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**THE TRANSFERABILITY OF THE LOW-COST MODEL TO
LONG-HAUL AIRLINE OPERATIONS**

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Abstract

Since their emergence in the US in the mid 1970's there has been significant growth in the low-cost airline sector but with a few notable exceptions low-cost airlines have operated on short-haul routes. This paper examines the extent to which the low-cost model is, or could be, applicable to long-haul operations and whether the recent emergence of long-haul low-cost carriers is a sustainable phenomenon. The authors explore the extent to which elements of the so-called low-cost model might be transferable to long-haul operations. The paper seeks to quantify the potential cost differentials that might be achievable on a long-haul 'no-frills' service. The paper also speculates as to the development and sustainability of the low-cost long-haul operations.

Key words: Long-Haul Low-cost carriers, Airlines

1. Introduction

The low-cost airline revolution has been dramatic (Campbell and Kingsley Jones, 2002) but has so far been largely confined to the short-haul market. There are a number of reasons why it is more difficult to translate the low-cost formula into the long-haul market, although there have been attempts, most notably by Freddie Laker's Skytrain, operating across the North Atlantic, some twenty five years ago. More recently however there have been a growing number of new lower cost entrants on long-haul routes. The aim of this paper is to examine the issues raised with respect to the development of long-haul low-cost and to assess the sustainability of such operations. Through an assessment as to whether the low-cost business model is feasible for long-haul routes namely, which elements of the model are transferable to long-haul operations, whether there is sufficient demand for so called basic "no frills" services on long-haul routes and what competitors' responses may be.

In terms of research methods, in addition to a review of the history and development of low-cost operators the paper undertakes an analysis of the potential cost differentials that may be achievable by low-cost long-haul airlines. The authors provide a framework for analysing the applicability of cost efficiencies to long-haul operations. A quantification of the savings that may be achievable has been made drawing on statistical sources comprising IATA, AEA and the Civil Aviation Authority Financial statistics. Secondary sources of information for this paper have been gathered from a review of current academic literature and information gleaned from published industry sources.

2. Adapting the Low-cost Model for Long-Haul Operations

Central to the low-cost model is the strategy for the airline to be able to compete on price having achieved cost advantages relative to their competitors. Porter (1985) identified three generic strategies to achieve competitive advantage cost leadership, product differentiation, and market segmentation (or focus). The low-cost airline model is in essence an attempt to achieve cost leadership (although some low-cost airlines additionally attempt to differentiate their services and focus on particular sectors). Langfield-Smith (1997) stated that cost advantages can be achieved in a number of ways. The low-cost airline model is closely associated with the so called 'Southwest Model' (Doganis, 2001; Francis *et al*, 2006) in the US. The 'Southwest Model' has been further developed by other Low-cost Carriers (LCC's) (Barrett, 2004; Francis *et al*, 2005). Whilst not all aspects of this model are transferable to long-haul operations there are a number which are. It should also be noted that a cost leadership strategy applied to long-haul routes is not necessarily dependent on achieving all the cost efficiencies in the same way as Southwest or other short-haul low-cost carriers.

Low-cost airlines have been predominantly short-haul operations, partly because of the regulatory context on long-haul services and partly because some facets associated with low-cost operations have been seen as less compatible with long-haul flights such as the need for food, seat pitch and in-flight entertainment. According to Williams *et al* (2003) shorter routes offer greatest potential to achieve cost competitiveness over the network carriers. Table 1 considers the applicability of particular cost efficiencies achieved by short-haul operators as part of a cost leadership strategy applied to long-haul operations.

When considering the transferability between short and long-haul it is helpful to consider a definition of long-haul. The Association of European Airlines (AEA) (2004) provides a definition of short, medium and long-haul. Europe-Middle East and North Africa is medium-haul whilst anything transatlantic is long-haul. Hence the cut between medium and long-haul is around 6 hours flying time, roughly equivalent to the range of unadapted short-haul aircraft such as the Airbus A320. The Sahara Desert and the Atlantic Ocean form natural clear cut dividers when travelling from Europe. There is already evidence of a longer distance low-cost model with Southwest and JetBlue flying transcontinental routes in the US of 4-6 hours flight time (Flint, 2003). This is only medium-haul by international standards however and still uses Boeing 737 or Airbus A320 equipment.

INSERT TABLE 1 AROUND HERE

Traditional airlines in general already obtain low seat mile costs and hence offer competitive fares on long-haul services. For example, Virgin Atlantic's seat mile cost is 43% lower than easyJet's, although admittedly on a much longer average stage length (Civil Aviation Authority, 2005). In long-haul markets there also remains a significant demand from those willing to pay a premium price for sleeper seats and other comforts. With passengers at the front of the cabin paying many thousands of pounds for their ticket, the marginal cost of supplying the economy class seats at the back of a mixed configuration aircraft falls considerably. By filling the aircraft with economy class it would be difficult to do better than this, especially as seat pitch on long-haul cannot be realistically reduced below the 31" provided by the major

airlines. On some aircraft types it is possible to squeeze an extra seat across the cabin (e.g. 8 abreast instead of 7 on the Boeing 767, 10 instead of 9 on the Boeing 777 or MD11).

It is difficult for low-cost airlines to match the utilisation improvements that have been achieved on long-haul routes as long-haul aircraft are already flying 15-16 hours a day with carriers such as KLM and Lufthansa, many sectors being overnight (Table 2). 'Time window' constraints and maintenance requirements make it impractical to squeeze out much more than this. In the short-haul markets, LCC's were able to raise load factors from the 60-70% achieved by traditional airlines up to around 80%. Load factors are already much higher for long-haul airlines however, with most major European airlines exceeding 80%. A long-haul low-cost operator therefore has limited scope for improvement.

INSERT TABLE 2 AROUND HERE

It is also difficult to eliminate 'frills' altogether. The longer the sector the more frills required. Some form of catering service is required on flights of 8 to 10 hours – even if paid for 'on demand', the costs of the galley space and the complications of loading catering and cleaning the aircraft remain. Seats must be allocated as families are unwilling to be split up for that length of journey. In-flight entertainment is also more important on long-haul than short-haul (a major selling point of Virgin and Emirates, for example) and the number of toilets realistically cannot be reduced from the major carriers' provision (as has been done on short-haul routes). Large amounts of checked baggage must still be handled. Civair was a South African airline that planned to fly Cape Town-Stansted starting in October 2004. Economy return fares were to start at

£420 and would not have included food, drink or headsets (Noakes, 2004). This was about the same price as indirect flights on KLM and £150 less than the direct operators from Heathrow. The service never started operation.

e ticketing and e marketing are innovations which are extensively used by short-haul LCC's and clearly this is an area that can be applied to long-haul operations also. IATA has set the objective of all carriers in the world adopting 100% e-ticketing by 1st January 2008 (IATA, 2005). Major airlines such as BA, Lufthansa and American sell a significant part of their long-haul capacity through their own websites in their home markets but in foreign markets are still very dependent on travel agents and the Global Distribution Systems (O'Toole and Ionides, 2005). New entrants would face a similar distribution problem.

Business passengers are also unlikely to be willing to forego their frequent flier credits on long distance routes in the way they have on short-haul services, as the rewards are more valuable.

Hubs are much more crucial for long-haul operations than for short-haul. As Hooper states '*The economics of consolidating traffic at hubs and using larger aircraft becomes compelling over longer distances*' (Hooper, 2005, p.342). Alderighi et al (2005) provide an interesting comparison between hub-and-spoke and point-to-point strategies and find the need to bundle demand on larger longer haul flights does '*reinforce and preserve the HS [hub-and-spoke] configuration*' (Alderighi et al, 2005, p.334).

Whereas in the short-haul markets passengers can make slightly longer surface journeys to find a suitable non-stop flight, underlying long-haul demand is dispersed over a very wide range of origins and destinations, many at considerable distance from points with direct service. The only dense long-haul point-to-point markets from Europe equate roughly to Virgin Atlantic's network from London plus a handful of Paris routes and a few services to New York. Other flights are heavily dependent on connecting traffic at one or both ends of the route. For example, 85% of American Airlines' Manchester-Chicago traffic connects at Chicago and even on London-Chicago it is over 60% (Office for National Statistics, 2004).

The European airlines have high transfer volumes at the European end (50-80% for KLM at Amsterdam and Lufthansa at Frankfurt) and on some of the thin hub-hub routes e.g. Paris-Cincinnati or Amsterdam-Memphis, with limited numbers only a small proportion of passengers are making a simple direct flight. Hubs also provide a viable competitive alternative to direct flights on long-haul journeys for passengers wishing to save money. Travellers are willing to fly London-San Francisco via Minneapolis or London-Singapore via Dubai in order to cut 20% off the fare. Few would contemplate London-Venice via Frankfurt or Manchester-Paris via Brussels, however.

Use of larger aircraft than the conventional airlines may have the potential to significantly reduce unit costs. Thus if BA is using a Boeing 777 it would be possible to undercut their seat mile costs with a new Airbus A380. This however flies in the face of low-cost airlines' strategy on short-haul routes where they have kept to the modest Boeing 737 size equipment in order to remain competitive on frequency.

Without the hub feed of the majors, large aircraft are not really a viable proposition. Boeing 737s cannot operate efficiently on sectors of more than around 5 hours; the Boeing 757 stretches this to 7 hours but for the majority of long-haul markets, the Boeing 767-200 is the smallest practicable option with 274-290 seats on high density layout as used by Thomsonfly. This aircraft is still range restricted at high payloads however so the Boeing 767-300ER may be the most realistic choice for markets such as the North Atlantic.

Cargo is another area of concern. LCC's avoid cargo on short-haul routes as it complicates the operation and slows down turnaround times. On long-haul, cargo is too significant a source of revenue to ignore, particularly if flying aircraft with large belly-hold capacity. This therefore pushes airlines towards the traditional operating model.

The secondary airport strategy which has created dramatic cost savings for Ryanair within Europe (Francis et al, 2004) is less effective in the long-haul markets. As aircraft spend more time in the air and less on the ground, the benefits from low user charges and lack of airport congestion are diminished. Many of the secondary airports do not have runways long enough to handle intercontinental flights and others are too remote from the demand: it is possible to fill a Boeing 737 from Cardiff to Alicante but much more difficult to fill a Boeing 777 from Cardiff to Los Angeles. Some would also have to upgrade terminal facilities to handle 400 passengers at once. The new airport at Doncaster Finningley Robin Hood has aspirations to host transatlantic scheduled services but these would appear to be some way into the future.

The most substantial scope for cutting costs comes from labour. A new entrant could undoubtedly find labour willing to work for less, although again the differential is muted compared to short-haul routes. Traditional airlines often pay staff the same rates across the network which makes them particularly uncompetitive on short-haul routes. On long-haul, low-cost airlines would still have to incur some overseas accommodation costs and allowances as it is physically impossible for staff to return to base each trip. Cabin staff could be reduced in number to the safety minimum (1 per 50 passengers) although this would place increased pressure on those remaining. Indeed, the most viable model for a long-haul airline may be to use lower cost labour (as wage rates differ greatly around the world) but leave other services intact. This is essentially the strategy of carriers such as Thai International or Emirates (Anonymous, 2005a).

If these commercial obstacles were not sufficient, the regulatory barriers in the form of bilateral agreements limit the markets in which a new-entrant low-cost airline could start a service. UK airports (except Heathrow and Gatwick) have relatively liberal access to transatlantic routes and some Far East markets; the UK government would also probably be supportive. In France however there is likely to be more protectionism of Air France. It would be very difficult to create a '7th freedom' network in the way that Ryanair (an Irish airline) has done in Europe. Long-haul routes still essentially have to be from the carrier's home country. Several schemes have been mooted for linking Stansted with a US low-cost base such as Baltimore, enabling passengers to create their own 'low-cost' connections. It is difficult to see this being a very efficient process however, with three independent airlines involved.

This was the original concept of Skylink, which planned to start operations in Spring 2005; it has now metamorphosed into MaxJet, an all business carrier.

For the reasons above, there are relatively few long-haul charter flights, and this provides some evidence of the constraints in the market. The places where charters have been successful in the long-haul arena are on leisure dominated routes (e.g. London-Orlando or London-Goa) or in peak season (e.g. UK-Toronto in summer). These are reflected in the low frequency scheduled services operated by leisure airlines such as LTU and Martinair from Europe to Florida and the Caribbean, also by Air Transat from Canada to European regional airports. Low frequencies can also work in other ethnic markets such as the UK to the Indian sub-continent. The major carriers lose their key advantage where there is no business traffic and are dependent on high fares in peak season to balance the books. Leisure passengers are willing to fit their travel plans around one or two direct flights per week. A seasonal operation only works however if some complementary routes can be found that peak at different times of year. From Canada there is such a flow to Florida and the Caribbean in winter due to the extreme winter climate in Canada but on the great majority of the world's air routes, demand is greatest during the European summer.

3. Potential Cost Differentials

In this section the authors seek to identify then quantify cost differentials that a long-haul airline following a 'cost leadership strategy' (Porter, 1985) might achieve. In order to quantify the potential cost differentials and fares that would be required on a long-haul 'no-frills' service, a comparison with a traditional airline has been undertaken in Table 3. The unit costs of Virgin Atlantic on the average route in their

long-haul network are shown in the first column of Table 3 calculated from UK Civil Aviation Authority financial data, (Civil Aviation Authority, 2004, Tables 6 and 9). This approximates to London-Chicago - 4000 miles. To estimate the cost savings possible from adopting a no-frills business model, these have been recalculated as shown below. This is then translated to the revenue side of the equation, where on the traditional airlines there is already a wide range of fares with unrestricted Business Class at £5862 return (and First at £9442 where offered) down to economy class excursion fares at £230 to £490 depending on season. One First Class passenger is thus worth more than 40 of the lowest yield passengers paying economy class fares.

INSERT TABLE 3 AROUND HERE

The second column of Table 3 merely distributes these costs over the greater number of passengers that could be carried on a high density, all economy class configuration aircraft operating at 90% load factor. The third column seeks areas where costs can be further reduced. For example, fewer cabin crew are necessary and they can be paid less and secondary airports can be utilised with lower charges. Other areas however such as fuel or aircraft leases will incur the same cost as Virgin.

With all these amendments, the average cost per one-way passenger reduces to £125.51. We can now compare this with the lowest fares currently available. The cheapest return fare averaged across the year is £360 (£330 without government taxes - airport facility charges are included in the cost analysis). The low-cost airline requires £251 to break-even. With a profit margin of 10% this rises to £276. It would then be possible to undercut the traditional airline by £54 per return journey or about

15%. For many potential passengers this is unlikely to be a sufficient discount to offset the disadvantages of higher density seating, poor ground handling and no in-flight service. It has been observed that low-cost short-haul airlines can do no more than break-even on the carriage of the passengers but make their profit margin from ancillary sales and activities. This would potentially give a £79 price saving or about 22% if only covering operating costs.

Whereas in Europe, low-cost airlines have been able to more than halve the average fare paid per passenger, the best they are likely to achieve in long-haul markets is thus about 20% off - and only by foregoing product features which are relatively more valued on longer journeys. The major airlines could easily react by selectively cutting their fares which would rapidly make it impossible for the no-frills airline to run a viable operation - the fate that befell Laker's Skytrain (as described in the following section). With thousands of city pairs in the major carriers' networks, it is difficult for new entrants on a 'point-to-point' basis to create the level of competition found in short-haul markets.

Having considered what elements of the low-cost model might be transferable to long-haul the following section looks at those airlines that have attempted to achieve competitive advantage through 'low-cost' strategies.

4. Skytrain and Beyond

Most commentators on low-cost operators point to Southwest as the start of the low-cost carrier phenomenon. When considering the long-haul low-cost however then the earliest example is Freddie Laker's Skytrain which operated its first service on the

26th September 1977 between Gatwick and New York. Skytrain had started as a charter business but moved to offer a cheap one way transatlantic 'no frills' service with tickets purchased in the airport on the day of travel. The service was single class with tickets costing £59 one-way.

Historically the relaxation of fare regulation on the transatlantic market led to highly competitive pricing, so much so that low-cost ventures such as Laker's Skytrain in the 1980's struggled to compete against aggressive pricing from established airlines (Calder, 2003; Lawton, 2002). Skytrain ultimately failed in February 1982 with debts of £270 million. There was a combination of factors leading to failure (see Armstrong, 2005) including the regulatory delays, the economic climate at the time, most notably recession and exchange rate exposure on debts, and competition including alleged anti competitive pricing from other airlines. Fuel prices also doubled between 1978-81 and as at the current time, airlines struggled to pass this on to the consumer through higher fares.

There are many historical examples where airlines have tried to compete on price. Since Laker a number of airlines have established services that could be considered to have elements of the low-cost model. PEOPLExpress and World Airways are two that operated on the North Atlantic. Virgin Atlantic has always based itself around a 'value-for-money' proposition. In many ways however, it is European charter airlines that can be seen as pioneering low-cost long-haul services. European charter airlines were early innovators in cost efficiency with high occupancy and aircraft utilisation.

The ability to compete on price has always been a key factor for long-haul airlines around the world. This was sometimes achieved through cost advantages but it has also arisen as a result of acting as a loss leader, a cross subsidy from a profitable network in other regions and / or government subsidy.

5. Recent Developments and Innovations

A number of new entrants have started to offer what might be described as 'low-cost' services on long-haul routes. These include the European inclusive tour airline, Mytravel which currently offers a low-cost transatlantic service where passengers pay for their seat but pay extra for frills such as food and entertainment. A low-cost long-haul service to Australia from Manchester (UK) and Munich (Germany) has been started by Travelcitydirect.com and others proposed by Backpackers Express and FlyWho. Other examples include: Wardair Canada who offered high quality in-flight service but high density seating during the 1970s and early 1980s on charters catering for the 'Grannie' market - this market is now being tapped by Air Transat and Zoom. Icelandair undercut the traditional airlines by developing a hub in Reykjavik, originally using DC8-63s as the lowest cost aircraft. Britannia (now Thomsonfly) started charter flights to Australia, initially with a seat pitch of only 29 inches - the same as Ryanair - which was found to be impossible for this length of journey and two rows had to be removed to give 31 inches, the same as BA (although keeping the narrower seats with 8 abreast instead of 7 in the Boeing 767). Additionally the distinction between LCC's and legacy carriers is becoming more blurred. In recent years poor margins and competition has led many legacy carriers to adopt low-cost / no frills features and even to establish low-cost subsidiaries of their own. Aer Lingus now offer what appears to be their normal long-haul product at simple one-way fares

on their website. This enables them to capture 'spill' from legacy carriers by passengers who do not meet the minimum stay requirements of the excursion fares or who booked too close to time of departure. Qantas has resurrected the Australian Airlines name for long-haul leisure routes that it couldn't operate viably in its own right. In contrast, Emirates has adopted the strategy of operating full service at a relatively low fare.

The preceding examples reveal that those who could be loosely described as long-haul low-cost airlines subsumes a range of organisational activities the long-term success of which remains to be seen. The next section considers the sustainability and likely future direction of long-haul LCC's.

6. Speculating about Developments and the Sustainability of the Low-cost Model on Long-Haul Routes

Although the circumstances are somewhat loaded against a successful growth of long-haul routes by new-entrant or 'low-cost' airlines, it cannot be ignored. If long-haul services (depressed in the wake of September 11th, the SARS epidemic and rising fuel prices) become strongly profitable again for the major carriers then it is likely that other airlines will wish to obtain a share of this market. If European traffic for the low-cost airlines falters, then it is possible that carriers such as easyJet (with their greater focus on major airports than Ryanair) may investigate the possibility of attracting interline traffic to supplement their own local demand or even operating long-haul in their own right. Ryanair's Michael O'Leary has been recently quoted as saying that long-haul operation would be a "logical extension" of the airline's business formula (Anonymous, 2005b).

Established LCC's may also be best placed in terms of knowledge experience and 'critical mass' to make a success on long-haul routes:

“if someone could only answer the question of how to make the low-cost model work on long-haul then their would be a glittering prize awaiting them. But could the fact that nobody has yet unearthed this Holy Grail be because they are looking in the wrong place? The classic image of an aggressive new entrant in the mould of a Southwest, Jetblue, easyJet or Ryanair, shaking up the market. In fact it may well prove to be the established players themselves who will end up applying the hard low-fares lessons learned in the short-haul business to the longer haul.”

(Anonymous, 2004)

New aircraft types such as Airbus' A350 and Boeing's 787 may offer the potential to fly longer distances with a lower capacity aircraft. The Airbus A380 offers the lowest seat mile costs and it may be possible to fill 800 seats flying once a day on the densest sectors such as London-New York. On other routes however, frequencies will be uncompetitive thus making it impossible to attract enough market share. As airport costs are a small proportion of the total for long-haul flights there is a stronger argument for remaining in the major hub airports where there is more demand and potential feeder traffic. Low-cost short-haul networks that have become concentrated on certain airports are potentially interesting and could be used to provide 'do-it-yourself' feeder services. London Stansted, Dublin, Baltimore, Washington Dulles, New York JFK, Las Vegas and Phoenix would seem to fall within this category.

Deregulation is also a potential spur to new services. Many markets are currently closed to anyone other than the two national carriers. As this breaks down, new entrants are likely to be on the low-cost / no frills model: Several Indian low-cost new entrants, for example, have expressed an intention to fly to Europe (e.g. Kingfisher). Liberalised bilaterals with the UK may make this possible.

In terms of areas where new entrants may achieve cost leadership, labour costs are perhaps the best category for attack: Eastern European carriers can undercut significantly by offering services via their hubs in locations such as Prague or Moscow to Asia. To deter this, Lufthansa has been anxious to sign up carriers such as LOT Polish for the Star Alliance (so they concentrate on feeding Lufthansa instead). This is still dependent on the hub model however. Maintaining low central administration costs may also be an effective way of achieving limited cost advantages over legacy airlines who remain reluctant to rid themselves of the comforts afforded by their 'overhead burden'.

The length of journey on long-haul routes means that the scope for stimulation of new traffic is more limited than in short-haul. There won't be any diversion from surface modes, effectively cutting off one source of growth. There is less likely to be new generation either because whereas people from the UK can now go to Barcelona for the weekend, they are not going to go to Los Angeles just because it is cheap. Availability of leisure time means most people will only make a maximum of one long-haul trip per year. The main area for growth is likely to be trading up from short-haul to long-haul for the main holiday but even here the cost of other items (hotels,

food and car hire) means that the flight is only a small part of the total trip cost. Visiting friends and relatives (VFR) markets are hence likely to show the most stimulus. This may in part explain why Air New Zealand is able to go low-frills under 6 hours, these routes principally across the Tasman have a high proportion of tourism and VFR flows and are short-haul in the context of New Zealand's location relative to the rest of the world (New Zealand to Australia is more like Ireland-UK in the European context). Air New Zealand also faced low cost competition on the trans-Tasman market (including their own low-cost subsidiary Freedom Air)

In order to be successful new entrant airlines may be advised to keep some of the product features of the traditional carriers (more so than in short-haul). Low-cost long-haul services are most likely to be successful in:

- Pure leisure markets, especially VFR where air travel is a major part of the trip cost - these can be run at low frequency and majors do not have the business traffic to draw upon.
- Dense point-to-point markets where a modest market share is required to operate one flight per day.

The above points to the importance of cherry picking routes but this may in turn leave them exposed to the competitors' responses. The competitive nature of most aviation markets is such that airlines will need to be aware of cost efficiencies and price competitiveness. The emergence of LCC's on Long-Haul routes seems set to continue. The competitive responses by legacy carriers will be important in determining their fate. As much of the demand will have to come through diversion from traditional airlines, this is going to be more fiercely resisted than the new

generation possible in the short-haul market. Although legacy airlines are going no-frills in certain cases, 'the jury is still out' on how successful these have been.

7. Conclusions

The relative commercial success of some LCC's has led to it being perceived as an attractive business model and aspects are being utilised by long-haul operators. As yet established LCC's have been slow to move into long-haul routes but there are increasing signs of this happening. LCC's who have built up experience and skills in domestic and short-haul markets may be well placed to put such knowledge to good use in achieving cost advantages on long-haul routes. As many short-haul markets are becoming saturated with low-cost services, it may be tempting for established LCCs to diversify in this way.

The traditional airlines however are in a much stronger position in the long-haul arena. The importance of hub feed, the ability to cross-subsidise economy seats from high yield first and business class passengers and the difficulty of reducing 'frills' such as seat pitch, catering or entertainment much below the level currently provided on long-haul routes puts a 'low-cost' new entrant at a substantial disadvantage. On a cost per mile basis, long-haul air fares already offer good value for money and the relative advantage a no-frills operation can achieve is perhaps 20%, a long way from the 50% or more in the short-haul markets. The traditional airlines are most exposed in the pure leisure markets (including Visiting Friends and Relatives) that have little high yield traffic to draw upon. These passengers are less sensitive to frequency so non-stop point-to-point services can capture the demand on one or two flights per week. In

very large markets such as London-New York it should be possible to obtain sufficient traffic to fill a daily flight with a modest market share.

Whilst mostly associated with short-haul operations, certain aspects of the LCC model can be readily adapted to the long-haul market. These are however well known to legacy carriers and new entrants alike. The distinction between LCC's and other carriers are becoming more blurred as many airlines have adopted elements of the low-cost model already and in long-haul markets, LCC's will have to adopt some elements of the traditional business model. Any airline wishing to maintain cost advantages may find itself needing to continually look for ways to innovate. The cost structure of long-haul operations is such that cost advantages may be most readily achievable in labour costs and central administration.

The success of long-haul LCC's will not only be dependent on achieving cost advantages. Demand for long-haul 'no frills' services may be determined by more than just price. Competitor responses may also determine the viability of services. There has been a long history of competitors offering cross subsidised low fares to see off new entrants, who face a much steeper challenge than in the short-haul market to building critical mass. The major carriers' position is not without risk however. Although some of the new entrants may not ultimately prove viable, their main achievement may be to push the major airlines into losses on what has to date been the one remaining profitable part of their operations.

References

- Alderighi, M., Cento, A., Nijkamp, P., and Rietveld, P., 2005. Network Competition – The Coexistence of Hub-and-Spoke and Point-to-Point Systems. *Journal of Air Transport Management*, 11, 328-334.
- Anonymous., 2004. Long-haul Low-cost. *Airline Business*, 20 (1).
- Anonymous., 2005a. Emirates: the long-haul, low-cost carrier. *Aviation Strategy*, 91, 4-6.
- Anonymous., 2005b. Ryanair opens new UK bases. *Airliner World*, 11, 6.
- Armstrong, P., 2005. The Flight of the Accountant: A Romance of Air and Credit, *Critical Perspectives on Accounting*, 16, 165-183.
- Association of European Airlines (AEA)., 2004. *AEA Yearbook 2004*. Association of European Airlines. Brussels, P VI-9.
- Association of European Airlines (AEA)., 2004. S.T.A.R. passenger and cargo data downloaded on 20th July 2005 from http://www.aea.be/AEAWebsite/Presentation_Tier/Pr_GroupMenuItem.aspx?NodeID=rootMenu402
- Barrett, S.D., 2004. The Sustainability of the Ryanair Model. *International Journal of Transport Management*, 2, 89-98.
- Calder, S. 2003. *No Frills: The Truth Behind the Low-Cost Revolution in the Skies*, London: Virgin Books.
- Campbell, A., and Kingsley Jones, M., 2002. Rebel Skies: Is There Any Stopping the Low-Cost Carriers? *Flight International*, 161(4825), 29-37.
- Civil Aviation Authority., 2005. UK Airline Statistics. www.caa.co.uk/erg Accessed July 20, 2005.

- Civil Aviation Authority., 2004. UK Airline Financial tables Accessed on 12th December 2004,
http://www.caa.co.uk/default.aspx?categoryid=80&pagetype=88&sglid=13&fld=2001_2002
- Doganis, R., 2001. *Airline Business in the 21st Century*, London: Routledge.
- Flint, P., 2003. The World has Changed Forever. *Air Transport World*, 40(3), 22-26.
- Francis, G., Humphreys, I.M., and Ison, S.G., 2004. Airports' Perspectives on the Growth of Low-cost Airlines and the Remodelling of the Airport-Airline Relationship, *Tourism Management*, 25, 507-514.
- Francis, G., Humphreys, I.M., Ison, S.G., and Aicken. M., 2006. 'Where Next for Low-cost airlines? A Spatial and Temporal Comparative Study. *Journal of Transport Geography*, 14, 83-94.
- Hooper, P. 2005. The environment for Southwest Asia's New and Evolving Airlines, *Journal of Air Transport Management*, 11, 335-347.
- IATA., 2005. *World Air Transport Statistics*, IATA, Montreal, 53-54.
- Langfield-Smith, K., 1997. Management Control Systems and Strategy, *Accounting Organisations and Strategy*. 22, 207-232.
- Lawton, T.C. 2002. *Cleared for Take Off: Structure and Strategy in Low Fare Airline Business*, Aldershot: Ashgate.
- Noakes, G., 2004. Civair Links Stansted to Cape Town. *Travel Trade Gazette*. 6 (8), 7.
- Office for National Statistics, 2004. UK International Passenger Survey, London, The Stationery Office.
- O'Toole, K. & Ionides, N., 2005. Points of Sale, *Airline Business*, 21 (6), 42-45.
- Porter, M., 1985. *Competitive Advantage*, New York: Free Press.
- Williams, G., Mason, K., Turner, S., 2003. 'Market Analysis of Europe's Low-cost Airlines: An Examination of Trends in the Economics and Operating

Characteristics of Europe's Charter and No-frills scheduled Airlines' Air Transport Group Research Report, Cranfield University.

TABLE 1: Applicability of Cost Efficiencies to Long-haul Operations

Cost Efficiency Areas	Application to Short-haul LCC Operations	Applicability to Long-haul
Single class	Usually although not always	Multi-class. Importance of front of aircraft yields
Seating	'Cram them in' and often no pre allocation	Comfort more important the further you fly. Need for toilets and galley. Pre allocation may be demanded.
High Aircraft Utilisation	Seen as crucial	Already achieved because of longer sector lengths
Load factors	High occupancy	Yes potentially
No frills	Yes but variations in what is offered / charged extra for	Limited by the need to offer some additional services based on flight duration
Catering	Peanuts.	Longer haul passengers are likely to value this more highly
In flight entertainment	Limited may be charged extra	Longer haul passengers are likely to value this more highly
e ticketing and e marketing	Early innovators in this area	Yes
Frequent Flier schemes	Limited number of LCC have these	Maybe seen as more valuable
Network	Tend to start Point to Point but develop networks	Importance of Hubs
Single Fleet	Yes but a trend away from B737's	Yes but range and capacity issues such that one aircraft type may not be suitable for all routes
Cargo	No	Traditionally an important source of revenue
Fast turn around	Importance of fast turn around	Typically less important since aircraft spend longer in the air
Use of secondary airports	Often preferred from cost and efficiency perspective	Potentially depends on individual airport's facilities
Crew Utilisation	Try to achieve cost advantages	International cost savings and regulatory differences.

		Regulations on duration of duty.
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TABLE 2: Utilisation of Short-haul and Long-haul Aircraft

Airline	Boeing 737/ Airbus A320 daily utilisation hours	Europe passenger load factor (%)	Boeing 747-400 daily utilisation hours	Long-haul passenger load factor (%)
Air France	8.3 (A320)	63	14.5	81
British Airways	8.0 (A320)	68	12.9	77
British Midland	8.6* (A320)	67		
KLM	7.4 (737-300)	75	15.5	84
Lufthansa	8.4 (A320)	69	15.2	83
Virgin Atlantic			13.9	78
easyJet	11.8* (737-700)	77		
Buzz	11.3* (737-300)	75		
Air Berlin	10.5 (737-800)	74		
Germanwings	na	82		

Source: Compiled from IATA (2005) and AEA statistics (2004) and CAA Statistics* (2005).

TABLE 3: Potential Cost Differentials for a sector of 4000 miles (e.g. London-Chicago)

	Virgin Atlantic	Adjusted for high density all economy 90% load factor	Low-cost / no-frills airline with other adjustments
	£	£	£
Flight Crew	11.84	8.46	6.35
Cabin Crew	15.81	11.29	5.65
Fuel	47.09	33.64	33.64
Insurances	1.43	1.02	1.02
Aircraft	43.77	31.26	31.26
Training	0.86	0.61	0.61
Maintenance	28.51	20.36	20.36
Airport	27.59	19.71	9.86
Navigation	10.80	7.71	7.71
Passenger services	25.19	17.99	0.50
Sales/commission	20.37	14.55	1.00
Advertising	4.39	3.14	3.14
Administration	12.33	8.81	4.41
Cargo specific	8.10	5.79	0.00
TOTAL PER PAX	258.08	184.34	125.51

Source: Virgin Atlantic costs are compiled from Civil Aviation Authority, 2004. UK Airline Financial Tables (Tables 6 and 9).