innovations that are rapidly entering the marketplace. And for the vast number of existing airports, traditional processes generated architectural designs that are often difficult to adapt to new technologies. Certainly the primary example of this comes in the makeshift security zones that have been imposed on floor plans designed to be open rather than restrictive. While some new facilities such as T5 at Heathrow and the new jetBlue JFK terminal have been designed for a post 9/11 environment, most terminals continue to struggle with government mandates and design limitations that make the security clearance process both complex and annoying.

The mandate

Aviation continues to expand. In established markets, new entrants continue to enlarge the product base available to customers, and in emerging markets one needs almost daily updates to remain current. The result of all of this growth is continuing pressure on the infrastructure—and especially airports. Facilities with fixed limitations are essentially shutting the door to additional entrants, or as in the case of Heathrow, insisting that newcomers acquire existing slots by a variety of means.

But the ultimate solution is to be found in more and bigger airports which incorporate the latest technology for efficiently handling the increasing passenger numbers. Even those facilities that are unable to accommodate more aircraft movements, such as Heathrow, will see passenger numbers continue to rise as ever-larger aircraft come into use. Much as the introduction of the 747 forced the rapid shift from manual to electronic booking systems, airports must incorporate the latest technology if they are to avoid being overwhelmed by growing passenger throughput.

The model

Airlines and their partners have been working with IATA over the past few years to comply with the parameters established by a drive called *Simplify the Business*. This is a broad project that, at its core, is attempting to standardize processes and eliminate paper. Some of the initiatives, including the full implementation of e-ticketing, common use (CUSS) kiosks, and standardization of boarding passes with bar coding, are well advanced and likely to meet the deadlines.

Other aspects of the plan, such as wider use of RFID tags for baggage and paperless cargo, have had significantly less success, due to both cost and the inability to establish standards against which such systems would operate. Despite the deferred implementation of these final two tasks, any new airports, or new construction at existing locations, must incorporate readiness for these developments, both in structural and technological design.

More importantly, airports, which have traditionally been self-contained entities, must be fully linked with the broader community, as ever-more functions are performed off site. Furthermore, with the continued need for “just-in-time” operations, airports are increasingly becoming intermodal hubs that act as one link in a continuous value chain. Lacking this seamless process integration, the time-sensitive advantages of air travel and cargo can be diminished. As one example, a number of airports around the world now incorporate meeting facilities that allow attendees to gather at a destination airport, conduct business, and return without ever leaving the immediate airport environment. The more an airport’s desire to be seen as a “hub” of any activity, the greater the need for suitable technological capability and development.

If such facilities and capabilities are available, such as we see in Hong Kong, they will establish a reputation for service and excellence that then becomes the standard by which others are judged.

In the past few years both a publication and a series of conferences have carried the label *Airport Cities* in recognition of the fact that airports have emerged as far more than simple terminal points for aircraft. They are now independent centers of economic activity that both enhance and strengthen other commercial and industrial activity.

“John D. Kasarda, director of The Kenan Institute of Private Enterprise in Chapel Hill, N.C., discussed the evolution of the ‘aerotropolis,’ in which mixed-use developments combining office, retail, and entertainment facilities—even some housing—are being placed strategically around airports, effectively creating an ‘airport city’ out of what was once merely a city airport. Airports represent the ‘fifth wave’ of changes in transportation infrastructure that have shaped commercial development over the past three centuries: the first being seaports; the second, rivers and canals; the third, railroads; and the fourth, highways. ‘Aviation will drive development in the 21st century the ways cars did in the 20th century.’”



Report of the urban land institute, November 2002

Keys to success

What will define the successful aerotropolis of the future? Many cities have built or are planning such airport cities. These include:

- Hong Kong International Airport, Chek Lap Kok
- Kuala Lumpur International Airport
- Incheon International Airport, Seoul
- Dallas-Fort Worth International Airport
- Schiphol Airport, Amsterdam
- Dubai World Central (under construction)

Today, Incheon is regarded as the leader. Which city will carry that mantle in the future? The answer lies in the ability of these facilities to attract global customers and their businesses. Airlines, freight companies and logistics integrators are obvious players. However, a true aerotropolis will expand that concept to include time-sensitive manufacturers, residential and retail developments, and medical and recreational facilities, including theme parks and golf resorts.

Therefore the aerotropolis will need to offer a sustainable competitive advantage to its customers. This competitive advantage will have many facets, including the following:

- Exceptional Customer Experience
 - Ensure a unique, tailored and relevant experience for all customers, including passengers, visitors, retailers, airlines and commercial clients
 - Comprehensive display of real-time information such as flight arrival/departure, baggage and freight tracking etc. across the aerotropolis
- Connectivity
 - Fast and seamless connections for passengers, baggage and freight
 - Creation of an integrated multi-modal logistics hub

- Robust Safety and Security
 - Deploy trusted, non-intrusive biometric-enabled systems
 - Introduce risk-adapted security assessments for passengers and freight
- Operational efficiency
 - Enhance airport operational efficiency by the effective management of resources and systems
 - Employ technology and systems to minimize delays in landing, takeoff and taxiing to fully utilize terminal facilities and staff, maximizing asset use
 - Realize a paperless environment
- Integrated business processes
 - Integrate the operations of all the stakeholders, both in the airport and airport city, including the use of collaborative decision making when appropriate
 - Enable the free-flow of information between stakeholders, integrate airport systems, and create one reliable source of accurate information
 - Deploy common enterprise systems aligned with industry standards
- Attract and retain qualified professionals
 - Create an environment which attracts the best people to study, work and live in the aerotropolis
 - Maintain that environment with continuous improvement

So the challenge facing existing aerotropolises such as Incheon and Schiphol, as well as those under development such as Dubai World Central and Kuala Lumpur, is to provide the competitive advantages necessary to attract appropriate operators, businesses and residents to their location. Those that succeed will create a powerful economic driver for their region and country, realizing the full benefits of their efforts.

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