The Impact on Airports in Southeast Asia: What Deregulation means.
1. Introduction

In November 2009, the Association of South East Asian Nations Senior Transport Officials Meeting (ASEAN-STOM) signed a memorandum of understanding with the intent of endorsing a multilateral agreement on full liberalization of air freight services. The agreement signed in Manila, the Philippines, marks the conclusion of more than a year’s worth of discussion that aims to create a unified transport network linking the ten member states, as well as to ensure efficient and competitive international air freight services in a move to promote economic growth (Philippine Information Agency, 2008).

One year into the implementation of this agreement, changes have already begun to take place in the various member countries. The effects of service frequencies, airline ticket prices have changed the dynamics of once closely regulated and very profitable routes for preferred national carriers. With the plethora of cheaper options now available to the travelling public, passenger numbers have surged as carriers have tried to add capacity to satiate demand.

Airports are like the middlemen in this exchange of services. While the airlines are clamoring for more capacity to meet the increasing demand of travel arrangements from passengers, the airports have to contend with both airside and landside capacity as the effects of deregulation starts a reinforcing loop for more air transportation services. What does the future hold for airports in the ASEAN region? In particular, as the 2015 implementation date for a common aviation corridor, how would traffic patterns change?

LCCs have grown and expanded much quicker than legacy carriers following deregulation in other parts of the world. The paper will focus on the case study of Singapore and Malaysia, two of the most mature commercial aviation markets in the Southeast Asian region. The reasons for choosing these two countries is due to the a recently signed agreement to deregulate the commercial aviation market, the degree of penetration of LCCs services in both countries, and the special arrangements the governments have towards accommodating the LCC surge in traffic. This paper will argue that the low cost carriers (or budget carriers as they are more commonly known in Asia) will play an important role in shaping the dynamics of travel and airport usage in Southeast Asia (SEA). Specifically, the paper will look at the aviation infrastructure supporting the Singapore-Kuala Lumpur route, paying particular attention to the developments of accommodating low cost airlines at the airports.

1.1 How this paper is laid out

This paper primarily uses case studies to analyze the effects on deregulation in the Southeast Asian region. Section 1 provides an introduction to this paper, while section 2 will provide a brief context of the region, and describes the evolution of air transportation up to its present day.

Section 3 will then provide a background of regulation and deregulation of air services around the world, and specifically the conventions that have been adopted to ease negotiations between countries. Section 3 will then focus on two areas of regulation – the regulation of competition by
restricting airline competition (Section 3.1), as well as air services regulation that restricts access to routes (Section 3.2). Lastly, Section 3.3 will provide an overview of the prior two subsections specifically to the Singapore and Malaysia context.

Section 4 provides an overview of airline competition in Southeast Asia. While not going in depth about the competitive dynamics of national carriers, it provides a broader overview of how Low Cost Carriers (LCCs) have managed to enter specific markets and grow their business. Section 4.1 continues with the modeling of traffic growth on Singapore and Malaysia routes, with Section 4.4 concluding that LCCs drive traffic growth post deregulation, and their presence in markets have profound effects in terms of market dynamics.

Section 5 continues with a discussion on how LCCs select airports (Section 5.1) airports and how governments, airport authorities and airlines help shape the decisions to locate at their ground facilities at certain airports. We look at the case of Singapore Changi Airport (Section 5.2), the multi airport system at Kuala Lumpur (Section 5.3), the airports of Bangkok for a broader context of multi airport systems within countries (Section 5.3) and the multi airport system across countries (Section 5.5).

Section 6 will summarize the case studies, and provide a series of recommendations for Southeast Asian airports as the multilateral air services agreement begins to take effect in the ASEAN member countries.

2. Southeast Asia Context

South East Asia sits close to the equator, just south of China and east of India. The total landed area of the region is slightly under 4.4million km$^2$, but this figure does not do justice to the extent of its

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geographical locale. The sprawling archipelagos of Indonesia and Philippines, while vast in extend, is small in terms of landed area (see Figure 1). The region is also very populous with slightly less than 600 million inhabitants (2x US population), and has been heavily involved in the global manufacturing sector for a long time with slightly under USD 900 billion of exports a year (see Figure 2 for more comprehensive statistics) (ASEAN, 2009).

South East Asia is made up of ten countries – Burma (Myanmar), Cambodia, Laos, Thailand, Vietnam, Malaysia, Brunei, Philippines, Indonesia and Singapore. With the exception of Thailand who was already an independent nation, Vietnam (1945), Philippines (1946), Myanmar (1948), Indonesia (1949), Malaysia (1957), Singapore (1965), Brunei (1984) declared independence from their colonial masters after World War II.

These ten nations also form the Association of South East Asian Nations (ASEAN), an organization to accelerate economic growth, promote peace and stability through active collaboration in matters of common interests (ASEAN, About ASEAN). It is under this umbrella organization that the multilateral air services agreement was formulated and signed into law.

2.1 Air transport beginnings in SEA

Following the declaration of independence post World War II, Southeast Asian had to regain their footing following the catastrophic decline in economic activity during the Japanese occupation. As developing nations, these countries focused on agricultural and manufacturing as key pillars of the economy to drive exports and revenue generation. Air transportation played an important role in getting these products to customers in a timely fashion.

Air services also helped in nation building. As the nations began to develop their own sense of identity, air transportation helped bring the remote corners of the sprawling archipelago of Indonesia and the Philippines together, and foster cooperation between outlying islands and the capital city where the legislative branches of the governments reside.
As the countries grew from strength to strength, the push into the services sector also led to some multinational companies to base their Asia headquarters in the region. Air transportation allowed for the movement of senior staff of corporations to travel where they wanted to whenever they wanted to.

The aviation industry as a whole helped create high paying jobs, deepened technological sophistication, promoted tourism, facilitated international trade through the export and import of manufactured goods, as well as contributed to national defense and nationalistic pride (Bowen, 2000).

3. Regulation and Deregulation

In any new industry, governments usually have vested interests in protecting the interests of these new industries from much more mature competition elsewhere. The aviation industry is no different. In the early years of aviation in the United States, the Civil Aeronautics Board (CAB), the precursor to the Federal Aviation Agency (FAA), was responsible for not only the safety, accident investigation, airspace management, air traffic control and aviation infrastructure but the economic regulation of the airlines. The CAB had the ultimate authority in deciding which carriers can fly on which routes at what price. Deregulation in the United States occurred in 1978, when then FAA administrator Alfred Kahn gave airlines the free reign to enter and exit markets (domestically), and set ticket prices and capacity as they chose.

Economic deregulation across nations was much trickier because it required the consent of both governments to work. It took almost 30 years after US deregulation for the European Union and the United States to sign off on a preliminary Open Skies agreement that grants carriers from these countries unlimited access to each other’s airports.

What the multilateral air services agreement seeks to do in SEA is to replace the hodgepodge of loosely-related bilateral agreements with a unified agreement that was binding for all member nations of ASEAN. While the goal is to promote economic activity and travel within the region, there framework will be the foundation for how the collective body of ASEAN countries negotiate future air services agreements with non ASEAN countries rather as individual countries.

3.1 Airline Competition

Due to the high startup costs of launching a new airline, many Southeast Asian carriers had humble beginnings as a state owned carrier. Governments also played an influential role in shaping airline networks, by enacting regulation that can hinder or promote airline competition within the country. In addition, they usually also hold regulatory authority, and can determine the size and quality of airport infrastructure provided at a hub (Bowen, 2000).

The late 1980s saw the first wave of deregulation and liberalization of the aviation industry. Realizing that increased air transportation services would provide more economic benefits—such as tourism, employment and mobility, governments relaxed airline competition rules, making it easier for new
entrants to enter the market. State-owned carriers were also in varying stages of being privatized, and were now forced to compete on price in a free market system.

### 3.2 Air rights

The convention of International Civil Aviation of 1944, also known as the Chicago Convention, standardized the air rights that would be negotiated between states. Figure 3 below indicates the 8 freedom of the air rights that are commonly referred to.

<table>
<thead>
<tr>
<th>Freedom Right</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Freedom</td>
<td>Right to fly over a foreign country without landing</td>
</tr>
<tr>
<td>Second Freedom</td>
<td>Right to allow technical stops without the enplaning or deplaning of passengers or cargo</td>
</tr>
<tr>
<td>Third Freedom</td>
<td>Right to carry passengers or cargo from one’s own country to another</td>
</tr>
<tr>
<td>Forth Freedom</td>
<td>Right to carry passengers or cargo from another country to one’s own</td>
</tr>
<tr>
<td>Fifth Freedom</td>
<td>Right to carry passengers or cargo between foreign countries as part of services connecting the airline’s own country</td>
</tr>
<tr>
<td>Sixth Freedom</td>
<td>Right to carry passengers or cargo between a second and third country by stopping in one’s own country</td>
</tr>
<tr>
<td>Seventh Freedom</td>
<td>Right to carry passengers or cargo between two foreign countries without continuing service to one’s own country</td>
</tr>
<tr>
<td>Eighth Freedom</td>
<td>Right to carry passengers or cargo between two or more points in one foreign country</td>
</tr>
</tbody>
</table>

Figure 3: List of Freedom Rights and Their Explanations

Some countries went as far as the liberalization of air services rights as well. Commonly known as an open skies policy, such an agreement granted foreign airlines freely access to, from and beyond a nation’s airspace in exchange for reciprocal traffic rights in their home markets (Bowen, 2000). Singapore was perhaps the first Southeast Asian country to adopt such a policy in the 1960s. This policy has helped the national carrier, Singapore Airlines, become one of the world’s largest airlines in terms of international capacity flown, and promote Singapore as a hub for transfer traffic for the SEA region.

With the signing of the Multilateral Agreement on Air Services, this essentially lifts the restrictions of flights to and from member nations. In its distilled form, the agreement calls for unlimited third and forth freedom rights between ASEAN capital cities for implementation by 2008, and unlimited fifth freedom rights between ASEAN capital cities for implementation by 2010. This is in line with the goal of building a single unified aviation market by 2015 through gradual removal of restrictions to achieve flexibility as member nations adapt to the easing of regulations (Centre for Asia Pacific Aviation, 2008).
3.3 Singapore and Malaysia air transportation bilateral agreements

Singapore and Malaysia provide a good case study for the deregulation of air transportation services within the region. Prior to the arrangements made at the ASEAN-STOM summit in late 2008, flights between the two countries were heavily regulated, with agreements limiting the number of flights between destinations between Singapore and Malaysia. The Singapore government had to go so far as to issue an exclusion order for the air shuttle agreement between Malaysian Airline System (MAS) and Singapore Airlines (SIA) on the Singapore-Kuala Lumpur route from Section 34 of the Competition Act which prohibits business agreements that prevent, restrict or distort competition (Ministry of Transport (Singapore), 2007).

Following much debate about the necessity to protect this route from competition, the growing wave of consumer outrage at $400 average fares, and low cost carriers such as AirAsia clamoring for fair competition on the route (Ng, 2008), the Transportation Ministries of both countries sat down and gradually expanded the scope of passenger flights by adding frequencies to existing destinations, and opening up new origin-destination pairs.

Figure 4 below lists the existing and new destination pairs, with the number of frequencies stated to the left of the allowed capacity at the respective time periods. While frequencies are available for subscription by airlines, not all frequencies are being used at the present moment. This essentially implies that the Singapore and Malaysia air transportation market is indeed virtually deregulated, much earlier than the agreed upon timeframe at the May 2008 ASEAN STOM meeting.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore- Kuala Lumpur</td>
<td>42/42</td>
<td>107/∞</td>
<td>106/∞</td>
<td>107/∞</td>
<td>99/∞</td>
</tr>
<tr>
<td>Singapore- Penang</td>
<td>21/21</td>
<td>21/21</td>
<td>18/18</td>
<td>28/70</td>
<td>49/70</td>
</tr>
<tr>
<td>Singapore- Langkawi</td>
<td>5/5</td>
<td>6/6</td>
<td>6/6</td>
<td>6/27</td>
<td>5/27</td>
</tr>
<tr>
<td>Singapore- Kota Kinabalu</td>
<td>5/5</td>
<td>6+0/6+7LCC</td>
<td>17</td>
<td>13/38</td>
<td>10/42</td>
</tr>
<tr>
<td>Singapore- Kuching</td>
<td>7/7</td>
<td>7+7/7+7LCC</td>
<td>16</td>
<td>19/35</td>
<td>14/42</td>
</tr>
<tr>
<td>Singapore- Miri</td>
<td>0/0</td>
<td>0/0</td>
<td>14</td>
<td>0/14</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Ipoh</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/21</td>
<td>0/42</td>
</tr>
<tr>
<td>Singapore- Kuala Terengganu</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/14</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Kuantan</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/14</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Tawau</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/14</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Malacca</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/14</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Sandakan</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/14</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Alor Setar</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Bintulu</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Labuan</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Kerteh</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Kota Bahru</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/28</td>
</tr>
<tr>
<td>Singapore- Sibu</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0</td>
<td>0/28</td>
</tr>
</tbody>
</table>

Figure 4: Table of Actual Frequencies and Allowable Frequencies\(^2\) for Singapore Carriers

\(^2\) Source: Ministry Of Transport( Singapore), OAG Flight Planner
4. Airlines

As mentioned before, many Southeast Asian carriers started off as national carriers. Singapore Airlines was perhaps the first airline in Southeast Asia that competed based on the quality of the product. Most other legacy carriers also tried to adopt similar models in order to compete based on quality and service in order to drive transfer traffic through its hubs. Figure 5 below indicates the Skytrax rankings for SEA flag carriers, with five stars being the ‘ultimate’ ranking awarded to airlines with the highest quality performance, and one star rankings representing very poor quality performance (Skytrax, 2009).

<table>
<thead>
<tr>
<th>Country</th>
<th>Flag Carrier</th>
<th>Skytrax Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei</td>
<td>Royal Brunei Airlines</td>
<td>3 star</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Cambodia Angkor Air</td>
<td>unclassified</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Garuda Indonesia</td>
<td>3 star</td>
</tr>
<tr>
<td>Laos</td>
<td>Lao Airlines</td>
<td>unclassified</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Malaysia Airlines</td>
<td>5 star</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Myanmar Airways International</td>
<td>3 star</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Airlines</td>
<td>3 star</td>
</tr>
<tr>
<td>Singapore</td>
<td>Singapore Airlines</td>
<td>5 star</td>
</tr>
<tr>
<td></td>
<td>Silk Air</td>
<td>4 star</td>
</tr>
<tr>
<td>Thailand</td>
<td>Thai Airways</td>
<td>4 star</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Vietnam Airlines</td>
<td>3 star</td>
</tr>
</tbody>
</table>

Figure 5: Skytrax Rankings for Various Southeast Asian Carriers

As former state owned carriers were forced to adapt new regulation removing barriers to entry into the aviation market, many new entrant airlines began serving intra-Southeast Asian routes in search of passengers and revenues to satisfy the burgeoning demand for air services both within and outside the region. Many of these airlines like Air Asia, Cebu Pacific, Merpati Air were not able to capture a significant share of the market, until Air Asia reinvented itself as a low cost carrier in 2002 and managed to capture a significant share of the Malaysia domestic travel market.

In order to circumvent the many rule restricting carriers setting up hubs or bases in a foreign country, AirAsia pioneered the model of setting up subsidiaries in those countries in order to circumvent air regulations. These subsidiaries were indistinguishable from the original product offered in Malaysia, sharing the same livery, in-flight product as well as booking system to ensure passengers enjoyed a seamless operation. What started out as an intra-Malaysian carrier grew to become a pan-Southeast Asian carrier with subsidiaries in Thailand, Indonesia, and now a long haul low cost service based in Kuala Lumpur and Abu Dhabi (Air Asia) (Popatla, 2009). This concept has now been adopted by other low cost carriers in the region.

Figure 6 indicates the major LCCs that have helped transform the aviation market in recent years.

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3 Source: Skytrax.
<table>
<thead>
<tr>
<th>Carrier</th>
<th>Country</th>
<th>Fleet Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Asia</td>
<td>Indonesia, Thailand, Malaysia</td>
<td>A320, retiring B737</td>
</tr>
<tr>
<td>Tiger Airways (partly owned by SIA)</td>
<td>Singapore, Australia</td>
<td>A320</td>
</tr>
<tr>
<td>Jetstar (affiliate of Jetstar, a subsidiary of Qantas)</td>
<td>Australia, Singapore, Vietnam</td>
<td>A320</td>
</tr>
<tr>
<td>Cebu Pacific</td>
<td>Manila</td>
<td>A320, ATR72</td>
</tr>
<tr>
<td>Lion Air</td>
<td>Indonesia</td>
<td>B737</td>
</tr>
<tr>
<td>Firefly (subsidiary of MAS)</td>
<td>Malaysia</td>
<td>ATR72</td>
</tr>
<tr>
<td>PAL Express (regional affiliate of Philippine Airlines)</td>
<td>Philippines</td>
<td></td>
</tr>
<tr>
<td>Thai AirAsia</td>
<td>Thailand</td>
<td>A320</td>
</tr>
<tr>
<td>One-Two-GO</td>
<td>Thailand</td>
<td>MD-80</td>
</tr>
<tr>
<td>Nok Air</td>
<td>Thailand</td>
<td>B737</td>
</tr>
<tr>
<td>Bangkok Airways (somewhat)</td>
<td>Thailand</td>
<td>A320</td>
</tr>
</tbody>
</table>

Figure 6: Low Cost Carriers, Their Bases, and the Aircraft They Operate

4.1 Modeling Traffic Growth

With the recent deregulation of the Singapore and Malaysia air markets, we can attempt to model the demand for air services prior to and after the phased deregulation. Using the data from the Singapore and Malaysia case study, we can then predict the effects of deregulation on other city pairs within Southeast Asia. Furthermore, we can use that forecasts to determine the dynamics that airports will play when the regulation takes effect.

4.1.1 Modeling Methodology

Using OAG’s Flight Planner’s Guide, we attempt to quantify the capacity on a particular route by extracting the flight data on all non-stop flights between Singapore and the Malaysian destination. Using the data in the Guide, we can then obtain the number of weekly flights between city pairs, as well as the aircraft used to service the routes. The quotient of the number of weekly flights and the available seats on the aircraft used will yield the available capacity on the route. Using data available prior to deregulation as well as post deregulation (when old copies of the OAG flight guide were available), we would then be able to track the changes in the capacity on that route.

4.1.2 Modeling Assumptions

While it would be much more instructive to model the routes perfectly and take into account every single variable, there are some assumptions that have to be made to simply the analysis.
Firstly, this modeling approach assumes that the markets are efficient. In other words, carriers would add enough capacity into a particular route to serve the route profitably. While profitability in this sense is vague owing to the inability even on the carrier’s part to quantify the income made from each passenger on each flight, we simply assume that the carrier knows what it is doing, and doing it in a way that is not anti-competitive, predatory and beneficial to the corporation.

Secondly, we would have to assume that new destination pairs had very little traffic prior to deregulation. This would eliminate the need to analyze transfer traffic through other hubs in the region. For example, the Singapore to Kuala Terengganu route was served by a one stop connection through Kuala Lumpur. The model assumes that the initial number of passengers making one stop connections was low (due to the prohibitive ticket price) with respect to the current availability of seats offered on that route.

Thirdly, we would have to make the assumption that the available capacity is a good indication of the demand for travel along a particular route. This implicitly assumes that the load factors on each flight across all airlines are the same. Yet, it should be noted that low cost carriers require significant lower load factors to break even, and may operate emptier flights than a legacy carrier would. Carriers almost never disclose the load factors for individual routes, and it would be very difficult to find the data to remove this assumption. However, quarterly reports have consistently shown that LCCs are operating with load factors similar to the legacy carriers. We can safely conclude that the load factors would not cause significant changes to the results.

4.2 Growth in passenger numbers on SIN-KUL route

![Weekly Seats on SIN-KUL Route](image)

Figure 7: Weekly Seats on Singapore to Kuala Lumpur Route

Figure 7 shows the number of weekly seats on the Singapore to Kuala Lumpur route. What is significant is the growth in the number of LCC seat capacity on the route. As the deregulation
started to take effect, LCCs have steadily increased the number of seats on the route up till almost 50% of all capacity on the route. The number of seats offered by legacy carriers has not matched the number of seats offered prior to deregulation. This increase in seat capacity has propelled the route to being the 18th most trafficked route in the world (Centre for Asia Pacific Aviation, 2009).

4.3 Growth in passenger numbers on secondary routes

**Figure 8: Weekly Seats on Singapore to Penang Route**

**Figure 9: Weekly Seats on Singapore to Langkawi Route**
In the other four secondary routes between Singapore to Malaysia (Figure 8-11), there has been a considerable increase in the number of seats offered by LCCs. In all four cases, the number of seats offered is usually more than 50% of the total capacity on the route. In all routes to East Malaysia (Kuching and Kota Kinabalu), deregulation started half a year earlier than the West Malaysia destinations, and the effect on seats offered by legacy carriers has been more profound—their share of capacity has always been declining, and never peaked above the June 2007 benchmark figure. In the Penang and Langkawi routes, there was some sign of uptick in legacy traffic in November 2009, but this was dwarfed by the even greater increase in traffic by LCCs.
On routes that had no service between Singapore and Malaysia, describing the data in tables would not be very enlightening. Figure 12 indicates the current available seat capacity on the routes.

<table>
<thead>
<tr>
<th>Route</th>
<th>Carrier</th>
<th>Weekly Available Seat Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore - Alor Setar</td>
<td>Firefly</td>
<td>216</td>
</tr>
<tr>
<td>Singapore – Miri</td>
<td>AirAsia</td>
<td>720</td>
</tr>
<tr>
<td>Singapore- Kota Bahru</td>
<td>Firefly</td>
<td>288</td>
</tr>
<tr>
<td>Singapore- Kuala Terengganu</td>
<td>Firefly</td>
<td>216</td>
</tr>
<tr>
<td>Singapore- Kuantan</td>
<td>Firefly</td>
<td>288</td>
</tr>
<tr>
<td>Singapore- Ipoh</td>
<td>Firefly</td>
<td>288</td>
</tr>
<tr>
<td>Singapore- Tawau</td>
<td>AirAsia</td>
<td>540</td>
</tr>
</tbody>
</table>

Figure 12: Weekly Available Seat Capacity on Newly Introduced Routes.

4.4 The LCC advantage

In deregulated markets, low cost carriers have the advantage over legacy carriers in many ways. The main reason is the fact that these carriers are ‘low cost’. This has profound implications on the way travel will be made with low cost carriers in the market.

Firstly, low cost carriers have a cost advantage over higher cost premium carriers. This makes LCCs flexible and adaptable to any swing in consumer sentiment. For example, LCCs do not have to rely on business travelers who are willing to pay premium fares to make profits. In the recent economic downturn, this has had a huge impact on the bottom lines of major carriers. Singapore Airlines has reported a SGD428 million loss for the first half of 2009 due to the inability to attract enough business class or first class passengers to fill the front of the cabin. LCCs make a profit even without them.

Secondly, LCCs are able to stimulate demand in segments of the population that have never been able to afford travel before. With fares that are routinely 20-30% cheaper than existing fares and sometimes even pennies if bought early enough during a promotion, the consumer is empowered to travel with this new found wealth, albeit in a relative sense. These customers would still not be able to afford the higher fares of legacy carriers in spite of the overall reduction in ticket prices on routes.

5. Airports

The first airstrips in SEA were built by the colonial masters to serve the traffic heading between Europe and their colonies. These air strips were sometimes also dual use and served as a landing strip for military aircraft squadrons based in Asia. Following the end of the war and the declaration of independence, the airstrips were converted into commercial airports as temporary measures.

As the amount of traffic grew and eventually outstripped the capacity at the airports, new airports were constructed. A desire to match the quality of service of flag carriers led to a succession of airports infrastructure projects that were to be iconic representations of the future of air transportation in the respective countries. Figure 13 below indicates the capital city airports and some facts and figures about the airport.
<table>
<thead>
<tr>
<th>Country</th>
<th>Airport</th>
<th>Runways</th>
<th>Capacity (Passengers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei</td>
<td>Brunei International (BWN)</td>
<td>03/21-3658m</td>
<td>2m passengers</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Phnom Penh International (PNH)</td>
<td>02/23-3000m</td>
<td>2.4m passengers</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Soekarno-Hatta International (CGK)</td>
<td>07R/25L-3660m, 07L/25R-3600m</td>
<td>22m passengers, 5th main terminal planned</td>
</tr>
<tr>
<td>Laos</td>
<td>Wattay International (VTE)</td>
<td>13/31-3000m</td>
<td>Not reported</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Kuala Lumpur International (KUL)</td>
<td>14R/32L-4056m, 14L/32R-4124m</td>
<td>40m passengers, 130m passengers (ultimate)</td>
</tr>
<tr>
<td></td>
<td>Subang Airport (SZB)</td>
<td>15/33-3780m</td>
<td>0.3m passengers (currently)</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Yangon International</td>
<td>03/21-3414m</td>
<td>2.7m passengers</td>
</tr>
<tr>
<td>Philippines</td>
<td>Ninoy Aquino (MNL)</td>
<td>6/24-3737m, 13/31-2258m</td>
<td>26m passengers</td>
</tr>
<tr>
<td></td>
<td>Clark (CRK)</td>
<td>02L/20R-3200m, 02R/20L-3200m</td>
<td>2m passengers, 100m passengers(ultimate)</td>
</tr>
<tr>
<td>Singapore</td>
<td>Changi (SIN)</td>
<td>02L/20R-4000m, 02C/20C-4000m, 02R/20L-2750m</td>
<td>70m passengers, 4th main terminal planned</td>
</tr>
<tr>
<td>Thailand</td>
<td>Don Mueang (DMK)</td>
<td>03L/21R-3700m, 03R/21L-3500m</td>
<td>38m passengers</td>
</tr>
<tr>
<td></td>
<td>Suvarnabhumi (BKK)</td>
<td>01R/19L-4000m, 01L/19R-3700m</td>
<td>45m passengers, 80m passengers (phase 2)</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Noi Bai (HAN)</td>
<td>11R/29L-3800m, 11L/2R-3200m</td>
<td>10m passengers</td>
</tr>
</tbody>
</table>

Figure 13: List of Southeast Asian Airports, Number of Runways and Capacities

5.1 LCCs and the Implications for Airport Use

LCCs are driving the future of air transportation in Southeast Asia, just like elsewhere in the globe. Airports in Southeast Asia have to recognize the fact that low-cost carriers may one day account for over 45% of regional traffic (de Neufville, 2006).

De Neufville (de Neufville, 2006) argues that LCCs choose certain airports to avoid:

a) High ground times.
b) Expensive capital charges.

In order to seek higher utilization of their aircrafts, LCCs demand that airports are able to provide them with services that reduce time on the ground. One way to mitigate this is by selecting uncongested airports. Uncongested airports required less waiting time for air traffic control clearance, for gate clearance, and for taxiing distances. In addition, airports that have the capabilities of reducing waiting time at the gate through efficient ground operations crew are in high demand. As airlines make money when in the air, quicker turns on the ground help increase the utilization of the aircraft, allowing for more flights a day than at congested airports. Depending on how contracts between airlines and airports are structured, reducing time at the gate provides for increased gate
utilization that would drive operating costs at the airport down. To that extent, AirAsia reports that it has one of the region’s fastest turnaround times of 25 minutes (AirAsia, 2009). Drawing a parallel with US airlines, this could mean that low cost carriers are carrying over three times as many passengers through a gate as legacy carriers (de Neufville, 2006).

Airlines are also demanding the use of inexpensive ground facilities to lower the passenger airport taxes associated with flying out of an airport. An argument by de Neufville sums it up: A $20 airport tax on a $100 LCC ticket is more significant than on a $500 fare. By virtue of its low costs, LCCs want to reduce any external overhead costs that could put a dent in ticket sales. LCCs achieve this by renting older facilities and eliminating comfort services like aerobridges.

Combining these two factors, LCCs have a superior cost advantage while on the ground over legacy carriers. However, we see that in Southeast Asia, this has not always materialized in terms of choice of airport usage. The next few subsections will seek to elucidate the reasons for choosing a particular strategy.

5.2 Case of Changi Airport, Singapore

![Figure 14: Map of Singapore Changi Airport. Where is the Budget Terminal?](http://apps.changiairportgroup.com/entertainment/interactivemap/main_.htm)

There are two terminals the LCCs are based out off. AirAsia and Jetstar Asia have chosen Terminal 1 to base their operations, while the Tiger Airways and Cebu Pacific are based out of the Budget Terminal, which is located to the left of Terminal 2 in Figure 14 above. One observation of this map of Singapore Changi Airport, and of the Kuala Lumpur International Airport is the fact that both airports do not demarcate the location of the Budget Terminals. Perhaps it is an embarrassment to even have a low cost terminal operate within the compounds of a supposedly premium airport.

Terminal 1 was the first terminal to open in the newly built airport along the east coast of Singapore in July 1981. As capacity grew, Terminal 2 was subsequently opened in 1990, and Terminal 3 was

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opened in 2008. While the addition of the new terminals may seem portend an eventual demise of the facilities at Terminal 1, the civil aviation authority has constantly refurbished the terminal, with a SGD 170 million investment in 1995, a SGD 420 million investment from 1996-1999, and a SGD 500 million investment from 2008-2011 to expand the airside capacity as well as the façade and halls. In essence, Terminal 1 is no less a luxury terminal that the airport authority, Changi Airport Group (CAG) intends it to be.

The Budget Terminal was constructed following the successful demonstration of the concept of a Low Cost Carrier Terminal (LCCT) within an airport by the Kuala Lumpur International Airport authority. The terminal is devoid of amenities, aerobridges, elaborate structures and a sophisticated baggage handling system in order to reduce landing fees, handling fees and airport taxes. In total, SGD 55 million (USD 37 million) was spent on the expanded terminal with a capacity to handle 7 million passengers annually (Kaur, 2008) (Changi Airport Group, 2009). Like the LCCT in Kuala Lumpur, the Budget Terminal is sheltered in a corner of the airport complex beside Terminal 2, and connected to the main terminals via a free shuttle bus system, unlike the people mover that connects the rest of the terminals.

In terms of size, the Budget Terminal is definitely smaller compared to the handling capacity of KLIA’s LCCT, but perhaps there may be subtle differences among the airport users at both airports, and the case for a smaller LCCT at Changi would be explained below.

For Jetstar Asia, the choice to remain at the main terminal is clear. Qantas has operated a hub and spoke system out of Singapore airport, providing service from major Australian cities so that they can be aggregated on non-stop flights to Europe (O’Connor, 1995). With its new Southeast Asian

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affiliate, Qantas is now able to expand this to regional destinations like Malaysia, India and China, thus achieving greater economies of scales between its Australian to Singapore legs with its ability to transfer to even more secondary destinations. The ability to transfer passengers in Singapore efficiently plays a key role in determining the airport usage for the Qantas Group of airlines. The Budget Terminal is ill suited to the needs of the large percentage of transfer passengers in Qantas flying through Singapore. Furthermore, while Jetstar is a low cost carrier brand within the stable of subsidiaries at Qantas, Jetstar plays a significant role in the development of the Qantas network structure. Many routes that were once unprofitable to serve on the Qantas mainline fleet are now operated by Jetstar. A notable example would be the transference of New Zealand domestic services to Jetstar using the Jetconnect brand, and subsequently expanding to routes between Australia and New Zealand. Recently, Jetstar has also taken over Tokyo Narita routes once served by Qantas. By co-branding both services on both the Qantas and Jetstar websites, Qantas hopes to achieve synergies from operating two different brands, and leverage on its network to drive customers to its services. In order to shed some of the negative connotations of a LCC, Jetstar is pursuing a mid of the line strategy that offers an adequate product at lower costs.

As of today, the taxes out of the main terminals are SGD28 (USD20) while the tax out of the budget terminal is SGD15 (USD11). While this is not a true reflection of the entire difference in per person airport fees, it does provide an indication of the scope of savings that a low cost carrier can achieve for its passengers by transferring service to the Budget Terminal. While the USD 9 can be significant on regional flights, this might not have such a great impact on Australian flights that typical cost upwards of USD 500. Furthermore, the convenience accorded to passengers by hubbing at the main terminal could more than outweigh the initial tax outlay.

For other airlines like Tiger Airways, the USD 9 matters- in other ways. While attempting to book a fare on the Tiger Airways website, rather than clearly indicating the individual components that make up the taxes and fees part of the ticket, the website simply indicated that SGD50 of taxes was due, without a clear explanation as to why additional money was required. In an attempt to reduce costs, the airline is instead charging passengers for more than the stated airport tax! Tiger Airways has never been one to profess its desire for be a transfer carrier, by claiming on its website (Tiger Airways, 2009) that:

Tiger Airways is strictly a 'point-to-point' airline. We therefore do not offer and cannot facilitate, the transfer of passengers or their baggage to other flights, whether operated by Tiger Airways or other airlines…

All passengers will be required to clear Immigration/Customs where applicable and collect their baggage upon arrival of their Tiger Airways flight. No transfers using 'Airside' facilities will be permitted.

Hence, its ability to afford a loopy schedule with no cognizance, much less careful planning about how its passengers transfer between its own flights, much less other airlines. While not judging its
business model, this strategy clearly favors a move to the Budget Terminal to take advantage of the lack of infrastructure that would be suitable for point to point carriers.

Similarly, we would expect that foreign LCCs that fly once or twice a day to Singapore to use the Budget Terminal’s facilities because of the reduced scope of the LCC service to essentially point to point service between Singapore and the country of origin. In the case of Singapore, Cebu Pacific falls into such a category and is able to leverage on the minimal facilities at the Budget Terminal. Offering a 6 flights a day from Manila, Clark and Cebu, passengers can travel to the Philippines and make use of transfer facilities in those airports to get to their final destination, be it within the Philippines or another part of Asia.

5.3 Case of the Multi Airport System in Kuala Lumpur, Malaysia

Figure 16: Map of Kuala Lumpur International Airport

Figure 17: Picture of Low Cost Carrier Terminal, Kuala Lumpur International Airport

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The Low Cost Carrier Terminal (LCCT) at Kuala Lumpur International Airport (KLIA) was fast tracked by the government to serve the growing needs of Malaysia’s leading low cost carrier, AirAsia. At a cost of about RM108 million (USD32 million), the low cost terminal was completed in about nine months, and opened on 23 March 2006, as part of the expansion of facilities at KLIA. The location of the terminal is 20km away from the main terminal, and there is an RM1.50 (USD0.50) fee to get from the LCCT to the main terminal (Malaysia Airports, 2009).

The LCCT is able of handling in excess of 10 million passengers a year, and provides for a domestic as well as international terminal. The current usage of the facilities is approximately 9.2 million passengers in the first nine months of 2009 (Centre for Asia Pacific Aviation, 2009), the urgency on the Malaysian government’s part to construct a new terminal that will eventually handle 30 million passengers sends a clear signal of the growing demand for services at the current terminal.

For a fraction of the capital outlay, the LCCT has been able to provide free Wi-Fi access, retail outlets as well as other amenities like lounges for a fee. It is no wonder that the KLIA-LCCT has been voted based low cost terminal in 2006 by the Center for Asia Pacific Aviation (CAPA) (Malaysia Airports, 2009).

LCCTs are a low cost way of improving upon the current airport infrastructure. While sharing the airside infrastructure such as taxiways, runways and air traffic control, the LCCT exists like an airport on its own.

LCCTs have to accommodate low fare carriers and their low fare paying passengers in its own low cost way. The demands of such a space are vastly different from a major terminal. In order to bring down costs, airports have to cut down on amenities and comfort such as aerobridges and ambience; and instead focus on functionality and costs as key performance indicators. Essentially, the airport serves the only purpose as acting as a gateway for outbound and inbound passengers without the pomp and hype of flying.

While the LCCT is a part of KLIA, there is virtually no connection between the LCCT and the main terminal. Another minus is the far distance from the LCCT to the main terminal, and would not be convenient for passengers who need to transfer between the main terminal and the LCCT. As has happened in many European airports, some passengers would make separate bookings on two different airlines if that helps reduce travelling costs. The notion of connectivity to allow passengers to transfer from one flight to another, regardless of which airline the passenger flies with, should be critical to any future LCCT construction. The ability to speed up connection time, while not the airport’s problem in this case, could nevertheless help distinguish one airport’s service from another, and promote more transfer traffic through the airport.

Yet, it is curious on the part of AirAsia to provide service at the LCCT despite the airport tax of RM51 (USD 15) being applied to both the mainline terminals and the LCCT. With that same airport tax, AirAsia could offer passengers transfers, comfortable service, a shopping experience and much...

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more if it remained at the main terminal. While there has been no news about the reasons for moving to the new terminal, it could be speculated that an eventual settlement with the KLIA authority over a reduced airport tax for passengers will be passed. Furthermore, externalities such as the almost exclusive use of the terminal and the positive low cost brand image might be contributing factors for the move.

Recently, the government has reopened the old airport- Sultan Abdul Aziz Shah Airport in Subang for turboprop commercial operations. This has led to Firefly, a low cost subsidiary of Malaysia Airlines that flies ATR72s, to start a regional operation out of that airport. There have been clamors from low cost carriers to reopen Subang Airport as a low cost airport for low cost airlines because of the high operational costs of KLIA.

The reasons for moving to a dedicated low cost airport are compelling for AirAsia, by far the largest LCC based in Malaysia. Firstly, AirAsia is large enough to command enough terminal space at KLIA’s LCCT to justify a complete airport for itself. de Neufville also mentions that the business model for low cost airports is distinct from traditional major airports. The view of airports mirrors the difference between low cost and legacy airlines, in the sense that low cost airports emphasize profitability through operational efficiency and minimal frills (de Neufville, 2006). While the same airport authority will run both airports, the synergies generated from the interdependence of the airline and airport, as well as the lack of constrains in airport development makes a persuasive case for Subang airport.

However, sufficient if not excess capacity at KLIA to accommodate LCC growth may prevent this move from materializing in the future. Concentration of traffic at one airport generates economies of scale, and provides KLIA with a better reputation as a gateway airport (with impressive passenger figures) for the capital of Malaysia. The government’s aviation master plan laid down the foundation for developing KLIA on an entirely new site, and the scale of the project calls for a single large airport to serve Kuala Lumpur in the future.

Yet, the only reason for LCCs demanding a shift to Subang airport is because of costs. They dislike the high operating cost at KLIA and expect that a shift to Subang airport with its older infrastructure to generate some savings along the way. In other words, if KLIA were to revamp its own operations and become leaner and more efficient, this evaporates the potential cost advantage of the old Subang airport and makes the case for remaining at the KLIA.

5.4 Case of the Multi Airport System of Bangkok, Thailand

The Don Muang Airport is the old airport in Bangkok Thailand. The airport at its peak served approximately 38 million passengers and 700000 tons of cargo in 2005. Plans for a second airport were created in the 1960s, but a series of economic and political crises slowed the proposed construction plan, and it was only in 2006 when the new Suvarnabhumi Airport commenced operations.
Further elaboration of the multi airport system in Bangkok is instructive. Although both Subang in Kuala Lumpur (see Section 5.3) and Don Muang in Bangkok welcome commercial operations at about the same time in 2007, the rules guiding the operations at Don Muang airport in Bangkok is less restrictive, and different conclusions may be reached.

The original intent of the old Don Muang airport by the government was to use the facilities for charter flights, general aviation and military operations. However, safety concerns over the cracked runways and higher costs of the new airport led a group of carriers to demand the reopening of Don Muang airport. The Airports of Thailand (AoT) reopened Don Muang following recommendations by the Thailand Ministry of Transport while repair works proceeded at Suvarnabhumi. Currently serviced by low cost carriers Nok Air and One-Two-GO airlines, there is speculation that Don Muang will be utilized as a LCC Terminal. On the other hand, AoT has separately announced that an 800 billion baht (USD23 million) budget terminal will be constructed to expand Suvarnabhumi Airport (MCOT, 2009).

Bangkok presents an interesting case study of the dynamics that multi airport systems present to governments. In its current form, Suvarnabhumi airport, built at a cost of USD3.8 billion (Buckingham, 2005), has the ability to handle 45 million passengers annually, with additional construction phases increasing that figure to 130 million passengers. The Thai government has spent a considerable amount of money to construct a green field airport that would eventually be the dominant airport in the capital city. Yet, if the government is anticipating the passenger counts through Suvarnabhumi to exceed its current design limits, reopening Don Muang would provide a ready to use alternative airport at much lower capital expenditure.

What should the government do in the light of two very compelling options? There is no straightforward answer to this issue. Beyond a simple cost benefit analysis of each airport, the government has to contend with political interests, infrastructure developments within Bangkok and the rest of Thailand, as well as the positioning of Bangkok as a gateway to Southeast Asia. Retaining the flexibility of operating out of both options should indeed be of paramount concern. With the nominal usage of Don Muang by general aviation, military operations and some budget carriers, perhaps this is a good enough reason to justify the domestic LCC operation at Don Muang. However, it should be noted that the only reason why LCCs are flying out of Don Muang is because of its low costs. If Suvarnabhumi were able to lower operating costs to a reasonably low level, the value proposition of hubbing at Suvarnabhumi would increase.

The discussion inevitably leads to the same conclusion that LCCs are only interested in costs and nothing much else. The ability to command a cost advantage by using an older airport- or an airport- is important as it helps drive demand for LCC services.

5.5 Multi Airport Systems across countries – Case of Singapore and Johor Bahru

Senai Airport is a small regional airport located in the state of Johore in Malaysia, across the second causeway from Singapore. The airport has traditional served the southern states of Malaysia, and had never been conceived as an alternative airport for travelers from Singapore.
However, with the advent of low cost carriers like Air Asia flourishing in the Malaysian market, and the high ticket prices on Malaysia-Singapore routes, Singapore was a logical choice to expand into. Yet, the bilateral air services agreement between both governments prevented AirAsia from serving this route.

In order to gain access to the large potential customer base in Singapore, Air Asia promoted Senai Airport as a low cost alternative to travelers who were willing to cross the border for a vastly reduced ticket to points within Malaysia. Recognizing that the most challenging aspect of the trip was crossing the border, the airline went as far as chartering buses from downtown Singapore to Senai Airport in a bid to lure passengers away with the ease and convenience of that option (The Straits Times, 2003). However, the licenses to operate the buses were not granted, and the allure of Senai Airport diminished to those who were looking for onward connections to other parts of Malaysia, especially those not served through Singapore Changi Airport.

Now that low cost carriers have access to routes between Singapore and Malaysia, the importance of Senai Airport as an alternative airport system to Singapore Changi Airport has greatly diminished. The airport has gone to serve mainly regional routes for the benefit of the local communities in that part of Malaysia. The latest OAG flight guide indicates that all the destinations served at Senai airport are also served at Singapore Changi Airport. If we assumed that people prefer nonstop connections to one stop connections, and that fares to those destinations are comparable at both airports, Senai’s appeal is definitely not appealing to any person travelling out of Singapore.

In this case, conflicting political interests played a huge role in shaping the traffic demand at Senai Airport. Assisting or abetting in any diversion of traffic away from Singapore Changi Airport would threaten the economic activity generated at Changi Airport, and challenge the status of Changi Airport as a premier airport in the region. While the Singapore government has an openly acknowledged open skies policy, the conflict between economic interests and government policy is always in favor of the former. This is perhaps true in all countries, not just Singapore. The imperative to safeguard a nation’s industry is inherent in the nature of the government.

Incidentally, this transference of traffic to Senai Airport had access to the airport been more convenient would be a short lived one. With the deregulation of air services between both countries, Senai Airport would have lost its share of Singapore travelers anyway because Changi Airport would become both accessible and convenient.

6 Implications for airports

The case for LCCs to remain in the main terminals, to move to a dedicated low cost carrier terminal, or to transfer operations to a low cost airport has been explored in some detail in the previous section. The reasons for choosing each of the three alternatives depend on a multitude of reasons in an exhaustive list that include synergizing among affiliate carriers, political influence as well as the perennial cost cutting reason.
What can airports do to accommodate the rising tide of LCCs in the market? What are the implications for airports in Southeast Asia, and how should they adapt to the cultural differences of the LCC? The next few subsections will explore some common themes that could be useful for airport authorities as they chart their future.

### 6.1 Mega Airport Master Plans Increases Flexibility in Space

What was not discussed in the previous subsections is the trend of airports in Southeast Asia in their willingness to construct mega-airport projects with to accommodate upwards of 100 million passengers a year in phases. This has been the case for capital cities such as Bangkok (Thailand), Kuala Lumpur (Malaysia), Manila (Philippines) and Singapore. While it may seem intuitive that such airports are required for a region that has a population of 600 million people, there may be difficulties in attracting these numbers from the local communities. None of these countries have populations larger than 100 million, and it would be improbable to also claim that everyone will through the capital city rather than fly direct from their local airport. Even if the argument included all the transfer traffic that could be derived from a LCC hubbing at an airport, it may eventually be a case of shifting the demand from one airport to another while not increasing the total number of travelers.

The most convincing argument for having one mega-airport projects is the flexibility in space. One of the key issues facing capacity constrained airports around the world today such as LaGuardia is the lack of available land to expand either the airside or landside facilities. With a grandiose master plan that could be all but theoretical, the land resources would have been allocated many years before. If the traffic demands require new terminal infrastructure, there would be options to construct additional facilities in the area. If not, the land could eventually be used for various purposes related to airport development, such as a logistics park, intermodal freight center, manufacturing plants, or meetings, incentives, conventions and exhibitions (MICE) hotels and exposition centers.

### 6.2 Flexibility in Design

De Neufville argues that there has been a paradigm shift in the way airports of the future are planned. While the traditional method has been to plan based on long term forecasts, long term relationships between established carriers, an appreciation for high standards, this is not the case today (de Neufville, 2006). There is a need for airport developers to put in place arrangements that enable airport owners to respond quickly and effectively to the changing dynamics of the traffic, airline mix, aircraft mix and so forth.

Flexible design is the key to developing a low cost terminal at a low price, while keeping the options for expanding or downsizing under consideration for future plans. Some strategies adapted from de Neufville include:

1) Commitment to a terminal, but investing in a small facility to establish technical knowhow.
2) Develop the terminal concept to appeal to potential customers.
3) Plan for a range of possible scenarios, and how best to accommodate them.
4) Flexible spaces that can accommodate fluctuation in traffic.

These strategies will help facilitate the development of the terminal and the airport. A good example would be Kuala Lumpur. With the knowledge that AirAsia would one day move a significant number of passengers through KLIA, the airport authority constructed a domestic terminal in 2006 for use predominantly by AirAsia at a very low cost of about USD30 million. Fast tracked to be completed in less than a year, the LCCT concept was tested and demonstrated and refined for the second iteration of the project- an international terminal with security and immigration facilities for cross border travel. Upon the completion of the international terminal this pass year, the capacity of the LCCT has increased to about 10 million passengers - sufficient for all LCC operations currently. Yet, this has already proved to be insufficient as the latest data indicates that the traffic figures will soon match capacity. If the project to build the LCCT were not in place, the alternative would have been to construct a cargo facility or a sorting facility for dedicated freight and cargo carriers. Such was the developmental history of the LCCT in Kuala Lumpur that highlights the important planning steps in the configuration and infrastructure development of airports to accommodate low cost carriers and their potential growth.

6.3 Airport within an Airport Concept for the Cost Conscious

Southeast Asia has pioneered the airport within an airport concept by housing the low cost carrier terminal within the compounds of the main airport terminals, and sharing the same airside facilities that legacy airlines use. Notably, Singapore Changi Airport and Kuala Lumpur International Airport are the leaders in this area and their success story is worth encapsulating in this concept.

The premise for this concept is the high costs of operating out of the main terminals. Common in these airports are grandiose infrastructure, chic ambience and amenities to make the travelling passenger have a comfortable and pleasant experience at the airport. Providing a high level of service is costly, and costs are what LCCs try to avoid.

The main driver towards this concept is the presence of a decently sized low cost operator that hubs in the airport, or several smaller operators that indicate interests in such a terminal. On average, it seems that airports in SEA have begun construction of facilities when there are about 1 million passengers (ballpark figure) travelling through the airport on low cost carriers, and that figure is constantly on the rise because of the growth in indigenous LCCs or foreign LCCs opening new routes. Intuitively, this is probably the point at which economies of scale from aggregating LCC traffic under one building develops, and from then on it becomes less and less costly to operate the terminal on a per passenger basis. Based on the construction costs to capacity ratio at Kuala Lumpur and Singapore, the figure is between USD3 to USD 5 per passenger. In essence, if the passenger throughput is at capacity, the airport would be able to recoup the development costs in one year for less than USD5 per passenger. This indicates that this is a viable option for almost all airports because of its small financial footprint.
6.4 Airport and Airline Interdependence and Collaboration

The airports need the movement of aircraft and the passengers it brings with it through its facilities to derive revenue from aeronautical and non-aeronautical sources. Yet, the airlines also need the airports to drive down costs so as to stimulate demand for travel at the low extreme of the demand curve. While a single mega-airport for the city usually implies that the airport authority has a virtual monopoly over flights within the region, and can thus charge monopolistic prices to the airlines. Yet, airports should not disregard the wishes of LCCs and refuse to lower overhead and airport usage costs.

The case of Ryanair and its hostile relationship with the British Airport Authority (BAA) and the British government (Ryanair, 2009) is all too evident. Ryanair eliminated routes and aircraft from its Ireland bases claiming that the government and airport were not doing enough to reduce the fixed costs of travel through those airports. In particular, Ryanair was unhappy over the British government's recent imposition of a 10 pound tax on air travel in the United Kingdom. What Ryanair has done is to leverage on its size and route frequency through particular airports to derive significant discounts on operating leases at airports. When airports and governments do not budge, they leave, creating a void at the airport. No one benefits in this kind of relationship. The local communities lose service to EU destinations, the airport loses revenues, the local industries like tourism are negatively impacted because of the reduction in air services and the airline has to redeploy aircraft and crews to other parts of the country or region. This kind of behavior is antagonistic, with at most one expected winner in the contest, and goes against the much more fundamental benefit of collaboration, where both parties can emerge winners after the negotiations.

The threat of pulling out of markets solely because of exorbitant airport taxes is slim in Asia. Threatening the airport authority is tantamount to threatening the government, and there is much less incentive to antagonize the government for fear of a reprieve that could sink the company. From a business standpoint, eliminating service to any major business or tourist destination is a dent in the revenues of any airline, and even an LCC cannot ill afford to reduce the dense point to point connections in the Asian network that passengers so demand.

One way to improve the collaboration is through appropriate usage price charges to meet the needs of legacy and LCC carriers. What Singapore has done to incorporate a two tier fee system for the main terminals and the Budget terminal provides incentives for the cost conscious airline and its passengers. The ability for airports to collaborate and work in tandem with airlines to reduce costs for both parties would present a significant breakthrough in the possibly hostile relationships between airlines and airports. Finding synergies with a particular airline may even be transferable to the rest of the airport, reducing management’s urgency to raise overall airport taxes.

6.5 Low Cost Carrier Terminals are not to be Ashamed of.

Just based on the figures obtained in Section 4.2 and 4.3, the deregulation of the market predicts a huge surge in traffic within the Southeast Asian region. Coupled with the growth in both scope and services of LCCs in the region, airports will eventually have to contend with the growing demands
of LCC traffic, and conform to their wishes as they grow and gain significant leverage at their home airports. If the figures are anything to go by, we would eventually see a 50-50 split between legacy carriers and LCCs in the near future as deregulation begins to revolutionize the market and drive more customers to the lower end of the market.

The low marginal costs of adding additional LCC terminal space would suggest that airport authorities on a budget would favor expanding facilities at main airports than building or reusing older, out of commission airports. This implies that the presence of LCC terminals would constantly be increasing, and may eventually be of comparable size to the main terminal facilities.

![Budget Terminal Hyperlink](image)

**Figure 18: Insignificance of the Budget Terminal on Changi Airport’s Website**

There is nothing to be ashamed of having a LCCT. Singapore Changi Airport is a case in point. The Budget Terminal hyperlink is located in the footer of the page, where it is easily overlooked. The airport seems to be dissociating itself from the Budget Terminal as those it is a child born out of wedlock. There is no mention of the Budget Terminal on the main website (www.changiairport.com) and vice versa (www.btsingapore.com), and even the transportation options between the two entities are not given. Passengers surfing for information may even view the Changi Airport and the Budget Terminal as two separate entities with no relationship at all.

Indeed, the Budget Terminal may not fit in well with the overall strategy of the Changi Airport Group as it position itself as a premium airport with elegant and comfortable facilities for travelers. However, in view of providing potential travelers with a clear and organized first impression of the airport before even stepping into it, this is simply unacceptable because it does not conform to the ultimate goal of the airport group to combine operational efficiency and customer delight that wins the hearts of passengers and partners (Changi Airport Group, 2009).

The increasing footprint of LCCs at any airport should thrust the visibility of LCCT initiatives to the forefront, and much more integration of information, transportation and other services has to be done to promote the customer experience.
6.6 Growth in Leisure Destinations Outpaces Growth in Capital City Pairings

If the deregulation of services between Malaysia and Singapore is any indication, the growths in seat capacity at secondary airports will outpaced the growth in the capital city pairing. This is due to the fact that the main drivers of low cost travel are the leisure passengers that can now afford to have a trip to a beach destination or resort for the weekend. The business traveler who is company sponsored and demands the flexibility in trip bookings would still be willing to pay the higher fares of the legacy carrier, although some trading downwards to LCCs may materialize.

Airports in secondary destinations should plan ahead for the expected increases in flights and passengers. While there may be more passengers, the figures should not reach a point where operational challenges undermine the overall management of the airport.

However, airlines could eventually find themselves operating secondary airports out of non capital city airports in an effort to expand the network to a greater catchment area. For example, Indonesian low cost carriers could create a mini hub in Hanoi, Vietnam, for outward connections north to China, Japan and Korea, much like what Qantas and Jetstar have done in redistributing traffic from Australian destinations to Europe and Asia. The opportunities for secondary airports to utilize some of their unused capacity could prove to be a revenue generator.

7. Conclusion

With the signing of the Memorandum of Understanding of a multilateral open skies agreement between ASEAN countries, Southeast Asia is on the cusp of a revolution in air services. Deregulation will create significant growth in the air services market, and a large share of this traffic will be attributed to the low cost carriers serving these markets.

While the airlines have to adapt to the changes more rapidly than the airports have, airports have a part to play in the development of this new playing field. As these low cost airlines seek the leverage of lower operating costs to drive lower fares that stimulate the demand for air travel, airports have to be engaged and responsive as they cannot be oblivious to the demands of a growing breed of low cost airlines that demand nothing more than the lowest common denominator or differentiator in the industry- costs. Drawing a parallel from the retail industry, the pursuit of local costs can only be achieved through collaboration. Wal-mart, the largest retailer in the world and by far one of the lowest costs operators are able to offer ‘everyday low prices’ because they have a group of suppliers that have are very involved in operating at low costs as well to drive their own sales volumes. Wal-mart provides the suppliers with technical knowhow, and their suppliers deliver the low cost products they need; ultimately both organizations are able to leverage on their individual expertise to collaborate and drive more business.

Airports and airlines are similar in many ways. Through proper planning and collaboration, airports in Southeast Asia can learn from the mistakes made in other regions, the experiences of the more mature aviation markets of Singapore and Malaysia as they forge a new and exciting path in the history of aviation in the ASEAN region.
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