Changi plans: building before they come
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Singapore Changi plans for doubling capacity

Yet again passengers have voted Singapore Changi Airport the World’s Best Airport, according to the 2016 SkyTrax awards. The airport has a well-earned reputation for making the passenger experience as good as it can and it’s no surprise that passengers whose travel plans require a connection have been choosing to connect at Changi for years.

Part of the success comes down to good planning. Singapore Airport has a track record of planning for future needs, building ahead of the demand curve and delivering a quality product for passengers and airlines. Passenger numbers have climbed to 54 million passengers per annum (mppa) while terminal capacity is comfortably ahead of that at 66 mppa.

However in recent years, Singapore’s position as the long-haul connecting airport of choice has been challenged by rival hubs, in particular Dubai, and more recently Istanbul. Upon completion, Dubai’s World Central Airport will be able to handle up to 240m passengers and the new Istanbul Airport will have capacity for 150m when it opens in 2018. So, as Changi announces plans to build capacity to allow it to handle 135m passengers annually, more than double the number passing through the airport today, we take a closer look at where this traffic might come from. While no-one expects Changi to develop infrastructure on the basis of ‘build it and they will come’, the case for a doubling of traffic seems less certain than it might have done a few years ago.

In this report we analyse the profile of current traffic and draw on OAG data to understand how traffic might be expected to grow over the next 5 to 10 years in order to understand where future growth will come from.
Building before they come

The three terminals at Singapore Changi have capacity for 66 million passengers. This is 7 million fewer than a few years ago since the budget terminal was demolished in 2013 to make room for the new T4, due to come on-stream in 2017.

Source: Statistics Singapore, Singapore Changi Airport

The past 10 years have seen traffic at Singapore grow by an average of 5.5% per annum. Another 10 years of growth like this takes traffic to 95m passengers, a long way short of the capacity T5 is expected to deliver.

Projecting forward, however, is tricky. Passenger bookings for travel to and from SIN grew by a more modest 2.7% last year. At that rate the new infrastructure would not fill until close to 2050. In contrast, the first two months of 2016 saw bookings grow by 9.6%. If passenger growth at SIN continued at that rate the airport would reach capacity by 2025.

Source: OAG analyser
Whilst by no means certain, a more appropriate measure is typically average growth over recent years. Changi has been growing at an average of 5.5% per annum for the last 10 years so it could be more likely that the airport will be reaching the new capacity around 2032. Certainly it appears that some additional capacity will be required by the mid-2020s, and assuming the new capacity will be phased in over time, the scale of the proposed developments appears prudent.

State of play

On top of the potential gap between projected capacity and the demand trend, the rate of traffic growth may be slowing. Annual scheduled capacity at Singapore Changi Airport (SIN) was 74.1m seats in 2015, up 1.7% on the previous year. Capacity has grown at 4.2% in the first six months of 2016 and at this rate SIN might end the year with capacity having risen above 77m in 2016.

In terms of its global ranking, Changi makes it into the Top 25 biggest airports in the world for seat capacity, ranked 17th, just ahead of Guangzhou and Bangkok and just behind Amsterdam and Jakarta. But its ranking has slipped slightly from five years ago when the airport was in 15th position, ahead of Amsterdam and Jakarta.

This June there are 72 airlines operating scheduled services in and out of the airport, with Singapore Airlines the largest operator, offering 31% of the total scheduled capacity. The four airlines which make up the SIA Group comprise just under 51.5% of all scheduled capacity at Changi.
TOP 15 AIRLINES AT SINGAPORE CHANGI – JUNE 2016

<table>
<thead>
<tr>
<th>Carrier</th>
<th>Seats</th>
<th>Share</th>
<th>Growth June 2016 vs June 2015</th>
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<tbody>
<tr>
<td>Singapore Airlines</td>
<td>1,966,618</td>
<td>31%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Tigerair Singapore</td>
<td>516,528</td>
<td>8%</td>
<td>-0.5%</td>
</tr>
<tr>
<td>SilkAir</td>
<td>511,734</td>
<td>8%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Jetstar Asia</td>
<td>398,700</td>
<td>6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Scoot</td>
<td>279,170</td>
<td>4%</td>
<td>57.8%</td>
</tr>
<tr>
<td>AirAsia</td>
<td>184,320</td>
<td>3%</td>
<td>-5.7%</td>
</tr>
<tr>
<td>Cathay Pacific Airways</td>
<td>179,116</td>
<td>3%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Garuda Indonesia</td>
<td>148,576</td>
<td>2%</td>
<td>16.8%</td>
</tr>
<tr>
<td>Emirates</td>
<td>135,360</td>
<td>2%</td>
<td>-14.7%</td>
</tr>
<tr>
<td>Indonesia AirAsia</td>
<td>118,800</td>
<td>2%</td>
<td>-12.5%</td>
</tr>
<tr>
<td>Malaysia Airlines</td>
<td>103,040</td>
<td>2%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Thai Airways International</td>
<td>94,434</td>
<td>1%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Qantas Airways</td>
<td>86,834</td>
<td>1%</td>
<td>22.7%</td>
</tr>
<tr>
<td>Cebu Pacific Air</td>
<td>82,228</td>
<td>1%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Other</td>
<td>1,551,589</td>
<td>24%</td>
<td>5.4%</td>
</tr>
<tr>
<td>All airlines</td>
<td>6,357,047</td>
<td>100%</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

Source: OAG schedules analyser

The low-cost airline penetration of the market appears to have stabilised at around 30%, having grown rapidly until just a few years ago.

AIRLINE CAPACITY TO/FROM SIN

Source: OAG schedules analyser
Close to half of all capacity (46%) to and from SIN is destined for, or arrives from, airports in South East Asia. The next largest market is North East Asia (25%), followed by South West Pacific (10%). This signals the strength of SIN’s role primarily as an airport serving Asia, albeit one with a significant volume of long haul.
Evolution of an airport network

For a while the ‘kangaroo route’ connecting passengers between Europe and Australia via SIN had a high profile and contributed to the airport’s reputation as the connecting point for travel between the Continents. While online capacity between the Southwest Pacific and Western Europe appears not to have changed, the share of seats available, which route via Singapore, has declined. In June 2010, 15% of available capacity was via SIN but today it is down to 10%. In contrast, 51% of online seats are available via Dubai (DXB), up from 32% in June 2010.

So if SIN is losing its role as a long-haul connecting point, where is the real focus for the network? Today, the majority of routes are regional and exactly a third of routes are under 3,000km (approximately 4 hours flying, June 2016).
There is a slight but discernible evolution of the route network over the past three years with a small decline in the number of routes under 1,000 km operating to and from SIN, but also fewer routes over 6,000 km. Back in June 2010, 29.9% of all routes operated were under 1,000 km and this has slowly but steadily fallen to 27.6% in June 2016. At the other end of the market, the proportion of routes over 6,000 km has fallen from 13.0% in June 2010 to 11.3% in June 2016.

The effect of this is that SIN appears to be focussing more on the Asian market. With the advent of new long-range aircraft which reduce the need for connections, as well as the rise of the Middle East hub airports, this should come as no surprise.

**COMPOSITION OF TRAFFIC THROUGH SIN – MARCH 2016**

* airports shown are example routings.

Passenger booking data can show what is actually happening with connecting traffic. Over the last three years the proportion of local traffic, i.e. passengers flying directly between SIN and another airport, has remained static at 63%. This means the proportion of passengers who are connecting at SIN is 37%, made up of 23% who commenced their journey at another airport and are connecting at SIN to travel onwards to their destination. Another 2% of passengers make an additional onward connection (in addition to the connection at SIN) and 12% start their journey at SIN but connect onward at another airport to reach their ultimate destination. So if the proportion of local and connecting traffic has remained the same but overall traffic has grown, then both local and connecting traffic have grown.
There is obviously some variation by route with shorter routes typically having the highest level of local traffic, such as Jakarta, Bangkok, and Ho Chi Minh. In contrast, fewer than 50% of passengers on planes to and from Sydney, Melbourne, Perth and London are simply travelling to or from Singapore.
Four brands – one strategy

With airlines operating within the Singapore Airlines Group now making up over half of Changi’s scheduled airline capacity, the success of the airport in achieving passenger growth is closely tied to the successful implementation of the airline group’s strategy. And that strategy appears to be working. Ten years ago Singapore Airlines operated 46% of seats at Changi and other airline brands within the SIA group operated a further 5% taking the group share to 50%\(^1\). Recognising the problems faced when legacy carriers compete with low-cost carriers, the group has pursued a clear strategy which has focussed on aligning specific markets with the type of air service best suited to market conditions.

So, the SIA group has adopted a multi-brand strategy with four clear product offerings – Singapore Airlines (SQ) as the full service long-haul carrier; Silk Air which is the regional full service carrier; Scoot, the long-haul, low-cost airline; and with the acquisition of Tigerair, the group now has its own short-haul, low-cost airline. The creation of Budget Aviation Holdings in May 2016 as a holding company for Tigerair and Scoot is a step towards the eventual merging of these brands.

Having dipped as low as 40% a few years ago, the SIA Group share of capacity is now back up above 50%, made up of Singapore Airlines (32%), Tigerair Singapore (8%), SilkAir (7%) and Scoot (3%).

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\(^1\) Tigerair Singapore has only been included since 2014 when parent company Tiger Airways Holdings became a subsidiary of the SIA Group.
Implementing the strategy has sometimes meant switching the brand which operates a route. The Singapore-Nanjing market, for instance, was operated by the full-service Singapore Airlines until 2010 but is now operated by the medium/long-haul, low-cost carrier, Scoot. Similarly, as the group makes in-roads into the Indian market, Scoot is taking over routes there such as Singapore-Chennai, previously operated by the low-cost airline Tigerair. Now that the Group has full control of Tiger, we should expect to see more changes to the mix of airlines and routes. There will be routes where more than one of the SIA brands operates with each other, competing for different market segments and at different times of day.

The SIA Group also operates a joint venture with India’s Tata Group to run Vistara, an Indian full-service carrier which started operating in 2015, and a 23% ownership stake in Virgin Australia although that is now the subject of scrutiny as Air New Zealand is looking to sell its stake in the carrier. It also divested its 49% stake in Virgin Atlantic in 2014. Scoot also has a joint venture with Nok Air to operate NokScoot, a Thai low-cost, long-haul carrier based in Bangkok.

So what this shows is that the SIA Group has been putting its house in order over the last few years, focussing on regional brands and matching the product with the market. They have not gone as far as to actively facilitate connectivity between the brands although the new Value Alliance, which includes the SIA Group’s low-cost brands, may be an alternative way to drive low-cost connectivity.

Singapore Airlines acknowledges that they have not pursued aggressive growth in long-haul markets in recent years but this will change as A350’s start to arrive into the fleet. There are two A350-900s in the fleet now and a further 65 on order, 7 of which are the A350-ULR version capable of flying for up to 19 hours. The airline has already announced the intention to operate non-stop flights again to the US from 2018. Although a rise in oil prices will be a challenge, the A350s are undoubtedly more fuel efficient than the A340s that previously operated on SIN-US routes. A look at the map of routes operated by Singapore Airlines that are over 3,000 km shows that there are plenty of long-haul destinations they don’t currently fly to.

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2 [https://skift.com/2016/03/14/singapore-airlines-ceo-on-its-multi-brand-strategy-for-winning-in-asia/](https://skift.com/2016/03/14/singapore-airlines-ceo-on-its-multi-brand-strategy-for-winning-in-asia/)
The airline had been expected to code-share with fellow Star Alliance member, United Airlines (on its new Singapore operation which started in June 2016), until it took delivery of new long range A350 aircraft in a few years. However, rivalry appears to have trumped alliance membership in this instance. In what is already a very competitive market with multiple one-stop options, two non-stop flights will really test the staying power of both carriers unless there is a broader, deeper relationship being considered.

Singapore Airlines also has 30 B787s on order which seem set to replace their ageing B777s. Whilst the B787 will not offer them a capacity increase, the aircraft is more fuel efficient and may allow existing long-haul routes to be more competitive.
Prospects for growth

So having established that the SIA Group is well positioned to grow, which markets are most likely to deliver the required growth in demand and which other airlines will contribute to that growth?

Starting with outbound travel, Singapore itself is a city-state with a population of 5.5m\(^3\) of which 3.9m are residents and 1.6m are non-residents. In 2015 there were 1.2\% more residents than a year earlier but the rate of population growth has been slowing. As long as the economy continues to grow, there is every expectation that outbound travel should continue to increase, enabling residents to travel abroad and the non-resident population to travel back and forth to their place of origin. According to OAG Traffic Analyser, in 2015 a third (33\%) of all passengers with an origin or destination in Singapore (i.e. local passengers, which constitute 63\% of all traffic at SIN) also had a point of sale that was Singapore, which means outbound travellers may only account for a fifth of all passengers using the airport.

So what of prospects for inbound traffic growth? Again, that will largely be linked to the state of the economy in source markets. China and Indonesia are the two most important markets for international visitor arrivals to Singapore\(^4\). Growth in visitor numbers from China have varied radically year by year but the latest figures, for March 2016, show there were 84\% more visitor arrivals from China than a year earlier. Growth in Chinese visitors has been facilitated by a steady increase in the number of air services between Singapore and China. In June 2010 there were scheduled services to 12 destinations in China; today that number is 25. The number of airline seats has averaged growth of 10\% per annum since 2010. With the next few years likely to see new Chinese low-cost carriers come to the market and new secondary airports commence services to Singapore, the prospects for growth in this market are strong.

Visitor arrivals from Indonesia are not growing quite so fast with a ‘mere’ 13\% increase in March 2016 vs the previous year. Capacity to and from Jakarta makes up over half of all airline seats between the two nations but with Jakarta effectively operating beyond design capacity, additional capacity will need to come from larger aircraft or secondary Indonesian routes. The number of routes operated to Indonesia has remained fairly static for over five years so while there is growth potential, airport infrastructure is a major issue. On the positive side, Indonesian carrier Lion Air has more aircraft on order than any other airline in Asia just now. Of the 3,960 which are on order in Asia Pacific for the next 10 years, according to CAPA Fleet database, 464 have been placed with Lion Air.

The third strand of potential traffic growth will come from connecting traffic. The airport is fortunate to be located conveniently between some of the largest and fastest growth markets in the world and whilst the SIA Group strategy appears ready to make the most of the opportunity, it will have to compete hard with the Gulf carriers who have already secured their position. Membership of the Star Alliance clearly creates opportunities for

\(^3\) Population Trends 2015, Singapore Department of Statistics
\(^4\) International Visitor Arrivals Statistics, Singapore Tourism Board
generating connecting traffic at Singapore, especially if the relationship with United is to become closer. The greater opportunity for the SIA Group may be in facilitating connectivity between Scoot and Tiger, so that the airport becomes a hub for low-cost connections as well as full-service connections.

Aircraft orders across the region provide supporting evidence for where growth will come from. After Lion Air, AirAsia has the next largest order with 246 aircraft orders in place, followed by IndiGo with 221. The three largest Chinese carriers have orders for a further 476 aircraft between them.

Something special

While we are right to be sceptical of the ‘build it and they will come’ mentality that some airport authorities have had in the past, there is no doubt that Changi has an ability to influence passengers to want to visit, whether that’s as a tourist spending time in Singapore or just transiting. With the new Jewel Changi Airport under construction this may never be more true. Pitched as a destination in its own right, Jewel Changi Airport will sit between the three existing terminals, acting as a transfer facility as well as a shopping mall, hotel, dining venue and visitor attraction. The glass structure will house Singapore’s largest indoor garden as well as a ‘towering rain vortex’.

ARTIST IMPRESSION OF JEWEL CHANGI

Images © www.jewelchangiairport.com
As Changi has succeeded in doing so in the past, the new development will firmly place the experience of the traveller at its heart, ensuring the airport continues to be a destination in its own right. It seems that at Changi they dream bigger, spend more and give travellers more reasons to choose Singapore.

Images © www.jewelchangiairport.com
Good planning?

Undoubtedly there is a case for significant expansion of Changi to accommodate future growth – the question remains whether there is a case for the full expansion to capacity of 135 mppa. Airport infrastructure development and implementation takes many years and so decisions need to be based on the best available information. Having reviewed the recent growth, analysed the served markets and assessed the evolving airline relationships and business models, it suggests that the full capacity will indeed be needed. Our estimate is that it will be around 2035 when the new capacity will be reached.

China, Indonesia and others such as Vietnam and Myanmar will be strong growth markets for Singapore and alongside the evolving plan of the SIA group and airline models in general, Changi is well placed to deliver sustained growth over the next 20 years.