Airport Cities

The Evolution

Authors: Cr Gary Jungwirth
Brett Luxford
**Introduction**

The development of airports beyond a key piece of transport infrastructure is occurring worldwide. Airports are transforming themselves into ‘Airport Cities’ and in the process they are having a significant impact on local and regional economies.

Airports are seeking to maximize non-aeronautical income from a range of activities including development industry, warehousing, hospitality, office buildings, accommodation, residential and in the case of Dallas/Fort Worth International Airport, the refinement of natural gas.

This report highlights case studies of airports around the world that are becoming ‘Airport Cities’ and aerotropolises and reflects what this means for Melbourne International Airport, Hume City and the greater northern region of Melbourne.

**Airport Cities**

The concept of ‘Airport Cities’ has been gathering momentum for many years. Airports have moved from small facilities catering for the needs of a few who could afford airline travel to a thriving hub catering for millions of customers per year.

Each year Melbourne International Airport caters for 20 million passengers passing through their terminals and they are expecting significant growth over the coming years. This means that the equivalent of the entire population of Australia pass through the airport every year. This many passengers translates into a customer base that rivals large shopping centres.

Schiphol Airport in Amsterdam was one of the first to realise that their airport was no longer a transport hub but in fact had the potential to become an activity centre and economic generator for the region. With the introduction of on-site retail-office-hospitality accommodation-industry Schiphol Airport transformed the area and now attracts rents greater than in down-town Amsterdam.

In addition to the development with the airport, significant supporting businesses and infrastructure began to cluster around the airport and a greater range of businesses began to consider Schiphol Airport as a prime destination to do business.
An Aerotropolis was born. The ‘Airport City’, plus surrounding areas beyond the airport that were reliant on the airport created what is know today as an Aerotropolis. Major corporations set up their corporate headquarters around the airport and a significant positive economic impact to the local area and indeed the wider region was realised.

Schiphol is not an isolated example. Many cities are gaining a significant competitive advantage over other cities by utilising their international airports to create ‘Airport Cities’ and thereby transforming their economy.

Airport Cities a Worldwide phenomenon

The report has already highlighted the advantages Schiphol area received by maximizing the benefits of their airport and planning the integration of the communities into activities at the airport. The report will now consider other examples and highlight how these cities are utilising their airports to leverage economic development.

“Firms are clustering at and around major airports because of the accessibility, speed and agility airports provide to new-economy supply chains and the connectivity to customers and enterprise partners, and tourists (nationally and worldwide)” Dr John Kasarda – Director of Keenan Institute for Private Enterprise.

Dallas/Fort Worth

This report would not be complete without providing a case study of the host airport for the Airport Cities Conference 2008, Dallas/Fort Worth International Airport (DFW). While the size and scope of the activities being undertaken by Dallas/Fort Worth may well be in excess of anything that could occur in Hume City, it does highlight many learnings for Melbourne.

Dallas/Fort Worth International Airport opened in 1974 and includes 7 runways (5 parallel and 2 cross runways). With a workforce of 55,000 and 60 million passengers per year, it is the 3rd busiest airport in the world when passenger and freight movements are combined. It is worth noting that there is a 100 year supply of land available on site.

DFW is jointly owned by the cities of Dallas and Fort Worth, however the site is set across 5 local government areas. Set on 18,000 acres, the airport has identified 6,600 acres for the development
of non-aeronautical activities. The airport is located approximately 34 kilometres, from downtown Dallas and is connected to Dallas via a major freeway. It is also connected to Fort Worth by a major freeway.

DFW now attributes 66% of their revenue from non aeronautical activities. The airport competes with the Alliance Airfield in Fort Worth for cargo business.

Dallas/Fort Worth International Airport’s economic impact is measured at $16B dollars and they contribute 300,000 jobs to the local area. The region is home to 24 ‘Fortune 500’ companies who credit the DFW as the reason for locating to the region.

While they are developing the airport both the airport’s CEO Jeffrey Fagan and Vice President of Development, John Terrell, highlighted the need that all development must be strategically aligned to support growth of DFW cargo and their other operations. Therefore development that does not fit with the airport activities should be discouraged.

This point was reinforced by many other speakers who highlighted that to have an ‘Airport City’, you first of all have to have a well functioning airport.

DFW is also an example of how communication between the airport operators and local government is paramount to achieve outcomes that benefit all. Master planning is undertaken in partnership with neighbouring municipalities and the cities of Dallas and Fort Worth to ensure that the plans align between the airport and the City.

DFW provide regular briefings to Council and executive management teams. DFW does not have public transport to the terminal however by 2012 three stations will be located to service the zone – one will be located to service the west side of the airport which will cater for an industrial and retail area, the second will stop at the main terminal and the third will service the south gate plaza area.

The south gate plaza is a 33 acre mixed use zone. The types of businesses locating around the airport deal with time-sensitive cargo and utilize the airport to move freight interstate and overseas overnight. Types of companies include Amazon.com.
There is a free trade zone also being developed which will be discussed later in this report. One unique feature of the DFW International Airport is that the airport is located on top of a natural gas deposit. They are mining the natural gas and expect supply to last 10 years. This will provide a strong income stream and provide the airport funds to upgrade facilities.

One issue that needs consideration is the issue of architecture and visual amenity. This must be important when considering Dallas/Fort Worth. DFW is not visually pleasing. For all its advantages the airport is dull and drab concrete, all the same colour and the entrance is dominated by freeways, road access and multi-level car parking.

The types of users that support and complement the aviation at DFW include industrial, flexible office, corporate office, corporate campus, freeway commercial, commercial retail, mixed use (which is local retail, garden, office and restaurants) and hospitality. DFW undertake all permits and its planning department determines land use requirements on site. There is no involvement of local government in the planning approval process.

**The Memphis Aerotropolis**

Memphis has the benefits of a curfew-free airport that is strategically located as a key distribution point for both central North America and the east coast. The proximity of Memphis led FedEx to choose the airport as its main American point and site for its super hub. As a consequence of the FedEx decision, Memphis has been the world’s busiest cargo airport since 1992.

The airport allows distribution to 300 national and international destinations and has an economic impact for the region of US$20.7B dollars. One in four jobs is as a direct result of the airport. Memphis is only a mid-size city and therefore not a large airport, however as a result of its location and previous history in transportation it has been able to leverage strong economic development in growth and prosperity from the airport.

As with DFW, Memphis Airport’s CEO Larry Cox attributes the success of the airport to partnerships that rely strongly on co-operation and communication. “Everyone recognizes that the economy relies on the airport” he said.
To assist in development of Memphis Aerotropolis the Memphis ED was established. With $60 million earmarked in project management, the program brings together 2,500 business and community leaders to create the vision and ensure everyone understands the need for the airport.

The sound of 300 flights per night between 11pm and 4am also reminds them that for the airport to maintain its competitive advantage, the curfew-free operations are a necessity. The Memphis ED also puts the airport at the heart of a renewal strategy.

‘Memphis Tomorrow’ brings together the region’s largest employers and they all work together on a new 20 year master plan. The definition of the Aerotropolis as outlined by Memphis extends beyond the airport boundaries for approximately 25 – 60 miles.

The Memphis Aerotropolis Boundaries
**Detroit Aerotropolis**

Detroit has traditionally been the home of automotive manufacturing in the US and is home to some of the world’s best known cars. Detroit has determined the decline in the automotive industry will not change and that there is an urgent need to diversify their economy. The Detroit Airport is at the centre of the Detroit Renaissance project.

Detroit became a hub for North-West airlines in 1980, however they have only recently, in 2005, realized the benefits that the airport can bring. The need for speed, flexibility and accessibility that businesses require today is helping Detroit move from a manufacturing based economy to a more diverse highly-tech based economy.

The objective of the Detroit Region Aerotropolis is to leverage Detroit Metro and Willow Run Airports and our strong geographic and manufacturing-based assets to drive economic transformation throughout all parts of the Detroit region.

The Detroit project also engaged local government. Starting in late 2005, they met with the seven local governments, a neighbouring county and the Airport Authority to engage them in the process.

In January 2006, the University of Michigan Taubman College of Architecture hosted a Charrette to generate a vision and design strategies for the Detroit Region Aerotropolis. They now believe that there is a sense of urgency to continue the transformation of the region and the economy and see that the airport infrastructure is a key economic transformation agent.

**Fragport Airport (Frankfurt)**

The development of the ‘Airport City’ of aerotropolis is not only confined to large airports with significant room to expand. Fragport Airport in Frankfurt is an example of an airport renewing itself and in the process renewing its local area and local economy.

The airport occupies 4,700 acres and caters for 148,000 passengers per day (54 million per year). The airport is constrained by the metropolitan area, though have recently begun to develop logistic centres and business centres to capitalize on the demand in the area.
There are 500 companies now on site at the airport with 70,000 employees. With an efficient and high speed rail network connecting passengers from Europe and locally to the airport, the airport has become a real centre for business.

Frankfurt is a connecting airport and tries to maximize the space available to ensure an efficient flow of people and goods to and from the airport so business will locate in the area. The message again coming through loud and clear from Christopher Hommench, Vice-President of Real Estate at Fraport Airport was that the airport cannot do it alone and requires the support of local authorities and the local community.

Reinforcing Examples

Airports from North America, China, Europe, Asia, and the Middle East all presented and highlighted the benefits regions have been able to leverage from the development of an international airport in their region.

Chicago's O'Hare Airport continues to work with its community to develop further runways and business inside the fence of the airport and local communities and neighbouring councils including the Du Page County undertook economic planning to ensure that they are maximizing the benefits the airport provided for the creation of jobs and businesses outside the airport fence.

Dr. John Kasarda from the Keenan Institute highlighted that airports have become multi-modal, multi-functional enterprises. He pointed out that the ‘Airport City’ has many elements. Terminal and air side they have shopping malls, leisure and artistic venues, retail, gyms, cinemas, restaurants, chapels, museums, logistics and air cargo. Landside and around the airport they have hotels and entertainment, office and retail complexes, convention and exhibition spaces, medical facilities, free trade zones combined with warehouses.
The image below highlights how Athens is developing their air related activities.

Offering a wide range of products and services

Businesses are clustering around airports because of accessibility, speed and agility and airports provide new economy supply chains. Dr. Kasarda also highlighted that, as well as providing connectivity, airports develop a brand image that people identify with and that rapid commercial development at and around the gateway airports is making them leading urban growth generators.
The image below highlights the impact of Kuala Lumpur International Airport on the region.

How has KLIA affected growth in its surrounding area?

4 new townships
with 6,480 acres yet to be developed
4 hotels (5-star & 3-star) with 1,183 rooms
2 budget hotels (2-star & budget) with 50 rooms
1 golf course

10 new townships
with 14,520 acres yet to be developed
3 hotels (5-star & 4-star) with 392 rooms
Proposed new hotels, incl. 4 in Putrajaya with 1,335 new rooms
1 shopping mall, major wholesale centres in Nilai
supermarkets, bowling alley
2 hospitals
2 golf courses

The impact of airports can reach well beyond the local area and the concept of the aerotropolis can extend from 20 kilometres to 75 kilometres with interconnected businesses and residential complexes reliant upon the airport for connectivity that the airport provides.

Major airports generally receive less than 1/3rd of their revenue from airline operations. There is also a school of thought that says we are on the cusp of an increase in tourism numbers as income in the world goes up and people in developing countries, e.g. India and China, become more mobile. Increasing passenger numbers increases the importance of airports.

The other element that assists the airport to attract business is the brand image that accompanies the airport’s name. Dr. Kasarda stated the rapid commercial development around the gateway airports is making them leading urban growth generators.
One of the main attributes that assists the development of the ‘Airport Cities’ is accessibility. Accessibility is an important requirement for people passing through the airport, businesses locating at the airport and most importantly businesses nearby looking to move freight through the airport.

Therefore the key element that defines a world class airport is excellent infrastructure including communication infrastructure. To utilize the airport to grow and diversify the local economy, a key message is that airport planning and urban planning must take place together and not in isolation of each other.

**Logistics and Economic Development**

A number of speakers highlighted the changing nature of business including that the internet and aircraft are interacting to create an increasingly fast globally networked economy that is changing the rules of international competition and business location. Amazon.com is an example of a company that sells on-line which requires fast pace shipment to world wide destinations.

Airport centre logistic strategies are required to meet the new business reality. The dollar value world wide trade is expanding at 3 times the rate of world GDP. This highlights the nature of globalization. Air cargo now accounts for 40% of the value of the world trade, however is less than 2% of the total weight. Freight forwarders and logistic companies are getting larger and moving more towards cargo planes and not in the valley of passage planes.

Air cargo therefore suits:
1. Products that are high value to weight which are increasingly dominating the new economy
2. Supply chains that are the new competitive advantage
3. Products with speed and agility are as important as price and quality.

The types of products listed above are increasingly becoming more important in the global supply chains.

It is expected that the world air cargo traffic will triple by 2025. People are after speedy and reliable delivery of their products and they are willing to pay for that. That scenario suits air cargo perfectly. It was highlighted that air cargo was not only a trade facilitator but also a trade creator and driver.
Products such as the global trade of cut flowers would not occur without the speed and agility of air cargo. Air cargo has helped revive the developed airports at:

1. Memphis - previously highlighted which accounts for $22B dollar value of annual economic impact - $19.5B of which comes from air cargo alone. More than 50% of businesses in the Memphis area believe that activities are impacted positively by the airport and linked to the future of the airport. FedEx established their hub at the airport and has attracted other businesses including the world’s largest laptop repair centre, the world’s largest cornea bank, the world’s largest DVD distribution centre and the largest overnight drug testing lab.

2. Ontario, California, located more than 40 miles from Los Angeles, the airport has become the hub for UPS with more than 12,000,000 sq.ft of logistics and distribution space added every year since 1998. The airport area is home to more than 100 truck companies which have set up within 6 miles of the airport. The airport also has an intermodal hub and the hub has been set up to cater for the airport.

3. Subic Bay Airport (Philippines) - Located 4 hours drive from Manila the establishment of the FedEx hub for Asia in 1995 at the old Naval airfield base has created an economic driver for the area. The exports increased from $24M in 1995 to more than $1.3B in 2005 from the region. Total airport linked employment in that area totalled 56,400.

4. Viracopus Airport (Brazil) - Located 70 miles from Sao Paulo the airport is the primary air cargo hub in the region and accounts for 10% of all Brazilian imports. Investment in technology and telecommunications alone have totalled $7B in the past 10 years and the airport area around Viracopus is fast becoming South America’s silicone gully.

While air cargo can help drive development around the airport, there needs to be an agile logistics system created as well. This will offer businesses superior speed, agility and a highly efficient supply chain. Some of the keys to attracting logistics to an airport include:

- integrated transport – air, road, rail with connections to ports.
- advanced Wi-Fi, wi wan, broadband, and fibre optic communications.
- soft infrastructure support (e.g. free trade zones, 24/7 express customs clearance, open skies for air cargo, logistics (education and training programs).
• manufacturing flextech and distribution facilities located adjacent to or accessible to the airport.
• a 24 hour curfew free access for aircraft.

The image below highlights how Kuala Lumpur International Airport promotes its locational advantages.

A population of 2.5 billion within 3-hour flight radius, a population of 3.5 billion within 6-hour flight radius.

Implications and recommendations for Hume City & Beyond

This report to date has highlighted many examples of where international and regional airports have been utilized to stimulate economic development and, in some cases, drive economic development. The key issue for Hume City and Melbourne International Airport is "what are the key learnings to be taken". These can be broken down into 6 points:

1. Integrated Planning - land use planning, economic planning and strategic planning.
3. Accessibility
4. Advocacy
5. Promotion and targeting
6. Understanding

Integrated Planning

There is a real need to coordinate future land use for Melbourne International Airport with that of Hume City. Melbourne Airport Corporation currently have their Draft Masterplan on public display.

This Masterplan must not only align with Council’s plans for the region but must also complement economic growth in the region. The airport must be seen as a partner in developing the region and planning should take place to seek to maximize the asset within our City. This has implications from a number of other programs and projects which Council has initiated. Planning must include land use, infrastructure and accessibility.

There must also be a coordinated approach when it comes to attracting businesses to the airport region. The longer term future of the airport needs to be considered and work undertaken to ensure land is available to allow that the appropriate type of facilities can be developed.

Land use planning throughout the City should also consider how it relates to the airport even when there is no obvious linkage that exists because as outlined earlier the affect of the airport extends well beyond its boundaries.

If Melbourne International Airport does become an ‘Airport City’, Hume City Council must consider the broader impacts on the existing activity centres and the long term role of these centres. Council should embrace the airport and assist it to grow and develop.

Hume City Council should also promote to Melbourne International Airport the importance of good quality design and the need to ensure that the amenity around Melbourne International Airport is appealing. Good quality design extends to architecture and building excellence on the airport and beyond the airport boundaries to incorporate built forms that make up the ‘Airport City’.
24 Hour Curfew free Status

The Melbourne International Airport in a recently released Economic Impact Study highlighted the competitive advantage that they have been a 24 hour curfew free airport. The benefits of this to the airport were reinforced by speaker after speaker at the Airport Cities Conference 2008 in Dallas, Texas.

Hume City Council must work to ensure that the 24 hour curfew free status remains and that only appropriate development occurs around the airport and the right of the airport to operate is not impinged.

Many international airports have utilized this space to create areas of employment and economic generation and work must be undertaken with the Melbourne Airport Corporation and the Victorian Government to identify appropriate uses and zone land accordingly.

Accessibility

As highlighted earlier, accessibility for passengers, professionals, employees, businesses and cargo are key factors in developing and maintaining an international airport city. The Economic Impact Study from Melbourne International Airport states that the freight from Melbourne was less than the freight from Sydney.

Melbourne’s curfew free advantages should be further explored to ascertain if accessibility is an issue in stopping Melbourne generating more freight.

Melbourne International Airport is serviced only by the Tullamarine Freeway. Further planning needs to be undertaken to ensure major pieces of infrastructure such as the Outer Metropolitan Ring Road improve and increase access points to Melbourne Airport.

Rail connection to the airport also needs to remain an issue that is high on the agenda. The rail infrastructure should not only focus on passengers but consider how to perform the freight task in an efficient and timely manner.
Melbourne International Airport, with the assistance of Hume City Council should be encouraged to undertake a transport plan to identify gaps that would prevent them from fulfilling the ‘Airport City’ role. As previously highlighted, the infrastructure task extends beyond hard infrastructure and includes items such as IT and communication.

Hume City Council should advocate strongly to both Melbourne International Airport and the State Government to ensure Melbourne International Airport is able to provide world-class communication on site including high speed free Wi-Fi and fibre links.

Advocacy

The role of the airport cannot be underestimated and Hume City Council has a strong role to play in advocating on behalf of and in support of the airport. To truly become an advocate for the airport, an excellent relationship between the airport and Council must exist and there must be mutual trust.

Council should advocate on transport accessibility and land use issues to ensure that the area cannot only grow in harmony with the airport but can also leverage strong economic growth from the airport.

Promotion and Marketing

Melbourne International Airport already undertakes significant promotion within various forms of media, however when Council undertakes promotion of the City it must include the benefits of the airport.

This must extend beyond Hume City Council to be embraced and supported by regional groups such as Northlink/NIETL, Federal Government and State Government.

Understanding

This topic could well have been titled “Communication” or “Shared Vision”. Council must have a greater understanding of the airport and the vision of the airport.
The Melbourne Airport Corporation should embrace Hume City Council as a partner in developing the vision. Whilst the Melbourne Airport Corporation is a private business, many examples worldwide highlight the need for the airport and Local Government to work together for the benefit of both the airport and the wider region.

Council should articulate their vision for the airport and adopt a position that supports the growth of the airport into a fully International Airport City that acts as an economic generator for the region.

Regular briefings should be held between Melbourne Airport Corporation, Hume City Executive Team to ensure both empathy is working towards a common goal.

Conclusion

There are many examples throughout the world where international airports have turned an ageing economy into revitalized hi-tech economy and a growth region.

Hume City Council and Melbourne Airport Corporation have a unique opportunity to create an “Airport City” that would support a new range of jobs and act as an economic generator for the region.

Australia’s location within Asia makes it possible to service a large population within an eight hour flight. Whilst it is acknowledged that more work needs to be undertaken to flesh out this vision further, there is no better time to start than now.