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ON THE ROUTE TO RECOVERY

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Sizing it Up

As the two largest commercial aircraft manufacturers present competing views of the future for aircraft production, airlines are faced with choosing the proper strategy for their future fleet.

■ By Vinay Dube | *Ascend* Contributor

During the recent IEA, Future of Air Transport Conference in London, both Boeing and Airbus delivered their vision of the future of aircraft. The individual presentations each painted a fairly compelling — yet opposing — picture. The stakes for both companies are quite high. Given the long lead time it takes to go from idea to concept to design to delivery, Airbus

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and Boeing are now effectively determining their success and failure for the next 10 years or longer.

On the surface, the battle between the two aircraft manufacturers appears to be the A380 versus the 7E7 — or size versus efficiency. Airbus, however paints the battle as the A380 plus the A330 plus the A321 versus the 7E7 and the rest of the Boeing product line, adding the dimension of operating economics. As airlines continue to recover and evaluate their future fleet needs, they will face a choice between the two competing visions of the future. It's all a bit confusing, but four underlying issues will determine the success and failure of each strategy.



Image courtesy of Airbus



Congestion

Airports and airspace are getting increasingly congested or even saturated. Increased congestion at airports and across available airspace will prevent a continued growth in frequency in a number of large markets that have a high growth in air traffic demand. The only way to satisfy this demand will be to fly larger aircraft across each frequency. But a large proportion of these routes are already

Service Patterns

Flying a larger aircraft is just one way of fighting congestion. Airlines could also further fragment their route network by bypassing their own hubs to offer passengers a more convenient nonstop service between secondary cities. Direct services between smaller cities will mean that passengers no longer have to connect over hubs, which will help reduce the demand on the large “trunk” routes. Typically,

one of the four largest air travel markets has not had a dramatic increase in the number of city pairs served by nonstop service (the intra-U.S. market). The other three top markets have all grown dramatically — intra-Europe by 65 percent, Europe to the United States by 60 percent and trans-Pacific by 250 percent. While it's tempting to throw away the intra-U.S. data point as an outlier, the intra-U.S. market has invariably been a lead

The philosophies of the two large aircraft manufacturers are reflected in their newest products. Airbus has launched the A380 (left and below center), which will be the world's largest commercial aircraft when it enters service in 2006. The double-decker, four-aisle aircraft seats 555 passengers in a three-cabin class configuration. The A380's modern technology and economies of scale provide 15 percent lower seat-mile costs than today's most efficient aircraft, according to Airbus. Boeing, meanwhile, has focused its efforts on a new, fuel-efficient aircraft, the 7E7 (below left and right), which will be built primarily using composite materials — including the fuselage and wings. The base model of the new Boeing will carry 200 to 250 passengers on routes between 7,800 and 8,300 nautical miles (14,500 to 15,400 kilometers) and is projected to be 20 percent more fuel efficient than comparably sized aircraft. Boeing expects the aircraft to enter service in 2008.

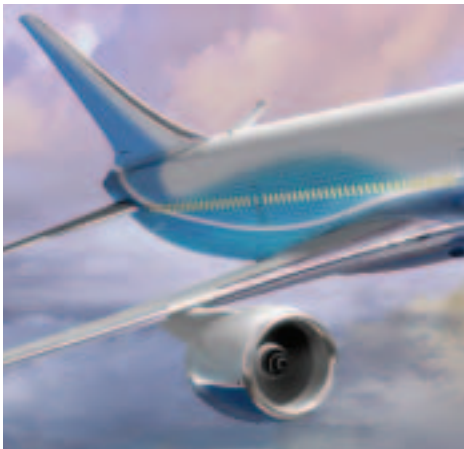


Image courtesy of Boeing



Image courtesy of Airbus



Image courtesy of Boeing

flown by the largest aircraft available today, the 747, with a capacity of approximately 430 seats in a typical configuration. With a capacity of approximately 550 seats for its typical configuration, the A380 represents a significant increase in size over the largest aircraft available today and will help satisfy the demand for this special set of routes.

Will the A380 then really help reduce congestion? Probably not considering that most large congested airports have less than 15 percent of their departures served by aircraft with more than 300 seats. But then, it's not about reducing congestion; it's about serving large-growing markets in a congested environment with a larger aircraft — for many airlines, the A380 represents the most logical choice. The only question is how large will this demand for the A380 be given that its mission is very specific?

secondary cities have less congested airports, and the air corridors connecting these cities can accommodate additional services.

Direct service between an origin and destination is also a convenience that passengers crave. Or is it? Official Airline Guide data

“Airlines need to obtain the appropriate mix of aircraft to maximize network profitability.”

has shown that the number of city pairs connected via nonstop services has marginally declined since 2000. For most other industries, the last three years of data would be extremely relevant in predicting long-term trends, but in the airline industry, the last three years likely are not a fair representation of market trends. Looking at OAG data for the last 17 years shows that since 1985 only

indicator of what's to come in the global aviation industry. Although it's difficult, if not impossible, to predict what the future will hold, there is no doubt that if the number of city pairs connected via nonstop services grows dramatically over the next few years, the need for an ultra-large aircraft will decrease significantly.

Operating Economics

Continued pressure on prices, and therefore on operational costs, needs to be addressed by every airline. Reducing the unit operating cost per passenger is one way of accomplishing this goal. Flying a larger aircraft with reduced unit operational costs will allow airlines to respond to the continuous downward pressure on prices. Airbus believes the A380 will burn at least 15 percent less fuel per passenger than any other aircraft in the world on a typical long-haul route. While this may be the case, larger planes are generally more

expensive to fly than smaller planes even though their unit cost per passenger may be lower. For example, even though the A380 consumes less fuel per seat as compared to the 747-400, Boeing estimates it still costs approximately 29 percent more in fuel per trip. While the 29 percent statistic is debatable, it is almost certain that the A380 will consume more fuel than the 747-400 per trip and is only a viable option to reduce operating costs on

years, we've seen airlines rationalize their fleets in a number of ways. In particular, airlines have gained a substantial advantage in operating costs by purchasing crew-compatible aircraft from a single manufacturer. This is the reason Airbus has designed the A380 to be flown by a common pool of A320, A330 and A340 pilots.

Airlines need to obtain the appropriate mix of aircraft to maximize network profitabili-

Image courtesy of Boeing



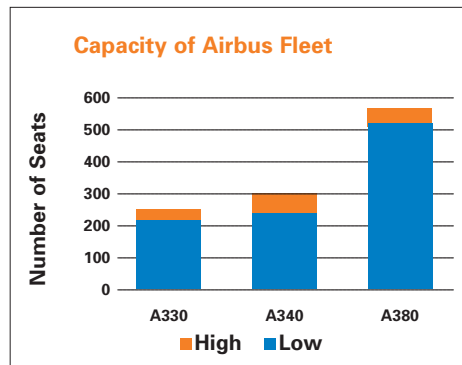
Various market factors such as congestion, service patterns, operating economics and product range will determine whether the Boeing 7E7 (above) or the A380 (below right) or both will become the most viable option for the future of international transport.

routes that are being flown with large aircraft at very high load factors.

While lower operating economics are not central to the A380 argument (although they can't be ignored), they are the key to Boeing's 7E7 program. Boeing states that the 7E7 will consume 20 percent less fuel than a comparable A330. Airbus doesn't think so. Airbus believes that its new class of A330s can fly as efficiently as any comparable aircraft. Given the popularity of the 200-to-250-seat segment, this argument is central to the viability of the 7E7 program, and Boeing's future depends on its ability to deliver on its promises and/or Airbus' response in the next few years.

Product Range

While a low operating cost is an important issue for any individual aircraft type, it is not the only issue to consider. During the last few



With 555 seats, the A380 represents a significant leap in capacity from Airbus' next largest size aircraft, the A340. For airlines wishing to operate a complete Airbus fleet, there is a risk of having too much or too little capacity on a route.

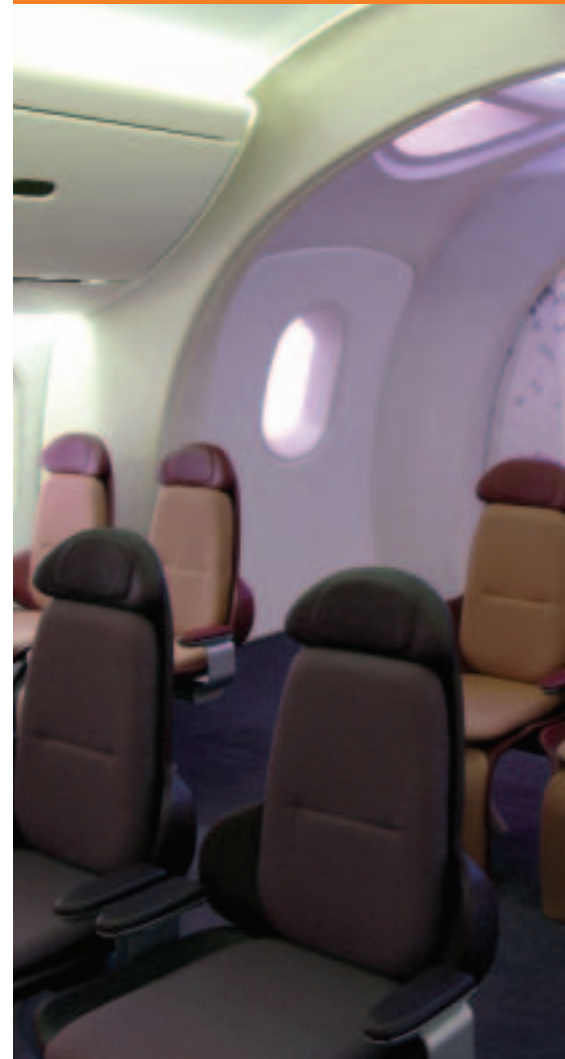


Image courtesy of Airbus



ty. Simplistically, this means that if a route is operating at a high load factor, an airline might consider upgauging aircraft, and if a route is operating at a low load factor, it might consider downgauging. As such, an airline typically has a range of aircraft with varying numbers of seats.

The interior of the new 7E7, developed in partnership with Teague, a Seattle, Washington-based design firm, incorporates many new elements such as sweeping arches, dynamic lighting, larger lavatories, more spacious luggage bins and electronic window shades.



Image courtesy of Boeing

Airbus has chosen to step away from tradition and create something that truly is a mission-specific aircraft that does not easily fit into a step-wise increment of capacity.

The A380 represents a jump of 170 seats from the next largest size of plane Airbus offers, which means that if a route currently operating an A340 is running full, it's not obvious that it could be flown by an A380. Most airlines operating an A340 as their largest aircraft today would rather buy a 450-seat aircraft than a 550-seat aircraft to add a degree of versatility to their fleet mix. But if Airbus does not offer such an aircraft and the airline is an "all-Airbus" airline, then it might elect to go a step higher with the 550-seat A380, potentially risking having too large an aircraft to serve the route.

So what's the verdict? Is it Airbus or Boeing? Or could it be both? The choice is not necessarily mutually exclusive. As conditions continue to evolve, traffic increases and routes fracture, the aviation industry might require a large aircraft to combat congestion as well as a fuel-efficient, mid-market aircraft to combat the perennial downward pressure of yields. During the next 10 years, the market place will determine the answer. **E**

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THE HIGH • LEVEL view

News Briefs from Around the Globe

Who

Philippine Airlines

What

Signed a five-year contract for electronic ticketing services across its domestic and international network. The Sabre Airline Solutions Electronic Ticketing Hosting tool gives Philippine Airlines a way to distribute tickets electronically and manage the activities related to maintaining

the electronic ticketing database without the cost of building its own system. The system also gives the airline the option of interline electronic ticketing and provides it with connectivity to all global distribution providers.

Why

"The benefits of moving to electronic ticketing are twofold," said Kevin Hartigan-Go, vice president information systems for Philippine Airlines.

"First, we'll be able to reduce the costs incurred by processing paper tickets, and secondly, we'll be able to improve efficiency and customer service levels. With this implementation, we are well placed to facilitate electronic document exchange with other airlines whom we have interline relationships with, fulfilling the requirements of some U.S. carriers to support electronic ticketing by 2005." **E**