

Point-To-Point, Hub-To-Hub: the need for an A380 size aircraft

Troy Tollen's comments on the future of hub-and-spoke networks (www.leecham.net, March 14, 2006), stating that "hub-and-spoke conflicts with modern commercial airline economics," is a pretty bold statement. He cites as evidence for his assertion the fact that American, Northwest, United, Alitalia, KLM, Olympic, and Malaysia Airlines are either bankrupt or struggling, because they are too dependent upon hubs. It is true that some of these airlines have suffered for years from management woes and union problems that are completely unrelated to their fleet and network strategies. This group of airlines operates 65 747-400s and 28 older model 747s.

Tollen could equally have looked at another group of strongly "hub-centric" airlines: British Airways, Air France, Lufthansa, Singapore, Cathay Pacific, Qantas, Emirates, All Nippon, Virgin Atlantic and Thai International. These are profitable airlines operating 246 747-400s, plus 28 earlier models. It would be reasonable to suggest that in each case, their strong hub strategy and use of a very large number of 747s has contributed much to their profitability.

But before I comment on the drivers that I believe will contribute greatly to the sales success of the A380 for years to come, I want to start with an analysis of the pros and cons of point-to-point services. In an ideal world, we would all like to travel non-stop from our city of origin to our destination. From smaller markets where traffic loads even on major routes to international hubs cannot support large aircraft (747-400 or A380), smaller units of capacity such as the A330/767/A340/777/A350/787 make a lot more sense. However, the sizes of the major population centers in smaller countries mitigate against a multitude of point-to-point international services. For example, Toronto to Lisbon would seem to be a candidate for point-to-point service, but this has not been borne out economically. Even major centers such as Dallas and Guangzhou, each with populations of over four million people, cannot support a single weekly service when examining current O & D statistics.

Another aspect of point-to-point, particularly on international routes, is that on many potential O & D city pairs, demand might be sufficient for just a handful of weekly non-stop services. Passengers – especially high yield business travelers -- demand at the very least a daily frequency and this is often uneconomic.

The economics of long-range non-stop services using smaller aircraft are such that competitive low fares are almost impossible to achieve – due to the economies of scale effect. A narrow body 737-700 when measured against a 20% lower seat-mile cost twin-aisle 300 seater, or a 40% lower seat-mile cost A380, can be seen to be in an awkward position. Lufthansa's experiments with 737-700/A319 aircraft on non-stops from secondary German cities to New York offer high yield business class seats only. Leisure passengers, who are by nature price sensitive, prefer to travel via a major hub in order to achieve their primary objective: low fares.

Tollen seems to think that several LCCs are on the verge of entering the long-range international market. The barriers to entry into this part of the business are significant, and space doesn't permit me to address all the issues in this A380 market analysis. Suffice to say that competing with established carriers with high levels of on-board service, multiple routing options, high frequencies, alliance benefits, well established frequent flier programs and airside lounges

presents a challenge. The “give away” coach trans-Atlantic fares that the majors offer in winter are compensated for by the higher winter demand for Business/First Class seats—an LCC would have no such protection.

Low fares are the key to the majority of passengers’ travel decisions and also are the prime motivator for passengers to fly more often. Both IATA and US Department of Commerce surveys bear this out. According to a 2004 US Commerce Department survey of US international passengers, ticket price was the major criteria passengers used to choose to fly on a particular international flight. In this survey, 33% of respondents had chosen their particular flight based on air fare. Only 11% of respondents picked non-stop service as their prime motivation to choose a given flight. Interestingly, this survey also showed that frequent flyer programs were rated as more important criteria than “non-stops.”

Another factor is simply the availability of slots. Slot constrained airports are unlikely to open up more opportunities for smaller capacity aircraft. To quote Eryl Smith, British Airport Authority, Business Strategy, Planning and Development Director, “By 2016, the 60,000 A380 movements a year could enable nearly 10 million more passengers to fly to or from London Heathrow with no increase in flights”.

One might argue that many of these passengers do not want to go through Heathrow or any other major hub on their way to their destinations. However, the percentages of passengers that use at least one hub on their journey is surprisingly high and the volume of seats offered for hub-to-hub or hub-to-secondary city markets far outstrips the secondary city to secondary city growth rates seen over the past thirty years. As already mentioned, fares via hubs are likely to be considerably lower and in addition there is likely to be a choice of frequency and carrier which does not occur on many point-to-point routes.

Turning to the demand for the A380 in the next 20 years, a number of factors come into play. Firstly, Airbus has never denied that there is a need for point-to-point aircraft--as indicated by their development of the A330/A340 Family ahead of the 777. The A350 is being developed as a response to the 787, but range costs money and some carriers may well find the economics of the A330-200/300 competitive with the A350/787 for their particular network. The 250 to 300 seater 767/777/787/A330/A340/A350 types are essentially destined to operate hub to secondary cities and secondary city to secondary city, while the A380/747 address the Hub-to-HUB market segment. In the future, both these markets will grow at a similar pace and new routes will develop to secondary cities but hubs will become even larger and stronger. Hub-centric airlines are basically obliged to invest in both the smaller and larger capacity aircraft to meet demand without becoming volume constrained. An evaluation of an A380 versus a 787/A350 would not make sense as they are clearly destined for different size markets.

As an aside, Tollen suggests that the 787 has almost become omnipotent in the 250-300 seat category. An all-composite fuselage is an enormous challenge and it will be several years before Boeing’s bold step is vindicated and the fruits of their endeavor are proven to produce the claimed economic gains. In the meantime, the A380 is flying and meeting its specification targets. The A350 should also achieve its fair share of the market in the years to come

Certainly in the past, some 747s were operated at low load factors simply because they were the only aircraft with the range airlines needed. As Tollen rightly points out, this is no longer the situation, but this niche is not one that Airbus looked at when conducting its extensive market research and customer focus groups (over 200 major focus group meetings with potential airline customers) that assisted in the definition of the aircraft.

Let's take a look at some of the drivers in terms of the real need for the A380.

In the past 36 years since the introduction of the 747, traffic has grown tenfold. The 747 represented a 150% increase in capacity compared to the DC-8/707 series it replaced only 10 years after their introduction. Now, 36 years after the 747's introduction, the A380 is offering a modest 35% increase in capacity, in addition to increased comfort standards (a wider seat in coach is a big selling point), significantly lower fuel burn per passenger plus lower costs per passenger mile and the ability for "slot poor" airlines to carry larger numbers of high yield passengers to these airports--and hence more profitably utilize their precious slot availability. Perhaps it is worth mentioning, as some people question the handling of 550 passengers off one aircraft, that 550 seater 747-400s are operating today, in a single class configuration.

Within Asia more than in Europe, many of the countries have very highly concentrated population centers, in terms of wealth and ability to travel. Even in China, three cities dominate as the "centers of wealth." Thus, major hubs in Europe and the US are inevitably going to be linked to the major Asian hubs with connecting services, either by air--or by rail in the case of Japan, for example--being offered to the relatively small percentage of passengers who did not have the hub as their final destination, but wanted low fares. As already mentioned, the relative concentration of Europe geographically also offers passengers the opportunity to avail themselves of connecting through hubs to secure lower fare levels. Smaller populations in countries such as Belgium, Holland, Austria, Switzerland, Sweden, Norway, Denmark, and Finland will never have non-stops to more than a few major hubs abroad.

Another aspect where some long-range international services differ from domestic services is that of time-zones. Departures from Asia to Europe, for example, are primarily concentrated in the late evening, in order to arrive in Europe early morning. To dispatch a flight from Hong Kong at 3 or 4 AM is not going to be popular. Because of this, some airlines find themselves having to 'bunch' departures within a very narrow time window on the same route. Using two A380s instead of three 747s is going to be more efficient and profitable in these cases.

Asia is a big part of the reason the A380 was developed. The Asia-Pacific region will represent over 60% of the overall demand for the A380 by 2023, compared with just 10% in North America. By the year 2023, three-fourths of A380 size aircraft will operate through only 20 airports and these airports will 'utilize' almost 700 large aircraft. Now let's add in the forecast demand for large cargo aircraft. By 2023 a market for 400 large freighters is anticipated. If we assume the A380 secures just 50% of that market then by my reckoning and simple arithmetic, in 2023 there will be around 1,000 plus A380 capacity aircraft in service--a far cry from Tollen's projected 350. Sixteen forward-looking, hub-centric airlines have already ordered 159 A380s. These airlines alone will require another 400 aircraft, with cumulative orders for some 550 aircraft in the next 15 to 20 years. Further analysis shows another 40 airlines with a requirement for a further 450 to 550 A380s in the same time period.

It is interesting that as late as 1996, Boeing's forecast for A380 size aircraft was close to Airbus's, but has steadily declined, in the absence of a stretched or fully rejuvenated 747-400. With the launch of the 747-8 this number is gradually being revised--some 15% upwards! The aviation industry has a habit of exaggerating the forthcoming death of a program. In recent years we have seen the stampede towards the 50 seat RJ and the judgment that 50-70 seat turboprops were about to cease production. Economic reality in 2005 forced many carriers to reevaluate this decision and the consequence was a several hundred percent increase in orders for turboprops while orders for the 50 seat RJ began to resemble the Cheshire Cat's smile. Are we perhaps also living in Alice in Wonderland with the stampede to purchase huge numbers of 250-300 seat long range airliners?

If the A380 lives up to its promises in terms of improving airline profits and attracting passengers due to its space, comfort and services--the so-called "WOW" factor--then many other airlines may be obliged to respond or suffer the economic consequences. The major Japanese carriers, Cathay Pacific, British Airways, United Airlines, Northwest Airlines, South African Airways, Air India International, plus a number of others, will all likely become operators. It is highly probable, as the world's economy continues to grow and China and India in particular expand their economies rapidly, that the consequent passenger growth, and hence the sheer volume demands between hubs will have the major airlines singing a new song: "Big is Beautiful."

The airliner business is an extremely competitive one. When I arrived in the US in 1985, Eastern and Pan Am were the "fingertip hold" customers that Airbus had in North America. When I first began calling on United they smiled politely and "wished me a nice day." But "those who scoffed remained to play," to misquote a fine poem. The quality of Airbus products has been recognized by the market place and today almost 6,400 have been sold worldwide, including almost 1,100 in North America, operated by 19 carriers.

The A380 is just one part, albeit an important part, of Airbus' current product line. It will enter service later this year and will still be in service in the middle of this Century. All the socio-economic and environmental drivers would seem to predict that it will have a rosy future.

By Anthony Lawler, April 4, 2006. Mr. Lawler was employed by Airbus as a sales executive from 1970-1976 and again from 1984 to 2004. He is now retired.