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COMPETITION AND CHANGE IN THE LONG-HAUL MARKETS FROM EUROPE

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ABSTRACT

Long-haul operations remain crucial to the viability of many of the traditional European ‘flag carriers’. An analysis is made of the current services and it is shown that alliances and the recent round of airline failures have led to greater concentration on the major hubs. Aircraft and product developments are discussed. More non-stop destinations and higher frequencies are expected from the major European hubs to other world regions, coupled with increased non-European carrier service to second-tier cities in Europe. The scope for a long-haul low-cost airline is analysed and traditional operations are shown to be in a relatively stronger position.

INTRODUCTION

The changes taking place in the long-haul aviation arena have been somewhat neglected in recent years – the main focus of interest being competition from new entrant ‘low-cost’ carriers on short-haul routes. This paper aims to analyse the recent development of long-haul air services in

Europe and identify the key changes. Specific attention is then given to the impact of commercial factors (e.g. alliances, hubs) and technological issues (in the form of new aircraft types). Forecasts of long-haul traffic are discussed and the scope for low-cost airlines in the long-haul market is examined.

At the current time, long-haul scheduled air services carry about 1 million passengers per week out of Europe on approximately 5000 flights (the same numbers apply in the inbound direction). There remains a broadly equal split between European airlines and overseas carriers flying into Europe. In some cases this is necessitated by the bilateral air services agreements but even in the more competitive markets the market shares have not moved far out of balance. A wide variety of aircraft types are used, although the main range is from the Boeing 767 with around 200 seats up to the Boeing 747 with 400 seats.

Definitions

For the purposes of the analysis of air services in this paper, the study area for flights from Europe is taken to comprise the European Union (as at July 2004) plus the Canary Islands, Madeira, Azores, Switzerland, Norway and Iceland. The only significant additions outside this area in Geographical Europe would be Turkey and Russia west of the Urals. These have been omitted, along with other non-EU members in Eastern Europe, because although they have few long-haul flights to the Atlantic or Africa, they do have a large number of short routes that cross into Asian Russia and the Caucasus.

Long-haul is taken to be the Association of European Airlines (AEA) definition which includes from Europe all Atlantic services, sub-Saharan Africa, Asia and Australasia. It does not include North Africa or the Middle East which are classified as medium-haul.

Services are those which were listed to operate during the first week of July 2004 (1-7 July) in the OAG guide. Only non-stop scheduled services from Europe are included. This means that each service is only listed once, so for example, a flight that operates Copenhagen-London-Sao Paulo-Rio de Janeiro will only appear under London-Sao Paulo. A few services are omitted altogether because they stop in the medium-haul area (North Africa or Middle East) en-route or make a technical stop only (e.g. Frankfurt-Halifax-Orlando). Code-share flights are only counted once – under the European hub airline if they are the operator, as a code-shared flight of the European hub airline where they have a code-share but are non-operating and under the operating airline elsewhere. Alliance partner's flights are only counted with the European hub airline if they are code-shared (e.g. Delta flying Paris-Cincinnati is included under Air France while American flying London-Chicago is not included under BA). Charter services are not included in this analysis but are very small in comparison (less than 5% of the scheduled traffic).

THE MAJOR AIRLINES AND AIRPORTS

Although a wide range of airports can support a network of short-haul air services, long-haul activity is concentrated on a few major hubs. London Heathrow, Paris CDG, Frankfurt and Amsterdam account for 60% of the European long-haul flights with the remaining 40% being spread around forty-seven other airports.

Table 1 shows that London Heathrow is still the primary intercontinental gateway in terms of frequencies but Paris CDG and Frankfurt serve more destinations. Amsterdam is the fourth major centre. This is partly a result of some very high frequency routes from Heathrow, such as New York JFK (128 flights per week - 18 per day) and greater competition as Virgin Atlantic operate many sectors as well as British Airways (BA) and the foreign flag carrier. Many routes from Frankfurt, in contrast, are monopolies for Lufthansa. This is reflected in the last column of Table 1 which shows the percentage of flights by the hub airline or its code-share partners. Only 40% of long-haul flights at Heathrow carry the BA code, a much less dominant position than its rivals - more than two-thirds of long-haul services at Amsterdam and Frankfurt are related to KLM and Lufthansa respectively.

There is a clear drop after Amsterdam to a second tier of cities with around 30 long-haul destinations each. This includes Madrid, London Gatwick, Rome Fiumicino, Zurich, Milan Malpensa and Munich. The remaining airports have very limited long-haul coverage although some specialise in particular markets (e.g. South America from Lisbon and Africa from Brussels). There are many airports that have just one or two long distance routes: e.g. Cardiff-Toronto or Stuttgart-Atlanta.

A number of the middle-ranking airports tend to be hubs dominated by the local airline and their alliance partners (e.g. Zurich, Munich, Copenhagen). These are not key destinations for other foreign airlines coming into Europe, who favour the large origin/destination markets such as Rome and Manchester outside the four major hubs. London Gatwick's position has been

artificially protected by the Bermuda II air services agreement which means many US routes (e.g. Dallas Fort Worth, Minneapolis) cannot operate from Heathrow. With 'open skies' approaching from 2008, a number of airlines are planning to move long-haul services to Heathrow (Noakes, 2008) and Gatwick is likely to be left with only a handful of leisure routes. Regional airports have lost links in recent years to boost the flow through the hubs and it is the largest markets that have shown the most growth (Sweetman, 2004, p.30). Services such as Bordeaux-New York and Hamburg-Atlanta have disappeared, although Continental and Delta are now adding more direct service again from New York, using 757s to small European cities such as Bristol and Venice.

= Table 1 about here =

Table 2 shows that three divisions can be identified from the league table of European long-haul hub airlines. The four big ones with more than 40 departures per day are Air France at Paris CDG, Lufthansa at Frankfurt, BA at London Heathrow and KLM at Amsterdam. The second group of mid-size players with 10-20 departures per day includes Iberia at Madrid, Alitalia at Milan Malpensa and Rome FCO, Swiss at Zurich, Lufthansa's second hub at Munich, TAP at Lisbon and Austrian at Vienna.

The major hubs have strengthened their position in recent years as previously important rivals such as Swiss, Alitalia and Sabena/SN Brussels have lost ground. BA has transferred Gatwick flights to Heathrow and Air France has switched Orly flights to CDG. Alderighi and Cento (2004) consider the different reactions of airlines to the down-turn in demand post 9/11.

=Table 2 about here=

The mid-size players look to be the most exposed. Lufthansa's Munich hub is needed in the short term as an overflow to Frankfurt. Lufthansa also has an incentive to keep anyone else from developing the lucrative Munich market. Alitalia is making severe losses and has got into a messy split hub arrangement between Rome and the new Milan Malpensa airport. Restructuring will be necessary and this is likely to see an axe taken to many of these uncompetitive long-haul operations. Swissair used to be a major long-haul carrier. The problem for Swiss is that it is losing the critical mass required to stay in the game. Somewhat against the trend, Iberia and Austrian have both grown rapidly in the long-haul arena. Iberia has taken advantage of the new facilities at Madrid Airport and Spain's historic and linguistic links with Latin America to aim for dominance of this market from Europe (Buyck, 2004a). A strategy that seems to have been successful is Iberia pulling out altogether from the Far East where it was not very competitive and maintaining minimal services to Africa. The South Atlantic offers the potential of higher yields, especially to the dominant carrier and Iberia is now one of the most profitable European majors. Austrian's strategy is more difficult to fathom. It would appear that the airline has identified long-haul travel as a potentially profitable growth market and aimed to capture a larger slice. It has the advantage of an efficient hub but with Austria being a small origin/destination market it will inevitably suffer on yields as frequencies are no better than from the main hubs.

The airlines with few or no long-haul services have the opportunity to be niche players—Aer Lingus and LOT are good examples serving ethnic flows to North America—although others

such as Olympic and Malev may be better off exiting the long-haul sector altogether. SN Brussels may have the winning formula—not operating any long-haul routes of their own they wet-lease capacity from Birdy Airlines to maintain profitable links to Africa and retain a presence on the North Atlantic by code-sharing on flights of American. SN Brussels has returned to profitability as a drastically shrunken short-haul airline, in contrast to its erstwhile partner, Swiss, which is struggling in no-man's land.

Almost every European airline nowadays offers daily frequencies across their long-haul network. This is in marked contrast to 20 years ago when SAS flew 27 destinations with just 46 weekly frequencies. The major exceptions to this rule are SN Brussels with its African routes at sub-daily frequencies and the medium sized carriers such as Swiss and Alitalia who have a number of routes at 4 or 5 times per week, maintaining breadth of coverage ahead of density. Alitalia often operates a combined daily service from Milan Malpensa and Rome but uses the alternate hubs on different days of the week.

Code-sharing has become a crucial tactic to maintain coverage at the network level while controlling capacity and competition at the route level. Table 2 shows that British Airways have very few long-haul code-shares operated by other airlines (a mere 5% of their total long-haul flights). This is partly down to regulatory constraints but also because BA's oneworld alliance is less closely integrated than its rivals. Lufthansa in contrast has a third of its long-haul services from Frankfurt and Munich operated by partner airlines. The smaller hubs (e.g., Copenhagen, Lisbon, Dublin) tend to be dominated by the local airline as operating carrier, although some of these flights are still code-shared with overseas carriers.

Table 3 examines the long-haul passenger traffic of the European airlines (the last year the data was published in this format was 2002). Please note that these figures are for long-haul services only (not complete system traffic). The four largest carriers are once again immediately apparent. Virgin Atlantic is in fifth place, ahead of Iberia, Alitalia and Swiss. Overall, AEA airlines long-haul traffic fell by 5% from 2001 to 2002, several airlines recording major cutbacks (Alitalia, Swiss, Olympic, Icelandair and Spanair). The best growth figures were for SAS, Finnair and TAP. The airline bmi British Midland had newly entered the long-haul market with only two transatlantic routes. Load factors are healthy: an average of 79%. The problem however is that only 13% of these passengers were in the premium cabins (first and business class). Lufthansa stands out as having 20% premium traffic which should make a considerable difference to yields. There is some correlation between size of long-haul operation and proportion of premium traffic, suggesting that critical mass is necessary to attract the business passengers. The marginal players are mostly struggling to find 6 or 7% premium traffic. LOT Polish carry 97% of their passengers in economy class and bmi 96%—it is hardly worth the expense of offering business class at this level of take-up! Virgin Atlantic is much weaker on premium traffic than BA, suggesting scale of network is important. Some of the smaller airlines partially compensate with higher load factors: 87% on CSA, 86% on SAS and LOT Polish. BA's load factor is a relatively poor 75%. This may reflect higher yields and/or less use of hub feeder traffic to fill the aircraft.

=Table 3 about here=

RANGE OF SERVICES

5225 long-haul flights were identified departing from Europe during the first week of July 2004. This amounts to some 750 services per day, a formidable level of activity! Table 4 shows that 60% of these flights are accounted for by the top 20 destinations with the other 40% being spread over 158 points. The continued dominance of the North Atlantic is reflected in that 13 of the top 20 are in the USA or Canada. Bangkok and Tokyo are the most important otherwise. In the US market, there is a large fluid demand that can shift around between hubs depending on the supply of air services. The rest of the world tends to show more stable long-term trends.

=Table 4 about here=

Comparing with a study of the North Atlantic ten years ago (Dennis, 1994), it can be seen that the traditional gateways (major cities on the east and west coast such as Boston, Los Angeles and Miami) have lost ground while the beneficiaries have been hub airports near the east coast (Newark, Atlanta, Washington Dulles and Philadelphia) –Table 5. Newark’s expansion has come largely at the expense of JFK as both can serve the large local market in New York but Newark offers the better onward connections. This has not been enough to displace JFK from first position however, although the gap has narrowed considerably. Twenty years ago, more than half the total Europe-US traffic passed through New York JFK although this airport mirrored the decline of Pan Am and TWA before the latest round of re-organisation. The larger European airlines serve both Newark and JFK at least daily. The US carriers have polarised: American and

Delta from JFK (United having now more or less given up on this market); Continental from Newark. The smaller European airlines have several strategies: moved entirely to Newark (e.g. SAS, TAP), remaining at JFK (e.g. Aer Lingus, Austrian) and a muddled operation (e.g. LOT whose flight goes to different New York airports depending on the day of the week!). Domestic connections are more limited at JFK with non-aligned low-cost start-up Jet Blue being the major operator.

=Table 5 about here=

The four major European long-haul operators (BA, Air France, Lufthansa and KLM) serve all 10 destinations in the above list, with the exception only of Philadelphia (no KLM) and Detroit (no Air France). A medium sized European airline such as Swiss or Alitalia will serve most of the top 10 destinations. The smaller European flag carriers typically serve New York and one or two others chosen for their geography, ethnic links, alliance partnership or competitive position. In Canada, Toronto is in the networks of all the major airlines and Montreal is a favourite of the smaller ones (e.g. Olympic, Austrian, CSA) perhaps due to its importance as an international centre.

Impact of Alliances

Alliance development has rationalised long-haul networks in favour of more frequencies and capacity on sectors between key alliance hubs in different regions of the world while eliminating

thin routes served at low frequency or with multiple stops. These are instead offered via a hub connection, which typically provides better journey times and frequencies while losing the convenience of a through plane service. The European major airlines have all adopted this pattern of service. There are however two major exceptions to this rule. The first is where cargo traffic is important – this does not require the daily frequency sought by business passengers and airlines such as KLM maintain some low frequency operations with Boeing 747s to meet the need of this market (e.g. Amsterdam-Paramaribo in Suriname). The second is services geared around ‘visiting friends and relatives’ traffic, typically to locations with specific ethnic links. For example, regional airports in the UK to Canada by Air Transat. PIA fly a large number of European cities at low frequency from Islamabad, Lahore and Karachi. In some cases PIA is the only long-haul service (e.g. Oslo). There are also routes oriented around the holiday market that would have formerly operated as charters. These particularly focus on the Caribbean and Florida.

An example of alliance concentration is that KLM and Northwest have dropped services such as Detroit-Milan, Minneapolis-Frankfurt and Amsterdam-Orlando in favour of forcing more people onto the trunk hub-hub corridor from Amsterdam-Detroit. Morrish and Hamilton (2002) found that alliances improve load factors and productivity but most of this is fed back to the consumer through fare reductions – as long as the market remains competitive.

There is a belief in the industry – or at least in the financial markets! – that there are too many international airlines and what is needed to restore the industry to health is a rash of mergers followed by drastic rationalisation. This is a somewhat simplistic analysis as the track-record of airline mergers has been very variable. Some, such as USAir-Piedmont have actually served to

destroy two perfectly viable airlines! After many years of failed attempts at international mergers (SAS-British Caledonian, Alcazar, BA-KLM-Sabena, Air France-Sabena, Swissair-Sabena, BA-KLM, KLM-Alitalia...) the first big move in Europe came with Air France and KLM merging under one holding company in 2004. The repercussions of this will be felt widely. In one swoop, four potential global alliances have been reduced to three (Buyck, 2004b). Europe's two major hubs with spare capacity are now under the same control. The expectation in some quarters was that Air France would effectively close KLM down (despite short term commitments to maintain both hub networks). However, who would be the beneficiaries of this? At least part of the spoils would go to BA and Lufthansa. There is still a shortage of hub capacity in northern Europe. Analysis by Veldhuis (2004) suggests that Amsterdam may be the more defensible location than Paris, precisely because it is a smaller origin/destination market. It is quite likely that Air France and KLM will continue their separate lines of development – in which case why merge at all as the limited synergies could be realised through a much looser alliance agreement? Certainly, BA has looked at other airlines which offer some complementarity (including Swiss) and walked away.

Where the alliance impact has been more severely felt is at the junior partners' base airports. Whereas KLM is large enough to hold its own against Air France, SAS has fallen away as a long-haul operator in favour of feeding Lufthansa. Alitalia could see a similar relationship develop with Air France while Eastern European airlines are being rapidly signed up for alliance membership before they obtain any serious long-haul aspirations!

Changes in Traffic and Yields

Table 6 shows the development in total long-haul passenger traffic of the AEA airlines, load factors and passenger yields in real terms (after adjusting for exchange rate fluctuations and inflation). These are not perfectly comparable as AEA membership and reporting has varied over this time period. They do however enable some broad trends to be identified. Long-haul traffic has doubled in the last ten years, a very significant growth despite the current doldrums. Load factors have improved by 10 percentage points: we are all travelling in more crowded planes! Whereas in 1991, 1 out of 3 seats was empty it is now only 1 out of 5. This can possibly still creep a little higher but the realistic maximum for a year-round scheduled operation, with availability of seats on demand (albeit at a price!) is probably around 85%. The average cost of long-haul travel to the passenger has fallen by about 30% since 1991. This overall trend conceals an increase in yields in 2000 and 2001, which has collapsed in the last two years. The strategy seems to be 'pile it high and sell it cheap'! It is only in August 2004 that fare increases (other than fuel surcharges) are being mooted once again. KLM claimed that higher demand and strong forward bookings meant it could raise prices from Tuesday August 17th by between 1% and 3% (Milner, 2004) - the first substantive increase since September 11th 2001!

=Table 6 about here=

Growth Forecasts

Table 7 shows that Europe-North America is by far the dominant long-haul market from Europe at the current time, accounting for almost half the total passenger kilometres in 2003. Europe-Africa is in second place overall although these other parts of the world show considerable variation by European market: Africa is very important from France, for example, Southwest Asia from the UK, Central and South America from Spain. Southeast Asia and Northeast Asia traffic is fairly evenly distributed.

Looking ahead to 2023, the growth rates are expected to be higher in some of the other markets than the North Atlantic but the differentials are not sufficient to change the ordering by much. Most long-haul markets are forecast by Boeing to grow at 5-6% per annum with the highest growth in Europe-China (7.4%) and the lowest in Europe-Central America (4.6%).

=Table 7 about here=

AIRCRAFT SIZE AND TYPE DEVELOPMENTS

The Boeing 747 (with around 400 seats) dominated long-haul operations in the 1970s and 1980s. In 1985, 62% of North Atlantic services were flown with the 747 and its market share was even higher in Europe-Asia (Dennis, 1994). The advent of the first long-range twin jets such as the Boeing 767 led to frequency being substituted for capacity on the more competitive passenger markets such as the North Atlantic. Where bilateral restrictions limited frequency, airport slots were in short supply or there was substantial cargo traffic, the Boeing 747 remained dominant however. Some airlines (e.g., KLM, Air France, Lufthansa) operate Combi 747s which reduce

passenger capacity to 250 seats with main deck cargo space. KLM reconfigures some of these aircraft for the summer season when passenger demand is stronger (freight demand is counter-seasonal, peaking in November-December).

In the last five years, the new generation of long-haul aircraft—Boeing 777, Airbus A330 and A340—have acquired an increasing role. They have almost eliminated the remaining tri-jets (L1011, DC10 and MD11) on a one-for-one basis as all fall within the 250-300 seat bracket. In a few cases they have been used to upgrade services developed with the 767 or A310 as demand grows. They have also perhaps more surprisingly been used as 747 replacements (e.g., by British Airways who has raided slots at Heathrow from short-haul services and by buying on the grey market), enabling further frequency increases. Table 8 shows the long-haul fleets of the European major airlines and some contrasting carriers from other parts of the world.

US carriers have almost abandoned the 747 although Asian operators such as JAL, Singapore, Air India and Cathay Pacific are still wedded to the type. In Europe the large majors plus Virgin Atlantic continue with some 747s, while the smaller long-haul operators generally favour lower capacity aircraft.

=Table 8 about here=

Table 9 takes the example of the London-New York route. In 1990, the 747 operated more than three in four services (excluding Concorde). By 2004, the 777 has become the most prolific type, although BA and Virgin Atlantic are still dominated by 747s.

The latest development is the use of narrow-bodied aircraft such as the Boeing 757 to maintain frequency on thin intercontinental routes up to about 4200 miles. This is the first time since the days of the Boeing 707 that a 150 seat aircraft has been operated long-haul on a significant scale. A number of airlines found their 757s to be too large for the short-haul market after low-cost carriers had eaten into the traffic base. The Boeing 757 had been used in the past by charter operators on the North Atlantic and it is the US airlines who have adopted it most enthusiastically today. Many of Continental's new services depend upon 757s (e.g., Newark-Edinburgh, Cleveland-Gatwick). Newark-Gatwick has been increased from two daily flights to three but one 777 has been replaced with two 757s; it appears from a cursory look at pricing that Continental is able to reduce availability of the lowest yielding fares on the smaller aircraft. American has started Boston-Manchester with a 757 and Iberia uses it on routes from Europe to Africa such as Madrid-Lagos. The downside of the aircraft is that it has only a single aisle with 3 seats either side. This creates a rather cramped impression and makes it more difficult for passengers to move around the cabin.

=Table 9 about here=

A niche has also been carved out for small narrow-body aircraft such as the A319 and Boeing Business Jet—a long-range derivative of the 737 (Aviation Strategy, 2003). Lufthansa converted non-hub services from Dusseldorf to Chicago and Newark and have since added Munich to Newark. The rationale for Lufthansa is that it can capture the premium market and encourage some passengers to trade up from economy to business class if it is the only direct flight

available. The lower yielding economy passengers will have to travel one-stop and some of these may be lost to rival hubs such as Amsterdam - but this traffic is of little value. Air France have adopted a different strategy, using A319-100ERs to add new business class only services to their Paris CDG hub. These feature obscure destinations (e.g. Pointe Noire in the Congo and Tashkent in Uzbekistan) where there is a market in the oil or construction industries willing to pay a substantial premium for a convenient and reliable flight. It is necessary to garner passengers from all over Europe to produce a sufficient load, hence the importance of feeder traffic from the Air France network at CDG. The airline bmi British Midland has expressed an interest in operating long-haul services from Manchester using an A319LR (Kingsley Jones, 2004). This envisages a conventional two-class cabin, as there is insufficient premium traffic on these regional routes.

Airbus and Boeing have divergent views on the future development of the long-haul market. Airbus believes economies of density will be most important and coupled with airline alliances this will reinforce the major hubs. Hence the need for the A380, especially as these airports become progressively more slot constrained (Sweetman, 2004). Boeing believe that frequency and dispersion will be the key drivers with more new non-stop services, hence the demand for the Boeing 787 (Pilling, 2004). It is important to note however that many of the new routes the 787 is likely to be used on will still involve a major hub at one end or the other. There is much less scope for pure point-to-point flying in the long-haul arena. Boeing's approach partly reflects the US perspective - where frequency is king, cargo is less important and few airports have capacity constraints versus the European or Asian situation. Boeing was probably also anxious not to lose its large 767 customer base to the mid-range Airbus models although in practice the

787 has attracted orders from a much wider background.

There has been less take-up than expected for ultra long-haul non-stop services that have become possible with new generation aircraft such as the A340-500 (Thomas, 2005a). Most of the potential markets are between Asia and North America. Thai International has withdrawn some routes after only a few months, claiming that high fuel prices made them unviable (as they carry a weight penalty in the quantity of fuel as well as the need for extra crew). From Europe it is only Chile (from Northern Europe) and Australasia that were beyond the reach of conventional aircraft. London-Perth non-stop becomes possible with the A340-500 (Flanagan, 2004). A high volume of business passengers appears critical to support the higher cost levels of these services, which is why Singapore Airlines has adopted a low-density layout with large numbers of premium seats. Passengers are also likely to be less enthusiastic about being cooped up in an economy class seat for 16 hours at a stretch.

The A380 presence is likely to be greatest on routes between Asia and Europe as these are already the preserve of the Boeing 747. Slot constraints and strong traffic levels at London Heathrow mean that most of the Asian and Middle Eastern operators will fly the new aircraft here, while there are a number of services where two smaller aircraft of the same airline, scheduled in close proximity due to time window limitations, could be combined onto one A380. Emirates has more than 40 A380s on order which suggests that Dubai is going to become a much larger hub (Pinkham, 2003) and this will cause anxiety to every other airline flying between Europe and the Far East.

The North Atlantic has few Boeing 747s in service at the moment and hence is likely to be a lower priority candidate for A380s but Lufthansa and Air France may use them on hub to hub routes within their respective alliances (e.g. Frankfurt-Chicago). There could be some fifth freedom services by carriers such as Singapore Airlines. Airbus forecast that there will be 96 A380 aircraft operating to or from London Heathrow by 2019, making it the second busiest A380 node after Tokyo Narita (Murray, 2000) - even though British Airways has not so far ordered the aircraft.

Cabin Services

The on-board product offered on long-haul routes has tended to move in circles. For many years in the regulated days of air transport up to around 1980, there were two simple options, economy (coach) and first class. Economy passengers paid for entertainment and alcoholic drinks. In the 1980s, airlines offered a segregated cabin for full-fare economy class travellers which subsequently became business or 'club' class with better seats than economy and upgraded first class to sleeper seats. Economy class passengers gained free drinks and films on most international airlines. In the 1990s, further improvements to business class (albeit at escalating prices) led some airlines such as Virgin, Delta, KLM and Northwest to abandon first class and offer only a choice of premium business class or economy. Others such as BA, American and Air France continued with three cabins. It is often business class which is the most profitable however as costs from running a separate first class cabin escalate more rapidly than revenues, especially if load factors are poor (Lobbenberg and Clapham, 2000). In the last few years, the huge gulf in comfort and price between economy and business class has led to some airlines (e.g.

BA, Virgin) introducing an intermediate cabin (i.e. premium economy, world traveller plus) – once again aimed at full fare economy class travellers!

Economy class is the dominant and growing sector of the market yet few carriers appear to have a strategy for this other than by competing on price or network connections. American aimed to gain an advantage in 2000-01 by removing seats to improve seat pitch in economy from 31” to 34” and compensate for this with higher load factors. Other airlines such as Continental claimed that passengers valued empty middle seats more highly. American started back-tracking once it became apparent that economy class passengers were not sophisticated enough to make this a key choice criteria – cutting a few dollars off the price was more effective! The US carriers have now started cutting back on frills, with alcoholic drinks chargeable in economy class in some cases. BA has axed first class on routes with a poor take-up e.g. London-Montreal, London-Tampa, Manchester-New York. American has introduced an all-economy cabin on its new Boston-Manchester route, flown with a 757 although this is not ‘no-frills’ (Noakes, 2004a). Looking ahead, it seems likely that first class will disappear from all but a handful of routes catering for the hyper-elite at a very high price, as the new improved business classes offer a very similar experience. On business oriented routes, a premium economy type product is needed to coax extra revenue from frequent business travellers whose company travel policy does not allow club class travel and also satisfying people who paid significantly more than the cheapest excursion fare with something better than a random seat in economy class on long journeys. If every airline starts offering this product however, it neutralises any competitive advantage and may be seen as simply an extra cost burden. Economy class is unlikely to move to ‘no-frills’ in the way it is going in the short-haul markets but airlines have little incentive to upgrade this

cabin – most passengers here buy solely on price and don't stop to think what they are getting for it!

SCOPE FOR LOW-COST LONG-HAUL AIRLINES

Although low-cost carriers (LCCs) such as Ryanair, easyJet, Southwest and Jet Blue have been making a major impact in the short-haul market, these are all based around A320 and 737 type aircraft with a maximum range in normal service of 5 hours. There are few examples to date of long-haul low-cost operations although Michael O'Leary (Ryanair CEO) has announced plans to enter this arena following the Transatlantic 'open skies' agreement (Aviation Strategy, 2007a). Many other long-haul markets are still tightly regulated by bilateral agreements however and it may be impossible to obtain the necessary route licences.

It is difficult to obtain such dramatic cost advantages in the long-haul market for a number of reasons (Francis et al, 2007; Thomas, 2005b).

Whereas passengers might be happy enough with a high density seating configuration between London and Dublin or New York and Orlando this is not true on long-haul routes. A significant sector of the market is willing to pay many thousands of pounds for the lie-flat beds at the front of the aircraft, which makes it possible to offer economy class seating on a marginal cost basis to fill up the back of the plane. Stripping out the First or Business Class and going all economy may actually increase the revenue required from each economy class seat. Although 29 inch seat pitch is satisfactory on flights of 1-2 hours it is difficult to reduce it below the 31-32 inches offered by

the existing operators on long-haul journeys. 'Frills' also become relatively more important, the longer the flight. Food must be offered, even if passengers pay for it but this still takes up galley space and requires time to clean and cater the aircraft. The number of toilets cannot be reduced on longer flights while in-flight entertainment is also more valued but this adds weight and complexity to the aircraft. Other Ryanair innovations such as non-allocated seating, non-reclining seats and an absence of window shades are also likely to be unacceptable. Large amounts of checked baggage will still need to be carried on long-haul flights - another service the LCCs have tried to minimise.

Whereas in the short-haul markets, LCCs have been able to raise aircraft utilisation dramatically, there is little scope for this in long-haul operations (Table 10). Aircraft are already flying all-day and all-night and airport turn-arounds are a small part of the total activity. It is impossible to avoid the costs of putting crew up away from home. Although the number of cabin crew could be reduced to the safety minimum, wage rates are likely to be similar - the major carriers often have standardised rates across their fleet which makes them particularly uncompetitive on short-haul routes.

Hubs are still essential in the long-haul market. Demand is scattered over a wide range of origins and destinations and there are few dense point-to-point routes except from London (where Virgin Atlantic already flies) or New York. The secondary airport strategy favoured by Ryanair is less effective because fewer airports can handle widebodied aircraft and the cost and time saving from using remote airports becomes trivial on a long distance journey. Cargo presents something of a dilemma. It is an important revenue earner for intercontinental airlines but it creates

handling complications and slows down turn-arounds in a way that the LCCs have been anxious to avoid.

Seasonality is another problem. While it is possible to undercut the major carriers in the summer season and still be profitable, this is almost impossible to maintain through the thin winter months when both demand and fare levels plummet. Thus unless a complementary market can be found to utilise the aircraft in winter this is a major barrier to entry. Canadian operator Air Transat has existed as a budget carrier (with 9 across seating instead of the normal 8 on the A310) on the North Atlantic in Summer with aircraft being redeployed to the Canada-Caribbean/Florida markets during the winter season.

Calculations (Francis et al, 2007, p. 395) indicate that a no-frills long-haul operation might be able to reduce the ticket price by about 20% on the cheapest economy fare but for a much inferior quality of service. This is much less than the 40-50% differential obtained in the short-haul market and is relatively easy for the established airlines to attack by cutting their fares slightly.

New long-haul start ups such as Oasis have therefore included business class as a vital part of their strategy while the airline which eventually became MaxJet was initially mooted as an all-economy no-frills operation (Aviation Strategy, 2007b) but greater scope for undercutting the existing operators was identified with the all-business class model. Although new start-ups with a discount fares proposition may struggle to be profitable themselves, they can still impact on the existing major airlines in the one remaining lucrative sector of their business. It may also be

necessary to look in a different direction for the biggest threat to the traditional carriers. Emirates with its large number of aircraft on order, high density seating layouts, high load factors, low labour costs and a favourable tax regime may be the biggest threat to the established players in the near future.

CONCLUSIONS

After several difficult years when long-haul air traffic fell below the levels achieved in 2000, 2004-2006 provided some sort of return to normality on the demand side—although airline cost levels and hence profitability have been seriously pressured by high fuel prices.

Whereas a large number of airlines are likely to maintain short-haul networks in Europe, long-haul travel will be concentrated in the hands of a few key players. There are significant barriers to entry in the long-haul market, resulting from the dispersed distribution of demand, alliances and frequent flier programmes, slot constraints at major airports and the sheer cost and risk involved in building up critical mass. Virgin Atlantic and Emirates have been the only two significant long-haul new entrants in the last 20 years. Several European airlines have already abandoned the effort to be major long-haul players (e.g., SN Brussels, SAS, Olympic) and settled for a niche or feeder role. Others such as Swiss and Alitalia may have to do likewise if they are to survive in the longer term. The dilemma is that if long-haul services can be returned to profitability, they offer the traditional airlines the opportunity to participate in a more stable and less competitive sector of the market. In many respects, it all comes down to hubs and the changes being wrought on the industry by the low-cost carriers. As explained above, it is

difficult for low-cost airlines to enter the long-haul market but there are bound to be some attempts, even if most ultimately end in failure.

The perhaps greater problem is that the low-cost airlines are likely to capture between 30 to 50% of the short-haul market for travel within Europe over the next few years. Although some of this is new growth, it is undermining the viability of the short-haul networks of the traditional carriers through reduced traffic volumes and/or yields. Yet the short-haul networks are essential to feed the long-haul networks. Only London is a large enough traffic generator in Europe to support a wide range of long-haul services without much feeder traffic. British Airways and Virgin Atlantic are therefore in a relatively good position. Elsewhere it is a case of the strong get stronger and the weak get weaker. Air France at Paris CDG and Lufthansa at Frankfurt have the critical mass to survive as both short-haul and long-haul network carriers, almost regardless of any low-cost onslaught. KLM stands a good chance if overall market conditions improve but in the event of another downturn the temptation for the merged airline will be to concentrate on Paris. The rest are very exposed. To maintain long-haul services elsewhere in Europe, it is necessary to either have a strong hub to provide the short-haul feed (the strategy of Austrian, for example, which may work but even if they can they fend off the low-cost airlines, the gap in scale between them and nearby Lufthansa still leaves a competitive disadvantage) or to have a niche ethnic market that is loyal, does not require much feeder traffic and is difficult for other airlines to tap. Examples of the latter would be Iberia with its Latin American services or Aer Lingus flying to the US. These both have a geographical advantage in that other hubs require back-tracking.

The foreign airlines flying into Europe are likely to rationalise their coverage in favour of the key locations within alliance partnerships. The US carriers have already done this; for example Northwest only flies two A330s a day to London but a dozen to Amsterdam. With its large aircraft orders and strong financial backing, Emirates must be viewed as a serious challenger in the Europe-Asia and Europe-Africa markets. Once again this depends on a strong hub and we are likely to see secondary European cities own long-haul networks being displaced by a few links to key hubs outside the region: Chicago and Newark being other such examples.

Change is not therefore complete and there are other variables that could impact on the final picture. If Heathrow and Frankfurt are successful in obtaining new runways, that will make the going harder for everyone else. If no new runways are built, there will be an overflow that will trickle down to the next tier of hubs. Some things are certain however: ruthless attention to cost levels coupled with astute commercial planning will be necessary to ensure success in this challenging business environment.

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Table 1. Long-haul services (all carriers) by European airport – July 2004

<i>Airport</i>	<i>Non-stop destinations</i>	<i>Weekly frequencies</i>	<i>% hub airline or code-share</i>
London Heathrow	71	1125	40
Paris CDG	78	806	62
Frankfurt	81	671	69
Amsterdam	60	480	67
Madrid	30	276	54
London Gatwick	32	244	21
Rome Fiumicino	34	165	44
Zurich	25	164	70
Milan Malpensa	35	153	75
Munich	33	136	76
Manchester	18	108	19
Paris Orly	11	107	41
Lisbon	15	98	77
Vienna	14	74	96
Brussels	15	67	48
Copenhagen	11	66	83
Shannon	8	49	51
Dublin	7	40	55
Helsinki	7	35	100
Glasgow	6	33	21
31 Others		328	
TOTAL		5225	

Source: Compiled from OAG data

Table 2. Long-haul service by European airlines from their hub airports – July 2004

<i>European Airline</i>	<i>Non-stop destinations^a</i>	<i>Weekly frequencies^a</i>	<i>% non-operated codeshare</i>
Air France (Paris CDG)	65	503	18
Lufthansa (Frankfurt)	43	462	31
BA (London Heathrow)	46	445	5
KLM (Amsterdam)	42	321	25
Iberia (Madrid)	20	150	14
Alitalia (Milan MXP)	17	115	20
Swiss (Zurich)	18	115	24
Lufthansa (Munich)	18	103	35
TAP (Lisbon)	14	75	8
Alitalia (Rome FCO)	13	72	42
Austrian (Vienna)	14	71	28
SAS (Copenhagen)	8	55	0
BA (London Gatwick)	8	51	0
Air France (Paris Orly)	4	44	0
Finnair (Helsinki)	7	35	0
SN Brussels (Brussels)	10	32	100
Icelandair (Reykjavik)	5	30	0
Aer Lingus (Shannon)	4	25	0
LOT (Warsaw)	4	24	0
Aer Lingus (Dublin)	4	22	0

^a Including code-shares

Source: Compiled from OAG data

Table 3. European airlines' long-haul traffic 2002

<i>Airline^a</i>	<i>Revenue Passenger Km (billion)</i>	<i>% change from 2001</i>	<i>Passenger load factor %</i>	<i>% of passengers in premium cabins</i>
Brit Airways	76	-4	75	15
Air France	73	4	81	14
Lufthansa	66	3	83	20
KLM	45	-2	82	10
Virgin Atlantic	27	-3	81	7
Iberia	22	0	77	11
Alitalia	14	-27	78	9
Swiss	13	-39	80	16
SAS	10	22	86	13
Austrian	9	-5	78	7
TAP	6	13	75	9
Finnair	3	25	81	7
LOT	3	1	86	3
Olympic	3	-18	76	9
Icelandair	1	-22	75	8
Bmi	1	94	66	4
CSA	1	4	87	8
SN Brussels	1	Na	53	9
Malev	1	-8	72	6
Spanair	>0.5 ^b	-89	55	6
AEA total ^c	382	-5	79	13

^aAer Lingus data not available

^b less than 500 million

^c includes Tarom and Turkish

Source: AEA

Table 4. Top 20 long-haul destinations from Europe by number of flights

<i>Destination</i>	<i>Flights in first week of July 2004</i>
New York JFK	463
New York Newark	277
Chicago O'Hare	262
Toronto	207
Atlanta	168
Washington Dulles	168
Bangkok	161
Tokyo Narita	160
Boston	138
Singapore	136
Los Angeles	125
Philadelphia	112
Montreal Dorval	104
Sao Paulo	104
Hong Kong	100
Miami	95
Johannesburg	90
Beijing	89
San Francisco	77
Detroit	70
158 Others	2119
TOTAL	5225

Source: Compiled from OAG data

Table 5. US transatlantic gateways

<i>US Gateway from Europe</i>	<i>Rank in 2004</i>	<i>Rank in 1994</i>
New York JFK	1	1
New York Newark	2	5
Chicago O'Hare	3	2
Atlanta	4	7
Washington Dulles	5	8
Boston	6	4
Los Angeles	7	3
Philadelphia ^a	8	
Miami	9	6
San Francisco	10	10

^a not in top 10 in 1994

Source: Compiled from OAG and US Department of Transportation data

Table 6. European airlines' long-haul traffic and yields 1991-2002

<i>Year</i>	<i>Revenue Passenger Km (billion)</i>	<i>Passenger load factor %</i>	<i>Passenger yield US ¢ per RPK In real terms</i>
1991	182	68	6.74
1992	207	70	5.88
1993	224	70	6.19
1994	244	73	5.92
1995	270	74	5.61
1996	293	75	5.40
1997	322	77	5.39
1998	345	76	5.11
1999	373	75	4.86
2000	399	78	5.03
2001	402	76	5.24
2002	382	79	4.86

RPK Revenue Passenger Km

Source: AEA

Table 7. Boeing traffic forecasts 2003-2023

<i>Regional Flow^a</i>	<i>2003 Thousand Billion RPK</i>	<i>2023 Thousand Billion RPK</i>	<i>Average annual % growth</i>
Europe-North America	348	903	4.9
Europe-Africa	99	269	5.1
Europe-Southeast Asia	95	253	5.0
Europe-Central America	73	177	4.6
Europe-South America	49	171	6.4
Europe-Northeast Asia	48	175	6.7
Europe-China	34	143	7.4
Europe-Southwest Asia	29	95	6.0

RPK Revenue Passenger Kilometres

^aEurope-Oceania data was not available

Source: Boeing Current Market Outlook

Table 8. Principal long-haul fleets (excluding pure freighters) - 2004

<i>Airline</i>	<i>B747</i>	<i>MD11</i>	<i>A340</i>	<i>A330</i>	<i>A310</i>	<i>B777</i>	<i>B767</i>
British Airways	57					43	20
Air France	24		22	11		24	
Lufthansa	30		37	6	2		
KLM	22	10				5	12
Swiss		4	7	9			
Alitalia						9	12
Austrian			4	4		3	5
Iberia	6		21				
TAP			4		6		
SAS			7	4			9
Virgin Atlantic	15		15				
American						45	73
Delta						8	118
Singapore	30		3			52	
JAL	53	3				19	29

Source: Flight World Airline Directory 2004

Table 9. London-New York services by aircraft type

<i>Airline</i>	<i>1990</i>	<i>2004</i>
TWA	14x747, 14xL10	
Pan Am	21x747	
American		41x777
United		7x777, 7x767
Continental	7x747	14x777
British Airways	21x747, 14xSSC, 14xL10	42x747, 26x777
Virgin Atlantic	18x747	21x747, 14x340
Air India	7x747	7x747
Kuwait Airways	3x747	3x777
El Al	3x747	
TOTAL	94x747, 28xL10, 14xSSC	70x747, 91x777, 14x340, 7x767

Source: Compiled from OAG data

Table 10. Utilisation of short-haul and long-haul aircraft

Airline	Boeing 737-300 daily utilisation hours	Europe passenger load factor %	Boeing 747-400 daily utilisation hours	Long-haul passenger load factor %
Air France	7.6 ^a	65	14.1	81
British Airways	7.6	62	12.0	75
British Midland	6.5	60		
KLM	7.1	71	15.0	82
Lufthansa	7.1	62	15.3	83
Virgin Atlantic easyJet	11.0	81	14.6	81
Go	9.4	75		
Ryanair	8.8 ^b	74		

^a A320

^b B737-800

Source: Compiled from IATA, AEA and CAA Statistics