

*Aviation in Asia Pacific – A bird-eye view*



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**Aviation in Asia Pacific- A bird-eye view**

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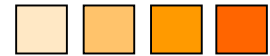
*with*

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This paper depicts the aviation industry in Asia Pacific region, its position in the world and growth in the coming years. It talks about the entry of the Low cost model in the market, how it might progress and whether it would turn hazardous for the major carriers. The performance of the airlines and airports is analyzed.



**Asia Pacific Aviation Industry**

The Asia Pacific aviation industry is experiencing a boom, which has benefited in 2004 from a period of reasonably steady global economic expansion. This has supported solid growth in both passenger and cargo demand, despite ongoing political instability in the Middle East and stubbornly high oil prices. North American and European carriers lost a collective USD 8 billion, contributing to a loss of USD 4.8 billion for international airlines globally in 2004. Based on announced profits and industry estimates, operators in this region finished some USD 3 billion in the black on a net basis for the same year. Chinese airlines alone reportedly generated positive earnings of USD 750 million, much of it from the country's leading three airlines.

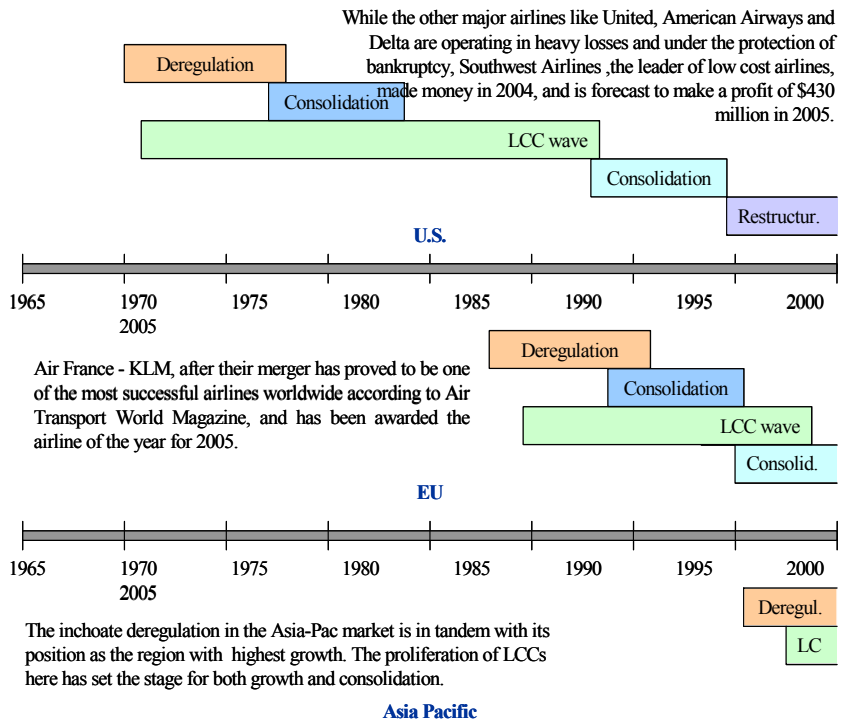
**Asia pacific -Where is it?**

Since the deregulation of the U.S. market in 1971, the airline industry has changed dramatically. The deregulation resulted in proliferation and made the market more competitive. The airlines, for survival, started consolidating. There was a fall in prices and eventually, a new model, the low-cost, came into existence, Southwest being the pioneer of the model. This model has impacted the industry in such a way that the major airlines, which had been successful before, started introducing their low-cost subsidiaries as a part of their survival strategy. The major airlines (United, US airways, Delta) are now restructuring under bankruptcy protection to continue their operations.

The airlines in the European market, which was deregulated almost two decades after the U.S., too have faced a similar change. There were collapses (like Swissair's) and mergers (Air France and KLM) because of the intense competition brought up by the LCCs in the region. Ryanair and easyJet are the leaders of the market with higher operating margins than the legacy carriers. The airlines are in the phase of consolidation.

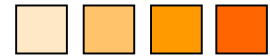
In Asia Pacific, only a few markets have been deregulated. However, deregulation is set to spread in the region. Low cost airlines have not been as dominant as their counterparts in the U.S. and European markets. Many LCCs are yet to start their operations.

**Evolution of market in the regions**



Source: SkyTECH Analysis

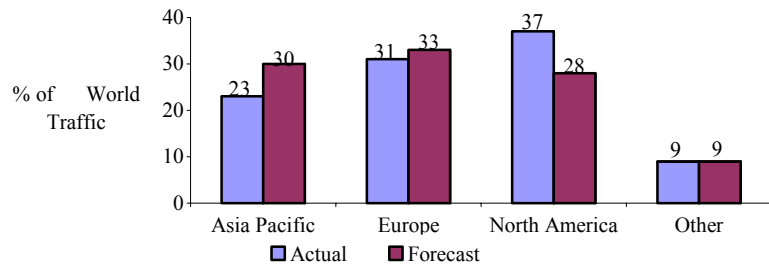




**Growth**

Industry experts say that by 2020, Asia Pacific will have the highest growth rate in Passenger Traffic in the world. The region has the highest growth rates for airfreight in the world since the 1980s. According to IATA statistics, over the period '93-'03, scheduled traffic of airlines here grew at an average annual rate of 5.7% (compared to 4.4% for the world) and the volume of international FTKs almost doubled. It forecasts that the international passenger traffic here will grow by an average of 8.3% each year from 2004 to 2008. ICAO predicts an average growth rate of 6.1% in Pax-KMs in the region over the period 2002 to 2015. In 2002, Asia Pacific's shares of the world Pax-KMs and Cargo (moved to, from or within Asia) were 26.7 % and 45%, and are expected to be 33.2% and 55% respectively by 2015.

World Traffic by Region (2000-2020)



Source: Various, SkyTECH Analysis

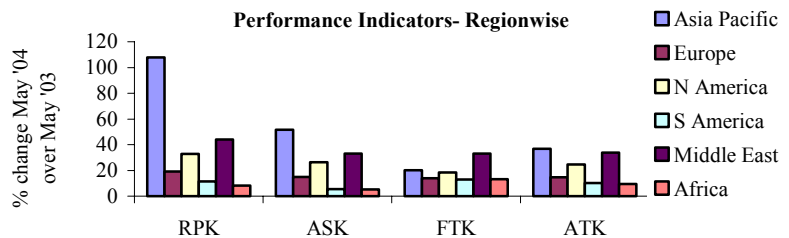
**Aircraft**

Airbus and Boeing are developing long-range, stretch versions of the A340 and 777, known as the A340-600 and the 777-300LR. Both aircraft are aimed at the Asia-Pacific market. Airbus forecasts for the period 2004-2023:

- Asia Pacific will have the highest aircraft size and fleet growth.
- Asia Pacific will be the largest market for the intermediate twin-aisle fleet grabbing 43% of the world deliveries.
- The world's airlines will be operating 1,262 very large passenger aircraft of which, 62% will be operated by the airlines of the Asia-Pacific region alone.
- 12 of the 20 airports from which 75% of the 1262 aircraft will be operated, are in Asia Pacific.
- Asia Pacific will dominate the other regions with 33% of world's 4.69 million seats while North America and Europe are to operate 26% and 29% respectively. (By the end of 2003, Asia Pacific operated 26% of the world's 1.96 million seats while North America and Europe operated 34% and 27% respectively.)
- North American freighter fleet will still be the largest with 2,250 aircraft in service, but the Asian freighter fleet will have grown to produce an equivalent number of available tonne-kilometres.

**Airlines**

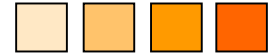
Asia Pacific airlines showed the maximum growth in 2004, which is evident from the chart below comparing various performance indicators of all the regions.



Source: IATA, SkyTECH Analysis

*SLA will be the launch customer for the double-decked A380 with the first commercial flights scheduled for May/June next year. Asia Pacific operators have firm orders for 39 A380s. These are SLA (10), Qantas (12), Malaysian Airlines (6), Korean (5) and Thai (6). Fourteen customers have already ordered 149 A380s. The region's next customers are expected to be in China.*





*Liberalization in the region: Significantly liberalized Bilateral Agreements between Singapore and countries like Australia, Sri Lanka, and UAE; Open Skies Agreement between Thailand and countries of UAE, India and China; Open Capacity Agreements between Malaysia and Hong Kong SAR, etc.*

*A survey of ongoing observations on low cost carriers (LCCs) in Singapore by MarketShare, an independent Asia-Pacific market research firm, revealed that 68% of respondents would travel more often due to the launch of LCCs while 81% would be planning to travel twice or more within a year up from 41% previously.*

For the industry, which had survived the four detrimental factors SARS, conflict in Iraq, terrorism and the economy last year, a fifth one, the price of oil, could add up to the costs and deny profitability. If oil prices remain at about the \$40-a-barrel level, IATA believes that losses will continue in 2005. Also, factors like the weakness of the Japanese economy, the instability of Indonesia, the volatility in the Korean peninsula and the future direction of China will impact on the patterns and commercial strategies of the whole industry. Given this uncertainty, it may be optimistic to expect the recent dynamism in the Asian airline industry to last.

What concerns Asian airlines is that while U.S. carriers have been heavily subsidized by their government to cover much of the cost of security, airlines in the Asia-Pacific are meeting the extra expense from their own budgets. Having already paid for increased security, strengthened cockpit doors and at least part of the cost for air marshals, as well as meeting complex advanced passenger information requirements, the region's carriers fear demands on freight security may go too far and incur further cost. Also, in Asia Pacific, because of the dominance of a single airline in each country, regional traffic has evolved on the pattern of a single national hub rather than a point-to-point model, which is less economic when traffic levels are depressed. In the immediate future, such influences as the advantages of the hub model plus regional economic growth will likely have a strong influence on the levels of profitability of airlines.

However, developments within the airline industry will maintain high growth and pressure on governments to bring forward air service **liberalization**, a key feature of a new phase of development for the region's international air transport. The market here revolves around capital city hubs, bilateral agreements, and the natural protection of government airlines and flag carriers. Even though this protectiveness is not unique to this region, it is different because, most of the highly successful carriers in this region and the hubs they operate from, are still government owned or have privatization aspirations. Governments, however, are responding by expanding bilateral agreements, and entering into talks on multilateral pacts.

There has also been a high level of **privatization** activity in the aviation industry in recent years, in the sector. A wave of major airline privatizations is likely as governments across the region reassess their strategic position on aviation and on airline ownership. As airline entry barriers are lowered, private airline entrepreneurs, including several start-up LCCs, are also looking to quickly realize investment gains during the expected boom conditions over the next 18-24 months. Industry observers believe that Asia offers the right market conditions for budget airlines, having 240 cities with over 500,000 people and 130 with over one million people, many underused regional airports, a rising number of travelers and high Internet usage. As well, 339 airports throughout the region are capable of taking B737NG or A320 equipment, the most popular aircraft type for LCCs.

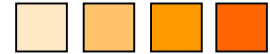
#### **Low-cost wave**

Low-cost carriers and their impact on full-service operators remains one of the hot topics of the Asia-Pacific's aviation scene. Indeed, the budget airline business in Asia is still small but growing fast. Malaysia is an example of a success story of a low cost airline namely Air Asia that has become a role model for the Asian market. Since Air Asia took to the skies in November 2002, half-a-dozen low-cost carriers have opened for business or plan to do so by yearend. In response, big carriers are setting up low-cost subsidiaries. The boom is being driven by the governments of Malaysia, Thailand, Indonesia, and Singapore, which are granting landing rights to the carriers in hopes of boosting tourism and business travel.

*Australia's flag carrier, Qantas, recently launched its second low-cost carrier, Jetstar Asia, less than seven months after its first budget carrier Jetstar, which operates domestic routes. Jetstar Asia has commenced a daily flight from Singapore to Hong Kong, and will shortly begin flying to Taipei in Taiwan, and Pattaya in Thailand. It wants to be the first low-cost carrier to fly to Surabaya in Indonesia, Shanghai in China, and Manila in the Philippines. Qantas has been a little slow to enter the low-cost market in Asia but is working hard to catch up.*

According to Peter Harbison of CAPA, the Asia Pacific market is very different from the **US and European markets**. Here, the LCC growth will mostly be international and so LCC expansion will grow more progressively. The jury is still out on whether the **LCC model** will **succeed** in the region as in Europe and the U.S. and, whether its success will





*Singapore Airlines has hedged about 40% of its fuel requirements at USD 34 a barrel for the 12 months ending March 31, 2005, while Qantas has hedged 70% of its fuel at US\$32 a barrel for the year ending June 30, 2005. The subsidiary LCCs of such Airlines would benefit from their parents' strong bargaining power.*

*From Sep 2003, Air Asia in Malaysia has been offering a short message service (SMS) facility to buy tickets. Users can choose flights, confirm reservations and make payments through text messaging. Such guerilla marketing to offer lower fares could make budget airlines the patron saints of 21st century mass air travel: cut out the snob value and bring flying within reach of more people willing to swap comfort for a lesser bill - at least for short distances.*

be at the **expense of the full-service carriers**, or alongside and incremental to the continued growth and profitability of the latter.

#### Survival

The most logical prediction is that those LCCs which mount a challenge on the major city pairs in Asia face an uncertain and potentially profitless future, subject to intense competition from not only the carriers established in the region, but also the fifth freedom operators, marginally costing their product. But those which focus on domestic markets and leisure-oriented secondary destinations may well not only survive but also prosper. Also, as aviation history shows, the big and more financially stable budget carriers that vigilantly follow the low-cost model have a better chance of succeeding than others. The minnows will either be taken over or eventually crash-land, according to analysts.

The **impact of LCCs on established carriers** may be cushioned by their strength in long haul travel, premium services for business travel, and cargo but it will precipitate broader changes to airline operations overall, leading to a more sustainable service and operating formula. It is not just that low cost airlines use lower costs to offer lower fares than their full service counterparts. They are also proving to be far more efficient in the way they run their business. Their adoption of new technology and innovative management practices is now being imitated by established airlines wanting to reduce their own costs. Also, the increased use of the Internet has lowered Airline distribution costs but created Price transparency and downward pressure on Airfares.

The experience in the US and Europe, is that more start-up operations fail than succeed, often because they were under-capitalized in the first place. But their often-short lives can be damaging for incumbent airlines, which are not ready or able to adapt. However, industry experts say that **established carriers** in Asia **do not suffer** from the structural inefficiencies, which have threatened the very existence of many of their counterparts in America and Europe and that they are better prepared and well positioned to respond to new competition in the region, whilst vigorously reviewing their own cost structures. The network carriers in Asia, not facing the same problems of stagnating traffic, high labor costs and restricted aircraft utilization, are unlikely to be confronted with either long-term competition from carriers with unmatchable fares or a rapid spread of low-fare service by a single operator across the region.

There are a good number of **challenges for LCCs**, however, in this market. Unlike U.S. and European carriers, the Asian network carriers use the same aircraft to operate both short haul and long haul services and are thus already achieving high utilization rates. These aircraft typically have in excess of 300 seats and are less than 10 years old. But it is difficult for start-ups to achieve seat mile costs 30%-40% below the level of existing network carriers to compete with them. There is a lack of secondary airports within commuting distance of Asia's capital cities meaning that low-cost airlines there can't avoid congested and pricey metropolitan airports. That limits their ability to save on landing fees and to get into and out of airports quickly -- the two pillars of the low-cost model. There is also a severe competition for the LCCs to operate between major city pairs.

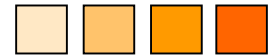
*In flying between Singapore and Bangkok, Valuair and Thai AirAsia compete with a dozen other carriers. On the Hong Kong-Singapore route, Valuair squares off against seven others.*

Asia's traditional airlines are more cost-competitive than their European and American counterparts, too. They enjoy lower average costs per kilometer than other global carriers. They're often even as low as no-frills airlines, which typically keep a lid on costs by flying only short-range, narrow-body planes. And because full-service carriers have first and business classes plus cargo, they can sell economy seats at a discount.

*Cathay Pacific Airways Ltd., for instance, keeps its wide-body Airbus A330s busy by making several daily flights between Hong Kong and Taipei and then using the same plane for a 13-hour overnight trek to London.*

The **barriers** for the LCCs in the region will, primarily, be lack of adequate infrastructure, regulatory system, legal framework and route network. LCCs also need special low cost terminals to ensure low cost operations. The requirements are so different from a conventional airline, especially the ground services that play a critical role in terms of the turnaround period, which needs to be minimum. Utilization of the

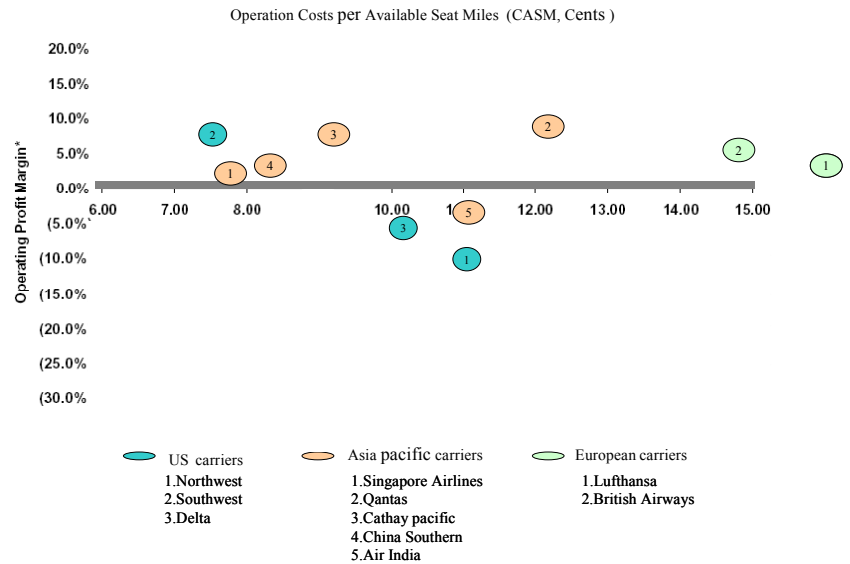




aircraft also is a key as far as low cost carriers are concerned and overall operating costs have to be low.

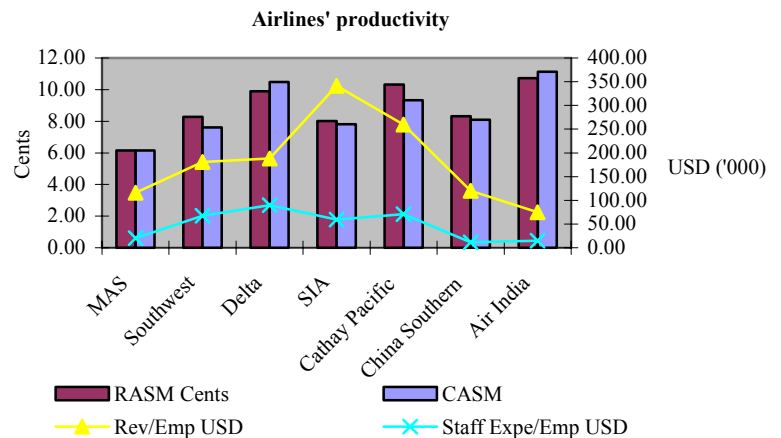
**Condition of Airlines**

The chart below shows the airlines' Costs per Available Seat Miles (CASM) against their Operating Profit Margins ('02-'03). This indicator works well in case of the American carriers, showing that the operating profit margin decreases with an increase in the CASM of the carrier. However, this indicator does not fail to clearly depict the performance of each carrier.



Source: Annual reports of Airlines, SkyTECH Analysis

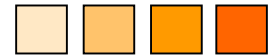
The chart below compares the employee productivity, RASM and CASM of some Asia Pacific airlines with that of the American majors.



Source: DGCA, Company Annual Reports and Websites, SkyTECH Analysis

Singapore Airlines looks to be the most productive one with the highest revenue per employee of around 341,000 USD and a low cost per employee of about 60,000 USD. Cathay Pacific also made decent revenue per employee and also had a very good operating margin. Air India operated in negative margin with very high RASM and





*Bisignani, the CEO of IATA says, "If one of the partners in a partnership is losing his shirt while the other is counting his money, it is no longer a partnership!" Citing the disparity between the returns of airlines and airports, Bisignani called for a new partnership based on transparency and value for money. IATA is benchmarking airports to highlight disparities between charges, the costs of providing facilities and services and airport profit targets.*

*More than 60% of Singapore Changi Airport's revenue comes from commercial activities, which helped it to lower the aeronautical airline charges, which are now the second lowest in the region.*

CASM (more than even Delta's). It spent less on employees and still its productivity was very low. It should be noted that some airlines, even though are not LCCs, have their CASM and unit staff costs almost equal to those of Southwest. China Southern's unit staff expenditure was less than one-fourth of Southwest's unit cost on staff.

**Airports**

In Asia Pacific, there exist remarkable growth possibilities for regional centers as well as existing hubs. But, this resulted in a need for the airports to decide between short-term need to accommodate price demands of Airlines and long-term need to provide for expansion. The key issues for airports are the new Airline structures, their infrastructure and operational demands, pricing for the new environment, and the competition for hub-hub and hub-secondary traffic in the region.

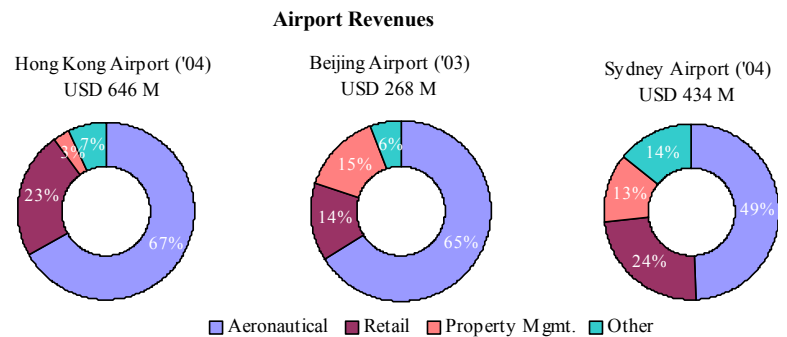
Airport congestion is turning to be the major problem at many airports. They are operating at their maximum throughput for longer and longer periods of the day, and some have already reached their operating limits as prescribed by physical as well political and environmental constraints. This situation is expected to become more widespread as traffic continues to increase. On the other side, airlines are suffering because of the high airport charges. They believe that airports are making profits out of airlines' losses. They are in search of alternatives to get their costs down.

Here comes the advantage of secondary airports, which have become an integral part of the strategy of the low-cost airlines. (e.g. Ryanair serves Hahn for Frankfurt, Beauvais for Paris and Stansted for London). Secondary airports not only avoid congestion but also help the airlines cut their costs considerably.

**Condition of the Airports**

Many airports in Asia Pacific are consistently profitable because of the high charges they impose on airlines. This is evident from their high aeronautical revenues. Only a few airports are efficient, keeping their costs low, thus having good profit margins even after charging less on airlines.

The chart below shows the sources of revenue for Hong Kong, Beijing and Sydney airports.

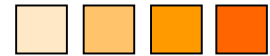


Source: Company Annual Reports and Websites, SkyTECH Analysis

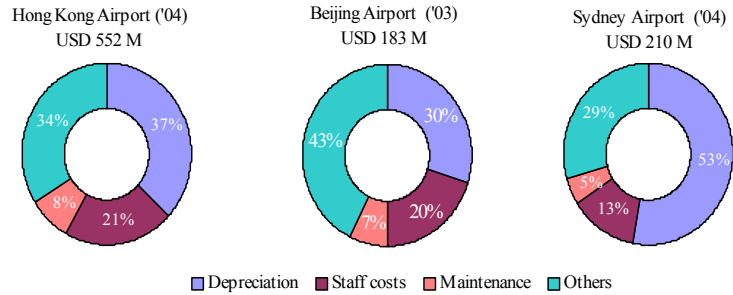
It can be seen that the aeronautical revenues for Hong Kong and Beijing airports were above 65%. This does not sound good with some airports making about 60% of their revenues from non-aeronautical activities. The airports have to maximize the non-aeronautical revenue so as to enable lowering of charges on the airlines without having to compromise on profitability and funds for investment.

The operating costs of the airports are shown below. Depreciation costs form the biggest part of the airport expenditure, followed by the staff costs. Together they account for about 60% of the total expenditure. 53% of the Sydney's airport costs accounted for depreciation, which indicates that there have been recent investments on the airport. Capital expenditure for 2004 was about 72 million USD and for 2003, it was about \$187.5 million USD. Since 1999, their capital expenditure has been over 935 Million USD.





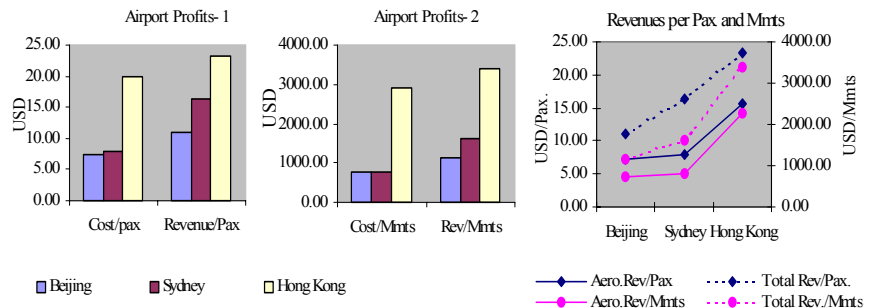
**Airport Costs**



Source: Company Annual Reports and Websites, SkyTECH Analysis

The charts below compare the costs and revenues per passenger and per aircraft movements of the three airports.

**Airport Profits**



|                          |      |      |      |
|--------------------------|------|------|------|
| Passengers (Mill)        | 24.3 | 26.4 | 27.7 |
| Aircraft Movements (Lac) | 2.35 | 2.66 | 1.93 |

Source: Company Annual Reports and Websites, SkyTECH Analysis

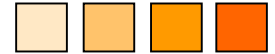
*Guangzhou Baiyun has overhauled itself to compete with Hong Kong as the main cargo gateway for the abundance of factories in South China. Both Baiyun and Shenzhen have their eye on South China's passenger market (the latter in potential partnership with Hong Kong).*

Hong Kong airport's costs ('04) were very high compared to the other two airports. They spent over 20 USD/passenger while the others spent around 8 USD. And, per aircraft movement it spent over 2900 USD while the others spent about 800 USD. There is clearly, a need to bring its costs down. The Aeronautical revenue/passenger for Hong Kong airport was about 16 USD, while it was just over 7 USD for Beijing and 8 USD for Sydney. A better indicator of the charges that the airports impose on airlines, the aeronautical revenue per aircraft movement, was also very high for Hong Kong airport, which is almost thrice that of the other two airports. Keeping in mind, the growing neighboring airports like the one in Guangzhou; the Hong Kong airport should find ways to cut their unit costs and decrease their charges on airlines.

The airports should take measures to cut their absolute and unit costs and increase their operational efficiency. Advanced IT systems, which include, systems for Manpower handling, Gate Assignment, etc. need to be deployed in the airports. This would bring their unit costs down to a considerable extent. Also, other means of cutting the unit costs down, like decreasing the connecting times should be thought of.

Minimal connecting times increase the frequency and decrease the unit costs. Normally, around 70% of the aircraft movements at hubs have connections. But, not all of them benefit from the reduction of connecting times. Consider an airport that handles 1000 aircraft movements per day and that just 30% of the movements benefit from reduction in connecting times, then a ten-minute saving (from a connecting time of 1 hour) will mean an increase of over 50 movements per day. If the Aeronautical revenue/movement is





*Kansai International Airport is planning to considerably shorten its mandated minimum connecting time between arrivals and departures for transit passengers. The plan, including a cut in its minimum connecting time for international flights to one hour from the current 1.5 hours, is designed to help the company survive competition with newly opened Chubu Centrair International Airport near Nagoya and airports overseas.*

around 750 USD, there will be additional revenue of around 35,500 USD per day, which is around 12 M USD/year. This is a clear indication of increased efficiency. The airports can, thus, decrease their charges on airlines without a sting on their own profits.

On the other hand, this saved time means a lot also to the airlines. On an average, the delay costs for an airline is about 1550 \$/hr. Consider an airport that accommodates 500 take-offs per day. The same 30% connecting flights mean 150 take-offs. A ten-minute saving in connecting time saves around 3750\$/day from their delay costs.

The Aviation industry in Asia Pacific, even though is not as old and advanced as that of Europe and America, has been profiting while the others are losing out. Most of its airlines are operating consistently at unit low costs despite their big operational base and providing themselves a cushion to reduce prices to fare well in the price wars that are expected to come up with the LCC startups. The success of AirAsia has given a push to the low cost wave, which is evident from the numerous startup plans announced in many countries including India. What matters for an airline in the region is its operational structure but not the model, which is proven by the success of either models. Airlines like SIA, MAS and Thai are among the best airlines in the world. The airports are highly profitable but should take steps to reduce charges on the airlines, which not only helps them in the competition with the growing neighboring airports but also helps the airlines do better.

#### About SkyTECH Solutions

SkyTECH provides IT consultancy and develops niche software solutions and products for the global travel, transport, retail and logistics industry. Backed by strong domain / business process experts, SkyTECH offers tested proven solutions across different functional areas and technology platforms in the transport sphere that directly impact the bottomline of clients.

SkyTECH's global presence is spread across Chicago & New Jersey (USA), London & Amsterdam (Europe), and Kolkata, Mumbai & Bangalore (India). SkyTECH's Global IT Delivery Model combines on-site and offshore project execution to deliver IT services at the lowest possible cost. SkyTECH's offshore development infrastructure, located in India, is certified to ISO 9001:2000 and SEI CMM Level 5.

SkyTECH is developing global technology standards spearheading technical consultancy through industry associations like the OpenTravel Alliance (OTA) and IATA. SkyTECH's Operations Research group adds significant value to airlines by working on core airline functions including scheduling, reservations, revenue management, and supply chain management.

SkyTECH's rapidly increasing client base is spread across different geographies (USA, Europe, China) and diverse travel & transport segments (airline, airports, logistics, product companies, consulting firms, networking firms), and includes one of the world's largest airlines as well as one of the world's largest IT consulting firms.

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