

**Low Cost or Luxury – Can the low cost short haul
airline model be transferred to long haul
operations with specific reference to the case of
Ryanair?**

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Abstract

The emergence and subsequent dominance of the low cost carrier has revolutionised the airline industry. However, for the most part low cost carriers have only operated on short haul routes. This paper carries out a qualitative assessment on the low cost short haul business model and a quantitative analysis on whether or not it can be successfully transferred to the long haul market. Taking Ryanair as an example of a very successful low cost short haul carrier, this dissertation develops a feasibility study, including a profitability analysis, on the applicability of Ryanair's low cost short haul model to a long haul route. The results of this research show that some but not all of the main elements of the low cost carrier model can be successfully transferred to long haul airline operations. The results highlight that the move for a low cost carrier, in this instance Ryanair, to long haul operations appears to require substantial cost reduction, a large injection of capital and considerable cultural change. Another important finding of the study is that if Ryanair were to move to long haul operations it would no longer be able to adhere as rigidly to the low cost carrier model. Instead the evidence suggests that it would probably be transformed into a type of hybrid model between a full service and low cost carrier, such as a network specialist, product specialist or pricing specialist. This paper expands on previous studies by attempting to answer the question of the financial viability of a transfer of the low cost carrier model to long haul operations. Because this dissertation uses industry averages and published data, further research with access to unpublished airline costs and revenues is needed.

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List of Abbreviations

LCSHC – Low cost short haul carrier

LCLH – Low cost long haul

FSC – Full service carrier

LCC – Low cost carrier

IATA – International Air Transport Association

ASK – Available Seat Kilometre

HS – Hub and Spoke

PP – Point to Point

APD – Air Passenger Duty

Chapter 1: Introduction

The literature on the history of the airline industry as a whole, such as that outlined by Doganis, shows that it has experienced rapid growth and development since deregulation in the late 1970s (Doganis, 2002). Deregulation as Barros and Peypoch state has led to increased competition, the emergence of low cost short haul carriers such as Ryanair, increasingly congested airports and ever increasing pressure on turnaround times. Despite this, passenger traffic increased significantly in the period 2000 – 2005 and continues to do so (Barros and Peypoch, 2009; Marketline, 2014).

Against this background this dissertation sets out to determine whether the low cost short haul carrier (LCSHC) business model can be successfully transferred to long haul airline operations with particular focus on Ryanair.

Ryanair is an appropriate choice of case study for this dissertation as out of all the low cost carriers it is one of the most successful and it adheres most closely to the LCSHC model.

In addition, looking at Ryanair in particular is likely to prove more useful than conducting research on the airline industry as a whole because the literature shows that not all low cost carriers are the same and therefore concentrating on one airline may highlight issues that might be missed with a more generalised approach.

There are several reasons as to why this question is worthy of further research and investigation. The literature review, set out in chapter 2 shows that a lot of research has been carried out in relation to the low cost carrier business model and the elements of its success in comparison with the business model implemented by full service carriers. The impact of the low cost carrier model on the airline industry as a whole has also been well documented and researched. There are, however, gaps in the literature. Relatively few studies have been carried out on the transferability of the low cost short haul carrier (LCSHC) model to long haul airline operations. Existing studies only address the question in relation to the airline industry as a whole rather than looking at one airline in particular.

Within the current research the question of the financial viability of a low cost long haul (LCLH) business model has not been comprehensively answered. By carrying out a

profitability analysis of a hypothetical long haul route operated by Ryanair this dissertation will attempt to more fully address this question.

The question as to whether low cost carriers could successfully transfer their business model to long haul operations is a topical one as more and more low cost carriers such as Norwegian Air, Wow Air and Air Asia are attempting to break into this market. Ryanair has recently announced that it also has plans to operate cheap flights to several US cities from Dublin, London or Berlin (The Economist, 2015).

If the low cost carrier model can be successfully transferred to long haul operations this will have far reaching implications, not just for managements of both low cost and full service carriers, but also governments and policy makers. The availability of cheap long haul air travel is likely to impact positively on the tourism industries of both host and destination countries. It may also create employment opportunities and help to boost the aviation construction industry.

While the main objective of this research is to determine whether Ryanair could become a successful low cost long haul airline, there are also several sub-objectives related to this which are concerned with the use of existing or the acquisition of new aircraft, the use of Dublin as a hub and the question as to whether to set up a separate company to handle long haul operations.

In order to place these issues in the context of current debate a comprehensive review of the relevant literature has been undertaken. The overall objective and consequent sub-objectives are formally stated and the research methodologies to be employed are described in chapter 3. Sources of data, limitations of the literature, the methodologies used and ethical considerations are also discussed in chapter 3. Chapter 4 sets out the results of the research and discusses the main findings. Conclusions to be drawn from these results are presented in chapter 5. Appendices I to IV show the calculations of various pricing options available to Ryanair contained in chapter 4.

Chapter 2: Literature Review

The aim of this literature review is to understand and contextualize the research that has been conducted in the area of airline business models, specifically the LCSHC model and whether it can be successfully applied to long haul airline operations. This review examines what the main trends within the literature are and identifies gaps where further research is needed. The main themes which emerge from the literature on this topic include: the emergence and development of the LCSHC model; the impact of the low cost carriers on the airline industry as a whole; the response of full service carriers; the applicability of the LCSHC model to long haul operation and differing views on the transferability of the LCSHC model to the long haul market. Each of these main themes are discussed in detail below.

Emergence and development of the low cost carrier

A prominent theme in the literature is the development of the low cost carrier from what the network carriers thought was merely a niche player to a dominant market force. Button and Ison state that broadly speaking low cost carriers can be defined as those airlines that 'compete on the basis of cost' (Button and Ison, 2008 p. 1). They are able to offer lower fares on short haul routes because they engage in a series of cost minimising strategies.

The low cost carrier unbundles the range of services provided by the full service carriers. For example, there are no reclining seats and in-flight entertainment is not provided. Second tier airports are used and a point-to-point service is offered in order to reduce the amount of airport charges and landing fees. Turnaround times for aircraft are kept as short as possible, there are no cargo holds to load and unload, no window shades to open and no seat back pockets to empty. Overheads such as maintenance and staff training are reduced by using only one type of aircraft. Ancillary revenues are maximised through the sale of on-board refreshments and the imposition of baggage charges etc. A single class of service is offered which greatly simplifies bookings and passenger handling. Bookings are carried out directly through the airlines' website which cuts out charges to third parties such as travel agents.

Not all low cost carriers follow all of the aforementioned cost cutting strategies rigidly. Francis et al set out a number of different categories within the low cost carrier model.

These categories are; Southwest copy-cats, subsidiaries, cost cutters, diversified charter carriers and finally state subsidised and competing on price (Francis et al, 2007). Mason and Morrison also argue that there are variations within the LCSHC model and that not all low cost carriers could be categorised as purely low cost. Ryanair is held up as an example of an airline that has imposed the strictest interpretation of the LCSHC model on its operations. It is worth noting that throughout the literature Ryanair is named as one of the most successful low cost airlines in the world (Francis et al, 2007; Mason and Morrison, 2008; Marketline, 2012).

In examining the literature on the LCSHC business model it is evident that those airlines, like Ryanair, that stick most rigidly to the low cost strategies are more likely to be profitable in today's highly competitive industry (Alamdari and Fagan, 2005; Barrett, 2004; Denton et al, 2011). Mason and Morrison, 2008 go further and suggest that 'the positioning of some airlines to offer increased comfort and convenience...is not as profitable as the pure low cost approach practiced by Ryanair' (Mason and Morrison, 2008 p. 84).

The literature also suggests that the current economic and competitive environment is putting pressure on the low cost carriers. Marketline conducted a SWOT analysis on Ryanair and listed intense competition and price discounting as threats facing the airline (Marketline, 2014). This analysis indicates that Ryanair's full service competitors, KLM, Lufthansa and British Airways are beginning to compete on price discounting, fare matching, route expansion and targeted sales promotions. This level of competition from the full service carriers could impact Ryanair's ability to 'grow passenger volumes as well as expand its operational network' (Marketline, 2014 p. 21). This development leads on to the next theme that is evident in the literature which deals with the way in which the emergence of the low cost carrier as a serious market player has shaped the current dynamic landscape of the entire airline industry.

Impact of the low cost carrier on the airline industry as a whole

The emergence of the low cost carrier as a dominant player in the market for air travel has revolutionised the airline industry. The success of the LCSHC model has completely changed attitudes to pricing, revenue management and customer services. Westermann explains that the low cost carrier took the complicated fares and services offered by the full service carriers and unbundled them (Westermann, 2011).

This greatly simplified the fare structures and booking processes while at the same time offering lower fares. As Westermann states 'They removed most of the rules, introduced one-way fares combined with easy to understand step pricing.....as a consequence they were able to establish the image of an airline always offering the lowest fares' (Westermann, 2011 p.482). Ryanair's pricing and marketing strategies exemplify this. In particular its use of direct sales through its website. Malighetti et al state that the low cost carrier introduced 'dynamic pricing' and in doing so dramatically changed the way airlines viewed pricing and revenue management (Malighetti et al, 2009 p. 195).

This argument is backed up by Westermann who states that 'the LCC business model, however, changed the pricing and revenue management environment drastically' (Westermann, 2011 p.482). So big has been the impact of the LCSHC model that full service carriers have begun to move away from their traditional bundled products and complicated fare structures by introducing one-way fares, easy to use booking through websites and the unbundling of services. (Westermann, 2011; Malighetti et al, 2009; Gillen and Morrison, 2003).

Examination of the literature leaves no doubt that the success of the LCSHC model has dramatically changed the landscape of the airline industry as a whole. And it has not only been the full service carriers that have felt the impact of the LCSHC model. Charter airlines, as Williams states, have also suffered a loss of significant market share to low cost carriers. By offering greater flexibility and lower prices to the consumer the low cost carrier has pushed the charter airlines out of many of the short haul routes. (Williams, 2001).

Response of full service carriers

The results of research in this area show that there has been a convergence of sorts of the full service carrier model and the low cost carrier model. Franke observed that if full service carriers could manage to reinvent their business model by 'providing the same service level at drastically reduced cost' it would not only strengthen their market position but would elevate the industry as a whole to a new level of efficiency (Franke, 2004 p. 15).

Both Morrell and Pereira et al take this argument further by stating that full service carriers have managed to move their business model closer to that of the low cost carrier (Morrell, 2005; Pereira et al, 2011). However, Pereira et al explains that while some convergence through cost reduction is possible, the full service carriers cannot greatly reduce the level of

service that they offer their customers as 'clients expect a minimum level of quality and frills from them' (Pereira et al, 2011 p. 93). Morrell backs up this argument stating that head to head competition with LCCs is not the best strategy as the 'cost gap will never be closed' (Morell, 2005 p.312). However, he goes on to state that some cost saving measures such as the use of the internet as a distribution and marketing channel and the unbundling of some of the full service carrier products, for example the introduction of one-way fares, would close the gap somewhat and would stabilise the position of the full service carriers. The theme of a degree of convergence between the LASHC model and the full service carrier model is explored by Dennis, who suggests that there may be scope for the introduction of a long haul low cost model (Dennis, 2007).

Another response to the emergence of the low cost carriers, by some full service carriers has been to set up separate low cost subsidiaries. A possible option for Ryanair in breaking into the long haul market would be to follow this model and set up a separate company to deal with its long haul operations.

There are several examples of very successful low cost subsidiaries such as British Airways' Go, Lufthansa's Germanwings and Qantas' Jetstar. However not all low cost subsidiaries have been successful. None of the large American airlines, for example, have had success with any of their low cost offshoots such as CALite, Metrojet and Delta Express. As Morrell states 'none of them was financially viable and many of the routes operated were cash negative' (Morrell, 2005 pp 305). Despite exceptions such as Go, Germanwings and Jetstar, the norm appears to be that operating a low cost subsidiary under the umbrella of a full service carrier is very difficult and unlikely to yield profitability. This is due to the fact that the low cost business model and the full service carrier model appear to be incompatible. Combining the two models within one parent company can lead to problems in HR management, cost efficiency, pricing and marketing. As Gillen and Gados explain 'An airline within an airline tends to cause a lot of brand confusion. LCC offshoots in the US are very difficult to operate successfully. There are many inconsistencies with the way network carriers apply the LCC model to a subsidiary' (Gillen and Gados, 2008, pp29). This argument is echoed by Harvey and Turnbull who state 'For low cost subsidiaries to survive and prosper "matching" models of HR management predict they need to create a low cost employment system which will be very different from the parent company' (Harvey and Turnbull, 2010,

pp230). This suggests that Ryanair would have to adopt a totally different style of management in operating a long haul subsidiary.

Applicability of the LCSHC model to long haul operations

The literature in this section of the review focuses on the main research question of this dissertation. A few studies have been carried out on the applicability of the LCSHC model to long haul airline operations. In examining these studies the main themes that emerge are; the strengths of traditional airlines, the scope for a low cost long haul service and the limitations of the LCSHC model when applied to long haul operations.

Within the airline industry the LCSHC model has been used to great success. One of the world's largest airlines, Ryanair, is an example of an airline that has strictly implemented the main tenets of the LCSHC model such as cheaper fares, the use of secondary airports, fast turnaround times, high utilisation of labour and aircraft and the use of direct sales through its website. In recent years even full service carriers have implemented some elements of this model. However, it should be noted that while the LCSHC model has proved very successful in the short haul market, the traditional airlines are in a much stronger position regarding long haul operations (Francis et al, 2007). This is due to the long haul airlines' ability to generate feed traffic from their hubs, and to the different attitudes that long-haul consumers have to 'frills' such as seat pitch, in-flight entertainment and refreshments (Francis et al, 2007; Daft and Albers, 2012; Morell, 2008; Pereira et al, 2011; Wensveen and Leick, 2009).

Despite the advantage that the full service carriers have there is still scope for a low cost carrier to enter the long haul market and generate reasonable profits. A profitability analysis carried out by Daft and Albers generated results which suggest that a low cost carrier could sustain regular long haul operations. However, this analysis emphasises that the product which the low cost long haul airline might offer would have to be unbundled effectively and suitable trunk routes would have to be identified in order for this business model to be successful (Daft and Albers, 2012).

The literature also suggests that while some elements of the LCSHC model are applicable to long haul operations the same level of cost saving may not be achievable. In his research into the applicability of the LCSHC model to long haul operations Morrell lays out the areas

where cost savings can be generated in the short haul market and why these may not be achieved in long haul operations.

Currently, for example, the maximum turnaround time for a Ryanair flight is 25 minutes. This would not be possible on long haul flights as longer ground time is required to facilitate aircraft servicing and refuelling. In addition, consumers have a very different attitude to frills on long haul flights, however, potential revenues from paid in-flight entertainment and refreshments would probably be more acceptable on long haul flights. In addition, low cost carriers, in order to achieve the maximum revenue per aircraft, keep each aircraft flying for as long as possible during operating hours (6am to 11pm). This may not be possible in the long haul sector as airlines have to cope with time zones and abide by night curfews and longer refuelling times.

High seat densities will be needed in order to achieve productivity gains on long haul flights. Some of this productivity could be lost if a two class seating system is introduced. Also it would not be possible to work aircraft and crews as intensively as on short haul flights. Night curfews and stop-overs would also mean that airlines would have the added cost of accommodating cabin staff and flight crews overnight.

Differences in HR policy between low cost and full service carriers may also cause difficulties. Morrell suggests that low cost carriers can transfer their low cost employment system to the long haul market by hiring younger, cheaper pilots and cabin crew for long haul operations (Morrell, 2008). However, this argument is disputed by Harvey and Turnbull who argue that low cost HR policies do not transfer well to the long haul arena and can lead to demotivation of staff and labour disputes (Harvey and Turnbull, 2008).

Passenger load factors must also be considered for low cost long haul flights. The average passenger load factors for AEA (Association of European Airlines) member airlines in 2006/2007 was 82% (Francis et al, 2007). A low cost long haul carrier would have to achieve this in order to sustain profitability. This raises the question as to whether Ryanair, in operating a long haul route, should continue to use a point to point system or whether it would be more beneficial for it to operate a Hub and Spoke system.

In the case of Ryanair, the use of existing aircraft as opposed to the purchase of new and larger aircraft and the substantial investment which this would require, might be a cost

saving option. However, using existing aircraft would mean operating a single class long haul route. The lack of business or premium seating on a long haul flight may make it harder for a new low cost entrant to achieve the high load factors needed to make long haul operations viable. These issues – profitability, existing versus new aircraft, HS versus PP systems and a separate company for long haul operations – are discussed in Chapter 4.

There have been several attempts in the past at creating a low cost long haul airline. Skytrain was one of the first which was introduced in 1977. Skytrain was the UK charter operations unit of Laker Airways and it offered low fares on its London Gatwick to New York route. In 1982 Skytrain failed as a result of an economic downturn. There have been several other attempts such as Civair and FlyAZUL. However, nearly all of these attempts have failed due to a lack of funding or a failure in airline business planning (Morrell, 2008; Wensveen and Leick, 2009).

In recent times other airlines such as Oasis Hong Kong Airlines, Zoom Airlines and AirAsia X have successfully broken into the long haul market on certain routes. This backs up one of the major themes running through the literature, that even though all aspects of the LCSHC model are not transferrable to long haul operations, and despite the fact that it may not be possible for low cost carriers to undercut fares to the same degree that occurs in the short haul market there is a lot of scope and opportunity within long-haul operations that could be exploited by a low cost carrier (Morrell, 2008; Wenseveen and Leick, 2009; Francis et al, 2007; Lordon, 2014).

Differing views on transferability

Wensveen and Leick examine the types of new carriers that are emerging in the low cost long haul arena. These new carrier types are; the network specialist, the product specialist and the price specialist. Their examination of these new types of carriers concludes that ‘the price specialist has the greatest number of potential opportunities’ (Wensveen and Leick, 2009 p. 132). They go on to state that although opportunities exist, in order to survive, the low cost long haul carrier must have a ‘solid business plan that demonstrates a sustainable competitive advantage, flexibility, the right management team....and a long-term vision’ (Wensveen and Leick, 2009 p.133). This is an argument that is echoed in much of the literature. For example, Daft and Albers carried out a profitability analysis on the low cost long haul model and concluded that although long haul operations may complicate

some of the previously simplified elements of the LCSHC model 'a variety of untapped markets exist that offer significant point-to-point demand without dedicated feeder traffic....a LCC could well be able to generate and absorb price sensitive demand to fill their additional capacity' (Daft and Albers, 2012 p. 53).

However, Francis et al take a more negative view of the success of applying the LCSHC model to long haul operations. They echo the concerns of Wensveen and Leick of low cost carriers not being able to generate enough feed traffic through the use of a point-to-point system to fill the additional capacity of the larger aircraft that will be needed for long-haul flights (Francis et al, 2007). Wensveen and Leick argued that this could be overcome by a strategic choice of routes and possible cross border code sharing with certain FSCs (Wensveen and Leick, 2009). The view taken by Francis et al, however, is that while low cost long haul operations are possible the FSC has a greater advantage over the LCC in this arena and that in order for low cost long haul operators to succeed they must achieve significant cost advantages (Francis et al, 2007). This more negative view of the viability of the low cost long haul model is also argued by Dennis who states that 'calculations indicate that a no-frills long haul operation might be able to reduce the ticket price by about 20% on the cheapest economy fare. 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' (Dennis, 2007 p. 15).

In conclusion there is no convincing evidence contained in the literature that a low cost carrier could successfully transfer its cost model to long haul airline operations. This dissertation investigates whether Ryanair, in particular, could successfully transfer its LCSHC model to the operation of a long haul route. It is important to note that there is a lack of current literature on this topic and that some of the articles mentioned above go back as far as 2002. Also there have been relatively few studies carried out specifically on the transferability of the LCSHC model to long haul airline operations and none in relation to a specific carrier.

Chapter 3: Methodology

In examining the literature on this topic it is clear that while a lot of research has been carried out on the area of airline business models and the emergence and dominance of the low cost carrier in the short haul arena, only a limited amount of research has been carried out on the transferability of the LCSHC model to long haul airline operations.

Issues to be investigated

The central objective of this dissertation is to determine the transferability of Ryanair's LCSHC model to long haul airline operations, with particular emphasis on one route – Dublin-New York. This route was selected because of Ryanair's recent press statements, referred to in the introduction, and because the distance involved allows Ryanair the option of using its existing fleet.

One of the major themes running through the literature has been that, even though not all aspects of the LCSHC model are transferrable to long haul operations, and despite the fact that it may not be possible for low cost carriers to undercut fares to the same degree that occurs in the short haul market there is a lot of scope and opportunity within long haul operations that could be exploited by a low cost carrier (Morell, 2008; Wenseveen and Leick, 2009; Francis et al, 2007; Lordon, 2014).

This dissertation attempts to determine the transferability of the LCSHC model to long haul airline operations by putting forward a pragmatic option for Ryanair to enter long haul operations for a specific long haul route. In putting forward this option for Ryanair all elements of the LCSHC model are examined and their level of transferability to the long-haul model determined. These elements include Ryanair's business strategy, cost saving practices, pricing strategies, choice of route, load factors etc. A profitability analysis on the operation of a proposed long haul route to be operated by Ryanair has been carried out. The results are shown in chapter 4. In addition consideration has been given to the level of price discounting which would be required in order to compete successfully with FSCs.

In order to comprehensively assess the transferability of the LCSHC to long haul airline operations three sub-objectives have been further investigated. These sub-objectives address the following questions: should Ryanair consider using its existing fleet on long haul

routes or should it invest in a fleet of larger aircraft?: what would be the advantages and disadvantages of using Dublin as a hub?: would it be commercially beneficial for Ryanair to set up a separate company to deal solely with long haul operations.

Data collection

The statistical and financial data needed to answer the main objective has been taken from various statistical sources such as IATA (International Air Transport Association). Financial data has been sourced from recent Ryanair annual reports and annual reports of other airlines as required.

The secondary data needed to answer the three sub-objectives/questions has been gathered from a review of current academic literature, independent research institutions and published industry averages

Methodologies

The research objectives/questions outlined above have been answered by using a mixture of qualitative and quantitative research methodologies. A qualitative assessment of the basic features of the LCSHC model and the full service carrier model together with a feasibility study/profitability analysis on the applicability of Ryanair's low cost model to the operation of a long haul route by Ryanair was carried out. The level of price discounting required in order to compete successfully against FSCs was analysed. The results are presented in chapter 4

The choice of qualitative assessment combined with a feasibility study including a profitability analysis is justified as these are the most common methodologies used in previous studies carried out on this topic and addresses all of the most important issues which are likely to influence decision makers.

Other quantitative methodologies, such as cost simulation and econometric modelling, have also been used in previous studies. This dissertation has not employed either of these methodologies as the raw data needed is not available.

Limitations

The research methodologies employed in this dissertation have several limitations. Firstly, some of the academic literature used is quite old and goes back as far as 2002.

Secondly, on the specific topic of the transferability of the LCSHC model to long haul airline operations there does not appear to have been a lot of research undertaken and none in regard to a specific low cost carrier. This could be due to the fact that the low cost long haul model is a relatively new model that has not yet been widely accepted or adopted in the airline industry.

Finally, as Ryanair has not yet engaged in long haul operations the financial data contained in the profitability analysis has been projected from Ryanair's recent financial data and also from the most recent IATA Airline Cost Performance report which was dated 2007. Much of the data in this report is based on network carrier averages. This may limit the robustness of the findings as estimations of, and adjustments to, cost and revenue figures had to be developed.

Ethical considerations

This dissertation does not involve any vulnerable individuals or groups of vulnerable individuals and does not require any interviews, surveys or focus groups. All data has been gathered from academic journals, independent research institutions and industry publications. As a result no ethical considerations arise in relation to this dissertation.

Chapter 4: Research Findings

Profitability

According to the IATA's Airline Cost Performance report of March 2007 Ryanair's operating costs were 36% of those of network carriers while its revenues were 44%. Using the 2013 financial statements for three network carriers (KLM, Lufthansa and BA) the cost and revenue ratios for 2013 were calculated, and the results were similar to those of the 2007 IATA Airline Cost Performance report. In 2013 Ryanair's costs were 34.4% of the average operating costs incurred by network carriers and its revenues were 38.6% of those of network carriers. These results are shown in tables 1 and 2 below.

Table 1: Airline Statistics 2013

Airline	Total operating costs/expenses €Ms	Total revenues €Mss	Operating Profit €Ms	Passenger revenue €Ms
KLM	9,387	9,688	301	6,869
Lufthansa	31,379	32,228	849	21,743
BA	9,146	9,699	553	8,602
Ryanair	4,166	4,884	718	3,820

(Source: 2013 financial statements for KLM, Lufthansa, BA and Ryanair).

Table 2: Cost & Revenue Ratios of Ryanair to Network Carriers 2013

Airline	Cost ratio	Revenue ratio
KLM	44.4%	50.4%
Lufthansa	13.3%	15.2%
BA	45.5%	50.4%
	Average cost ratio	Average Revenue ratio
	34.4%	38.6%

(Source: 2013 financial statements for KLM, Lufthansa, BA and Ryanair).

Using these ratios a base case operating profit/loss for Ryanair on a Dublin-New York route (see chapter 3) was calculated. Operating profit was used because it is a concept which is utilised by both long haul and short haul operations. In addition, the factors included in operating profit are common across most airlines and provide a reasonable basis for comparisons between different airlines. This is not the case with indirect costs such as tax and finance costs which are dependent on the relationship which any particular airline may have with its creditors, its bankers and where the airline is based etc. For these reasons operating profit is used, as a relevant metric throughout this dissertation.

Ryanair’s 2013 operating expenses and revenues, as per the 2013 financial statements, were scaled up by 2.91 (1/.344) and 2.59 (1/.386) respectively. This base case shows what Ryanair’s operating expenses, revenues and profits might be if they operated the same business model as the network carriers including both short and long haul operations. However, in order to establish whether Ryanair could profitably operate a route from Dublin to New York, its short haul business has been stripped out. Therefore, in table 3 below Ryanair’s 2013 operating expenses, revenues and profit have been subtracted from the base case figures and shows an estimation of Ryanair’s possible profit/loss position if they operated long haul only. It can be seen from table 3 that Ryanair would make a loss in this situation.

Table 3: Scale up of Ryanair’s costs and revenue to match network carriers 2013

Costs €Ms	Revenue €Ms	Operating Profit €Ms	
12,123	12,650	527	Ryanair - long & short haul
4,166	4,884	718	Ryanair - short haul only
7,957	7,766	(191)	Ryanair - long haul only

(Source: 2013 financial statements for KLM, Lufthansa, BA and Ryanair).

The above calculations give a general overview as to Ryanair’s profit/loss position if they operated a long haul operation similar in nature to other long haul airlines which operates multiple routes. This is clearly not the case. Furthermore, it must be borne in mind that this is a highly stylised model and does not pinpoint the financial viability of a single Dublin-New

York route which is being investigated in this dissertation. In order to estimate whether the Dublin-New York route would be profitable for Ryanair the costs and revenues for this particular route would need to be established. The level of detailed data required for such an exercise is only available to the management of Ryanair. In the absence of such detailed information this dissertation uses published data from airline annual reports, financial statements, published research and statistics produced by the IATA in order to construct the various profitability models and pricing scenarios which are discussed below.

If it is assumed that the network carriers are operating their short haul business as efficiently and at the same level as Ryanair, then by subtracting Ryanair's short haul only figures above from the total figures for the network carriers it can be seen that the network carriers long haul only business makes an average operating loss of €150million for 2013. This point is illustrated in table 4 below.

Table 4: Network carriers' long haul operations 2013

Airline	Long haul only operating costs/expenses €Ms	Long haul only revenues €Ms	Long haul only operating profit €Ms
KLM	5,221	4,804	(417)
Lufthansa	27,213	27,344	131
BA	4,980	4,815	(165)
Average	12,471	12,321	(150)

(Source: 2013 financial statements for KLM, Lufthansa, BA and Ryanair).

This implies that the network carriers may be cross subsidising their long haul businesses with profits from their short haul businesses. Table 4 also indicates that if the network carriers operate their short haul business less efficiently than Ryanair (as is likely to be the case) their long haul operations are probably even less profitable than indicated above. It could be concluded from these workings that long haul operations in general do not appear to be inherently profitable, at least in 2013.

The IATA in their Airline Cost Performance report of March 2007 gives the average cost per ASK of three network carriers operating flights within European Markets. It is possible to

extrapolate from this to an estimation of the costs and revenues involved in operating a flight from Dublin to New York. The costs in € cents per ASK are shown in table 5 below. As stated in the Airline Cost Performance report these costs have been adjusted for an average stage length of 1400km, a seat density 14% lower than that of the low cost carriers and inflation from 2005 to 2006. These adjustments have been unwound by multiplying the adjusted figures by 1.2 (the difference between the adjusted and unadjusted totals). The unadjusted figures have then been further adjusted for inflation to 2015 levels using the Eurostat average annual inflation rate from 2005 to 2015 (1.8% p.a. www.ec.europa.eu/eurostat/data).

Table 5: Calculation of cost per ASK for network carriers 2015

Cost category	Adjusted	Unwound	Inflation
	€ cents	€ cents	€ cents
Labour	0.99	1.19	1.41
Aircraft Ownership	1.11	1.33	1.59
Maintenance	0.83	1.00	1.19
Airport charges	2.70	3.24	3.86
Other	0.61	0.73	0.87
Distribution	1.51	1.81	2.16
Other	1.22	1.46	1.74
Fuel	1.45	1.45	1.45
Total	10.42	12.21	14.27
Unadjusted total	12.50		
Revenue		12.0	14.28

(Source: IATA Airline cost performance report, 2007)

It should be noted that the price of oil per barrel in 2005 was \$60.44 (www.inflationdata.com). While the price of oil has increased since 2005, in recent months its price has dropped substantially to a current price of \$59.64 a barrel (www.inflationdata.com). Therefore, the 2015 fuel cost of 1.45 cents per ASK has been maintained.

The revenue figure used was the total average revenue per ASK for network carriers in 2005 as per the IATA Airline Cost Performance Report, published in 2007. This figure was 12 cents per ASK and was adjusted for inflation to give a total revenue per ASK figure of 14.28 cents at 2015 levels.

The unwound cost and revenue figures adjusted for 2015 inflation rates (totalling 14.27 and 14.28 respectively) were then used to create a new base case profit/loss position for the Dublin to New York route for Ryanair which is shown in table 6 below. This is referred to as Base Case 1.

Table 6: Base Case 1 – Profit/(Loss) for Dublin to New York route for Ryanair 2015

Cost category	€ cents per ASK	Total ASK	Total operating cost €	Total Revenue €	Profit/(Loss) for route €
Labour	1.41	1042536600	14,699,766		
Aircraft Ownership	1.59	1042536600	16,576,332		
Maintenance	1.19	1042536600	12,406,186		
Airport charges	3.86	1042536600	40,241,913		
Other	0.87	1042536600	9,070,068		
Distribution	2.16	1042536600	22,518,791		
Other	1.74	1042536600	18,140,137		
Fuel	1.45	1042536600	15,116,781		
Total	14.27		148,769,973		
Revenue	14.28			148,874,226	
Profit/(loss)					104,254

(Source: IATA Airline cost performance report, 2007)

As indicated in Base Case 1 above it appears that Ryanair could make a small profit on the Dublin-New York route. However it should be noted that several assumptions have been made in arriving at Base Case 1. It was assumed that Ryanair would operate daily Dublin-New York and New York-Dublin flights for 50 out of 52 weeks. It was also assumed that Ryanair will purchase Boeing Dreamliners for long haul flights which have a capacity of 291 seats in a single class seat configuration (www.boeing.com). A load factor of 100% was assumed. The

total ASK was calculated as follows; 5118km (distance from Dublin to New York) x 14 flights per week x 50 weeks x 291 passengers = 1042536600 ASKs. The revenue figure used was the total average revenue per ASK for Network Airlines in 2005 as per the IATA Airline Cost Performance Report, published in 2007. This figure was 12 cents and was adjusted for inflation to give a total revenue per ASK figure of 14.28 cents at 2015 levels.

In order to get a more accurate profit/loss position for the Ryanair Dublin-New York route several adjustments have been made to Base Case 1: The load factor was adjusted to the average for network airlines on long haul flights. This worked out at an average load factor of 82.3% (as per the 2013 financial statements of KLM, Lufthansa and BA). It was assumed that the revenue figure given in the IATA (which has been adjusted for 2015 inflation rates) includes passenger and ancillary income such as Cargo revenue, excess weight charges, food and drink etc. Ancillary revenue averaged 24% of total revenues for network carriers (2013 financial statements for KLM, Lufthansa and BA).

Ryanair currently uses 737-800s to operate all short haul flights. While these planes do have the capacity to travel non-stop from Dublin to New York it was assumed that, Ryanair will purchase Boeing Dreamliners for long haul operations. This will result in increased ownership and maintenance costs calculated as lease repayments and maintenance costs based on the assumption that Ryanair would operate the same type and numbers of aircraft as Norwegian Air. These were calculated using the 2013 financial statements for Norwegian Air ($164500000/1042536600 = 0.16$ and $194300000/1042536600 = 0.19$).

These new aircraft would allow Ryanair to introduce a premium or business class. This two class configuration may be necessary in order for Ryanair to achieve the high load factors of other network airlines. Revenue of 14.28 cents per ASK is based on the average seat configuration of the network airlines which is 291 seats per plane, 32 of which are business or premium seats.

Table 7 below illustrates the results of adjusting Base Case 1 for the factors outlined above.

Table 7: Base Case 2 – Profit/(Loss) for Dublin to New York route for Ryanair (Base Case 1 plus adjustments) 2015

Cost category	€ cents per ASK	Total ASK	Total operating cost	Total Revenue	Profit/(Loss) for route
Labour	1.41	1042536600	14,699,766		
Aircraft Ownership	0.16	1042536600	1,668,059		
Maintenance	0.19	1042536600	1,980,820		
Airport charges	3.86	1042536600	40,241,913		
Other	0.87	1042536600	9,070,068		
Distribution	2.16	1042536600	22,518,791		
Other	1.74	1042536600	18,140,137		
Fuel	2.11	1042536600	21,997,522		
Total cost	12.50		130,317,075		
Total revenue				122,523,488	
Profit/(Loss)					(7,793,587)

(Source: IATA Airline cost performance report, 2007)

The above model has been adjusted for possible future increases in fuel prices. The Wall Street Journal has forecast that by 2017 fuel prices may have increased to \$86 a barrel. This is a 46% increase on the fuel price of \$59.64 a barrel and has been included in Base Case 2 above (The Wall Street Journal, 9 Feb 2015).

Base Case 2 gives an estimate of the level of cost, revenue and profitability that Ryanair could expect on a daily return Dublin-New York flight. The result is a loss of €7,793,857, or 6.4% of revenue.

One further adjustment could be made to this model in order to give an improved picture of the financial outcome of this route for Ryanair. The above Base Case could be adjusted for the scenario where Ryanair uses its existing aircraft to operate the long haul Dublin-New York route. This would result in a decrease in cost for Ryanair. However, Ryanair may have difficulty reaching the high load factors of the network airlines with its existing aircraft as the

network airlines subsidise some of the costs of their long haul operations from business and first class passenger revenues. With its existing aircraft Ryanair would only be able to offer a single class economy flight and there is evidence in the literature to suggest that they may not achieve the high load factors that the network airlines do on long haul routes (Wensveen and Leick, 2009).

According to the 2013 financial statements Ryanair has lease repayments on its existing aircraft of €98 million and maintenance costs of €120.7 million. This would mean that on the Dublin-New York route aircraft ownership and maintenance costs would be 0.18 cents and 0.14 cents per ASK respectively ($€98,000,000/677111400 = 0.18$ and $€120,700,000/677111400 = 0.14$). The ASKs for this scenario would be calculated as follows – $5118\text{km} \times 14 \text{ flights per week} \times 50 \text{ weeks} \times 189 = 677111400$. This is due to the fact that Ryanair's existing 737-800 aircraft have a capacity of 189 seats in total.

The results of these adjustments, referred to as Base Case 3, are shown in table 8 below which indicates a loss of almost €5 million or 6.1% of revenue.

Table 8: Base Case 3 – Profit/(Loss) for Dublin to New York route for Ryanair (adjusted for use of existing aircraft) 2015

Cost category	€ cents per ASK	Total ASK	Total operating cost	Total Revenue	Profit/(Loss) for route
Labour	1.41	677111400	9,547,271		
Aircraft Ownership	0.18	677111400	1,218,801		
Maintenance	0.14	677111400	947,956		
Airport charges	3.86	677111400	26,136,500		
Other	0.87	677111400	5,890,869		
Distribution	2.16	677111400	14,625,606		
Other	1.74	677111400	11,781,738		
Fuel	2.11	677111400	14,287,050		
Total Cost	12.47		84,435,791		
Total revenue				79,577,111	
Profit/(Loss)					(4,858,680)

(Source: IATA Airline cost performance report, 2007)

As can be seen from the tables above, there are a range of different scenarios for Ryanair entering the long haul market. The results range from a small profit of just over €100,000 in Base Case 1 to a loss of approximately €8 million if Ryanair were to purchase new planes and the price of fuel rises (Base Case 2), to a loss of almost €5 million if Ryanair continue to use its existing aircraft.

It must be borne in mind, however, that these models are based on the achievement of average network carrier levels of efficiency. This may not be a valid application in the case of Ryanair since the basis of its success in short haul operations rests on the achievement of considerably higher than average levels of efficiency. Even a 5% reduction in the cost factors contained in these models would result in substantially improved outcomes.

As mentioned previously, this is a highly stylised financial model and in order to obtain a more realistic view as to whether Ryanair could successfully and profitably apply its short haul

business model to a long haul route such as Dublin-New York, there are several other financial and non-financial factors which must be taken into account. These factors include; the feasibility of Ryanair using its existing aircraft versus the purchase of newer more fuel efficient aircraft which would allow a two class seat configuration; the use of Dublin as a hub for its proposed long haul operations, as opposed to operation of a point to point system as it does on its short haul flights; the possibility of setting up a separate company to deal with long haul operations only. Each of these questions are discussed under separate headings below.

New aircraft or existing aircraft?

Ryanair currently operates its short haul flights using Boeing 737-800s. These aircraft carry 189 passengers and have a seat width of 17 inches and a seat pitch of 30 inches. According to Boeing it is possible for the 737-800 to fly over 5000km before it needs to refuel (www.boeing.com). As the flight from Dublin to New York is 5118km it is possible for Ryanair to use its existing aircraft fleet to operate this route.

However, there are other factors that need to be considered in making this decision. For example the seat configuration on a 737-800 does not lend itself to any business class or premium seating. Ryanair would have to operate a long haul single class flight if it decides to use its existing aircraft. There is evidence in the literature which suggests that Ryanair would not get the high load factors needed to make this long haul operation viable. As Wensveen and Leick explain 'long haul economy fares are already competitive and there is little evidence that lower airfares will translate into increased demand in long haul markets as it has for short haul markets' (Wensveen and Leick, 2009 pp130). Passengers, while willing to forego the comfort that a bigger plane can offer on a short haul flight, may not be willing to sacrifice much comfort on a long haul flight even at a cheaper price. As Francis et al state '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' (Francis et al, 2005 p397). It is also worth noting that one of the reasons some low cost carriers were so successful in the short haul market was because they were able to increase load factors on short haul routes from 60% to 80% (Morrell, 2008). In the long haul market load factors are generally higher than this with many major European airlines achieving load factors in excess of 80%. There would be little room for a low cost long haul provider, such as Ryanair to improve on this level (Morrell, 2008).

If, on the other hand, Ryanair decides to invest in new, larger aircraft, such as the Boeing Dreamliner, it would be able to move away from the single class seat configuration and introduce a business class or premium seating. This would help Ryanair increase its revenues and also its load factors on a long haul operation. Introducing a business or premium class would also give Ryanair the advantage of being able to cross subsidise economy seats from the more expensive business or premium seats. Norwegian Air, for example, is a low cost airline that operates a Dublin to New York route. For its long haul operations Norwegian Air uses the Boeing Dreamliner aircraft. This aircraft has a total of 291 seats with a business or premium class making up 32 of these seats.

However, by introducing a business or premium class Ryanair may create certain expectations among passengers regarding the “frills” that will be provided on its long haul flights. Passengers on a long haul flight may be expecting a higher quality of catering and in-flight entertainment. While Ryanair would more than likely provide these frills ‘on demand’ in order to increase its ancillary revenues, these added extras will also increase Ryanair’s costs. More galley space may be needed to store larger and better quality in-flight meals and beverages, additional training for staff may be needed to operate a larger aircraft and provide a wider range of services. Turnaround times will lengthen as the larger aircraft and additional services mean more time will be spent cleaning the aircraft after landing and preparing for the next flight (Francis et al. 2007).

It should be noted that if Ryanair were to introduce a business or premium class for long haul operations then this will not only result in an increase in costs, it will also result in a departure from its low cost model. Ryanair has built its success on its rigid adherence to the low cost, “no frills” model. If it introduces a two class seat configuration it will, by definition, no longer be operating as a low cost carrier. This would have considerable impact on markets and marketing.

Cargo is another area that Ryanair may need to consider if they invest in new, larger aircraft. According to Francis et al cargo, in the long haul market, is quite a significant source of income especially for aircraft with a large amount of belly hold capacity. Typically low cost carriers, including Ryanair have deliberately avoided cargo carriage as it slows down turnaround times and complicates operations (Francis et al, 2007). If Ryanair wants to break into the long haul market successfully it may have to consider using its new and larger aircraft for cargo

transport. This would give it a secondary and quite significant source of income. As there is no possibility of Ryanair using its existing aircraft for cargo transport, this may be another argument for investing in the Boeing Dreamliner.

Another important factor to consider is the level of investment required. Norwegian Air currently has a fleet of 8 Dreamliners for its long haul operations. On average a Boeing Dreamliner costs approximately €197 million (\$218 million) to purchase and approximately €22 million (\$24 million) per annum to maintain. It should be noted however, that the Boeing Dreamliner is much more fuel efficient than the older 737-800 (www.boeing.com). While at present, with oil prices lower than \$60 a barrel this is not as significant a factor as it once was. It is likely, however, that oil prices will rise again in the future and having a fuel efficient aircraft could result in a substantial saving (The Wall Street Journal, 9 Feb 2015). The purchase of new aircraft is a huge investment for any airline and yet finance and maintenance costs are not the only costs involved.

To date Ryanair has used only one type of aircraft; the 737-800. This has meant that it has been able to cut down on staff training costs as its staff only need to be trained in the use and maintenance of one type of aircraft. Many of the network carriers use several different types of aircraft for both their long and short haul operations. If Ryanair decide to invest in the Dreamliner they will incur extra training costs in addition to increased maintenance costs. This would be another departure from its low cost model.

It is possible, however, that Ryanair may be able to negotiate a more manageable price with Boeing. It was able to achieve this when it was purchasing its existing fleet. However, when Ryanair originally purchased its existing fleet it did so at a time when the market was depressed and Boeing was prepared to give a discounted price to get the business. This is no longer the case and there is no way of knowing how long Ryanair would have to wait for another dip in the market.

Point to Point vs Hub and Spoke

As is typical of a low cost carrier Ryanair operates point-to-point (PP) flights, usually between smaller, uncongested airports and no connection services are offered. When flying with Ryanair the responsibility of coordinating arrivals and departures in order to reduce waiting times between flights is left with the passenger. Network carriers, on the other hand, operate

a 'hub and spoke' (HS) system. Network carriers tend to operate out of a main base or 'hub' airport and as stated by Marti et al (2014) 'passengers are redistributed and sent to other destination airports'.

This type of system, while it covers larger markets and benefits from high levels of feed traffic, is not as efficient as the point-to-point system. As Marti et al explains that 'These operations need to be managed and coordinated to a very high standard' (Marti et al, 2014). Franke also shares this view and explains how the hub and spoke system worked for many of the full service carriers. Franke describes how deregulation of the airline industry during the 1990s pushed the network carriers to build up global networks centred on large hubs. Franke goes on to state that 'network carriers tried to draw more and more traffic to their hubs since they could create a disproportional increase in connections at incremental cost' (Franke, 2004 pp 15). While this strategy certainly increased the revenues of the network carriers it had a negative effect on passenger convenience and on airline costs. The structure of the traffic patterns needed for maximum connectivity resulted in congestion, time critical connections which required special processes, poor punctuality performance and low productivity. Despite these inefficiencies airline passengers had no choice but to comply as no alternative operational model existed (Franke, 2004).

With the emergence of the low cost carrier, however, came a new and simpler operational model. This was known as point to point configuration. As explained by Lordan in this model 'airlines are connected by direct routes, rather than going through a central hub....base airports are usually well connected to major cities in which airlines centralize services such as aircraft maintenance and assistance to passengers, offering similar operational advantages as the hubs do in the HS configuration...as a consequence airlines adopting a PP configuration have a lower probability of delays, lower peaks of needs of personnel and a lower turnover of aircraft.....the gains of efficiency obtained, together with the fact that secondary airports usually charge lower fees makes those airlines adopting this network configuration more efficient' (Lordan, 2014 pp 1114).

The high level of complexity and inefficiency associated with a HS configuration make it a time consuming and costly model to implement and for this reason Ryanair, for its short haul operations has chosen to operate point-to-point flights. In recent years airlines using certain

large international hubs such as Heathrow have had to deal with massive congestion problems, which often lead to delays and increased pressure on air traffic control.

However, if Ryanair attempts to break into the long haul market it may need to consider switching to a hub and spoke system for its long haul flights. As Alderighi et al explain 'It is noteworthy that FSCs (full service carriers) are stuck with the hub and spoke configuration to sustain the supply of inter-continental flights. It still seems impossible to fill a Boeing 777 or an Airbus 330 for an intercontinental destination without a hub and spoke strategy' (Alderighi et al, 2004 pp14). This argument is echoed by Francis et al who explain that European airlines have a high level of transfers. For Lufthansa at Frankfurt airport and for KLM at Amsterdam airport transfers make up 50-80% of total traffic. Only a limited number of their passengers book direct flights. In fact Francis et al go on to state that 'Hubs also provide a viable competitive alternative to direct flights on long-haul journeys for passengers wishing to save money' (Francis et al, 2007 pp 393). If Ryanair do decide to operate a hub and spoke system for its long haul operations this would be yet another departure from its low cost carrier model.

It should be noted, however, that attempting to enter a hub and spoke network could be very difficult for Ryanair as the network carriers have the advantage in this market. Hendricks et al (1997) state that 'the hub operator can credibly threaten to maintain its presence in a hub and spoke market even when it suffers losses in that market due to competition. As a result, regional carriers that do not have a cost advantage are forced to exit and entry is deterred' (Hendricks et al, 1997). However Hendricks does also imply that if a low cost entrant, such as Ryanair, entering a hub and spoke network has a significant cost advantage then 'there are equilibria in which the hub operator accommodates the lower-cost entrant and shares in the efficiency gains' (Hendricks et al, 1997).

The issue regarding the adoption of a hub and spoke approach or remaining as a point to point operator essentially comes down to the differences between the low cost model and the full service carrier model. The aim of the low cost carrier is to maximise the productivity of its aircraft and its people. This translates into a high level of aircraft utilisation and a large number of daily rotations. As Morrell explains 'large hubs used by network carriers are orientated towards making connecting flights and do not attempt to maximise aircraft productivity. On the other hand, LCCs try to achieve high aircraft utilization and a large

number of rotations' (Gillen and Gados, 2008 pp30). It should also be noted that the decision to adopt a HS type configuration may also be affected by the type of aircraft that Ryanair will use. For example if Ryanair decide to use their existing aircraft they can leave open the option of remaining with a point to point configuration, however, if they invest in larger aircraft, such as the Boeing Dreamliner, they may be forced to move to a HS type configuration as many of the secondary airports used in a PP configuration are too small to accommodate the larger aircraft.

The choice of hub may help mitigate some of the costs involved in switching to a HS type configuration. Ryanair boss Michael O'Leary has previously stated that if Ryanair did enter the long haul market it would operate flights to the US from either London, Berlin or Dublin. If Ryanair chooses Dublin as its hub for US destinations then it may be able to make some cost savings and achieve the necessary load factors. Dublin handled 20.17 million passengers in 2013 (DAA, 2013) and although this is much smaller than London Heathrow, which handled 72.3 million passengers in 2013 (Heathrow Airport, 2013) it is not yet operating at full capacity and is not suffering from the congestion and overcrowding problems apparent at Heathrow. Berlin is approximately the same size as Dublin and in 2013 it handled 19.6 million passengers (Berlin Airport, 2013), however, it does not have the advantages, from Ryanair's perspective, that Dublin possesses.

One of the major advantages of using Dublin as a hub is the fact that all flights from Ireland to the US are now able to clear US Customs and Immigration in Dublin. As stated in an article in The Irish Independent on 3 April 2014 'the capital is increasingly looking like an attractive option for travellers bound for the United States from outside Ireland'. This advantage would also help to draw in passengers from the UK and Europe. For example, Aer Lingus offers a regional service in the UK operated by Stobart Air which attracts passengers from cities such as Newcastle, Edinburgh and Glasgow. Passengers travelling on to the US are happy to go through Dublin to do so (The Irish Independent, April 2014). In fact as an article in The Telegraph on 30 May 2015 points out 'Air passengers in the North of England and Scotland are increasingly flying to America via Dublin to avoid Heathrow according to Irish carrier Aer Lingus' (The Telegraph, 30 May 2015).

Aer Lingus has experienced the same draw of passengers from outside Ireland on its Dublin to San Francisco route. This route has attracted passengers from the UK and other parts of

Europe. But it is not just the US pre-clearance facility at Dublin that is attracting passengers, it is also Dublin airport's uncongested and uncrowded facilities. As stated in The Irish Independent 'Its long been predicted that Dublin could become a new US-Europe hub' (Irish Independent 3 April 2014). For Ryanair who may be looking to introduce its first US route, Dublin may seem like the obvious choice. This sentiment was also expressed in the UK press. The same article in The Telegraph, referred to above, stated that 'Passengers from the North of England and Scotland who transfer through Terminal 2 at Dublin are able to clear US Customs in advance so they avoid large queues when they reach their final destination. UK passengers can also avoid Air Passenger Duty by booking single tickets to Dublin and separate long haul tickets out of Ireland so they only pay the short haul rate of the so called "flight tax". APD (Air Passenger Duty) is levied on all departures from a UK airport and varies in price depending on the distance flown' (The Telegraph, 30 May 2015).

This choice is further enhanced by the fact that Ryanair already has a large presence in Dublin airport and would be able to negotiate favourable slots and attractive airport and landing charges. This may go a long way to mitigating the costs associated with operating the less efficient hub and spoke configuration. Indeed Ryanair is not the only airline that sees Dublin as a very attractive potential hub. In 2010 Dublin airport was engaged in talks with Air India in its bid to become the European hub for the airline (Irish Examiner, May 2010). IAG recently acquired Aer Lingus partly because of its ability to attract UK passengers onto US routes through Dublin. Aer Lingus themselves in a press release on Wed 3 July 2013 stated that 'The success of Aer Lingus' transatlantic operation in recent years is in no small part due to its revised network strategy, which has brought major increases in connecting passengers particularly at Dublin' (Aer Lingus, 2013). It would appear that Dublin's attractiveness would help to provide the feed traffic necessary in order for Ryanair to achieve the high load factors required to make the Dublin-New York route profitable.

Separate Company

In response to the threat from low cost carriers some network carriers have set up separate low cost subsidiaries. While some of these separate companies such as, Go, Germanwings and Jetstar have become very successful others such as CalLite, Song, Ted and Zip have folded. One of the options for Ryanair, in attempting to enter the long haul market, is to reverse this process and set up a separate full service subsidiary. In this way Ryanair would not have to

depart in any way from its low cost business model. A recent article in The Economist stated that 'while Ryanair is indeed keen to start flying across the Atlantic, it is reluctant to do so under its own brand because of the antipathy in which it is held by many European travellers' (The Economist, 16 March 2015).

Perhaps that is the reason Ryanair tried on several occasions in the past to acquire Aer Lingus. By acquiring Aer Lingus, Ryanair could have benefited from Aer Lingus' successful US routes and good customer service reputation without deviating from its highly successful and cost efficient business model. Unfortunately, the opportunity to acquire Aer Lingus has now passed and Ryanair must consider either acquiring another long haul airline or setting up a completely separate subsidiary that would operate long haul flights under a different company name and brand.

If Ryanair opted to embark on the task of setting up a long haul subsidiary there are several issues such as branding and marketing that would have to be taken into consideration. As Gillen and Gados state and as pointed out in Chapter 2 'An airline within an airline tends to cause brand confusion' (Gillen and Gados, 2008 pp25). As mentioned above there appears to be a level of antipathy towards its low cost brand held by many European passengers. Therefore it will want to ensure that its new long haul subsidiary is kept completely separate from its low cost operations, at least in the eyes of potential passengers.

A careful separation of parent and subsidiary is also required from a profitability point of view. If the example of the British Airways low cost offshoot Go is examined it can be seen British Airways felt that Go was cannibalising its full service business and therefore made the decision to sell it to Easyjet, despite the fact that Go had become very successful and had contributed quite a significant amount to BA's revenues and profits. As Harvey and Turnbull explain in their case study 'Go was competing rather too successfully with the parent airline on short haul routes. Indeed Go was extremely popular with (premium) business travellers' (Harvey and Turnbull, 2010 pp239). Gillen and Gados echo this danger of cannibalization stating that the most common causes of the failure of low cost subsidiaries in the past has been 'discrepancies in business models, large differences in cost, and not careful separation thus cannibalization by the LCC of the parent FSC (competition)' (Gillen and Gados, 2008 pp 30).

While in some cases internal competition can be a good thing for a company's overall performance, in the case of airlines and their subsidiaries, where there is market uncertainty and an increasing number of competitors, this type of competition can often lead to 'duplication, strategic incoherence and in-fighting' (Birkinshaw, 2001 pp22).

In examining whether it should set up a long haul subsidiary Ryanair also needs to consider how it would apply HR management across the parent and subsidiary companies. This is an issue which plagued other low cost offshoots, particularly those created by some of the American airlines. As referred to in Chapter 2 Harvey and Turnbull state 'for low cost subsidiaries to survive and prosper "matching" models of HR management predict they need to create a low cost employment system which will be very different from the parent company' (Harvey and Turnbull, 2010 pp230). Harvey and Turnbull go on to explain that Go was one of the few low cost subsidiaries that achieved this careful balance in HR policy stating that it had 'positioned itself in-between the simple dichotomy predicted by matching models of HRM of high-quality/high-road employee relations and low-cost/low-road employee relations' (Harvey and Turnbull, 2010 pp239).

This is backed up by Gillen and Gados who stated that there is 'a need for the establishment of entirely separate subsidiary companies that are totally insulated from parent labour practices' (Gillen and Gados, 2008). It appears that Ryanair would need to drastically change its HR policy in relation to a potential long haul subsidiary. Given the fact that Ryanair is known for demanding high levels of productivity from its employees through long hours and in some cases the use of zero hour contracts, it is difficult to imagine that the company would be able to implement a very different or more 'high-quality/high-road' set of policies for its long haul subsidiary.

Low cost offshoots such as Go and Germanwings have become very successful for several reasons; in the case of Go its human resources approach found the right balance between adhering to the low cost model and the treatment of its staff. In the case of Germanwings it was the successful way it unbundled its low cost product (Gillen and Gados, 2008). However, relatively few low cost subsidiaries have become successful and many have failed. According to academic research the failure of some of the low cost subsidiaries such as Ted, Zip and Callite have been due to the incompatibility of the low cost and full service business models

operating within the same airline. Graf explains that 'incompatibilities of the two business models are the causal reason for failure of earlier attempts' (Graf, 2005).

In other words the full service carrier model is not compatible with the low cost carrier model and having both of these models operating within the same airline can create vulnerabilities for the company as a whole (Gillen and Gados, 2008).

In a case study carried out by Morrell on the low cost offshoots created by some of the American airlines, the results show that most of these offshoots failed due to 'inconsistencies in the way the LCC business model had been applied by network carriers' (Morrell, 2005 pp306). Morrell goes on to state that in his examination of the cost reduction programmes of network airlines, two of which did not set up LCC subsidiaries, the data shows no indication that those carriers with offshoots had made any more progress on narrowing the cost gap than the network carriers who did not establish an LCC within themselves'.

There is very little evidence within the literature that network carriers who set up low cost offshoots actually managed to effectively deal with the threat of the low cost carrier (Gillen and Gados, 2008). Ryanair must consider whether a full service offshoot would be able to successfully compete in the long haul market with other full service carriers (Gillen and Gados, 2008).

Given the apparent incompatibility of the low cost and full service carrier business models and the relatively few examples of subsidiaries that have become successful, is it a feasible option for Ryanair to try to set up and manage a long haul airline that would require a completely different business model, HR policy and management culture, or is this too big a leap for an airline that has made its name through ruthless cost efficiency and strict adherence to the low cost model?

Pricing

Pricing is the critical factor that impacts on all the issues discussed so far. The literature indicates that low cost carriers will not be able to achieve the same level of cost savings on long haul operations as they do on short haul operations. Francis et al state that where the low cost carrier can make cost savings of 40 – 60% on short haul operations, only 20 – 40% is possible on long haul operations. Francis et al go on to explain that as a result the ability of the low cost carrier to undercut the network carriers by more than 20% is questionable. Low

cost carriers, such as Ryanair, looking to break into the long haul market need to be aware of the ability of the network carriers to undercut/match rates offered by low cost entrants. In the long haul market, Francis et al argue, the network carrier has size and network advantages over the low cost carrier.

It is useful in examining the issue of how Ryanair would price its long haul product to look at Ryanair's current pricing strategy. Ryanair, like many other low cost carriers, implement a "dynamic" pricing strategy. This strategy differs greatly from that implemented by the traditional network carriers. When low cost carriers first began to emerge in the short haul market they introduced a whole new system of revenue generation and pricing.

Until this time network carriers had followed a strategy of "yield management" which as Alderighi et al explain is 'a set of techniques used to allocate limited and highly perishable resources among differentiated consumers. The goal of yield management is to maximise the revenue of a carrier operating in such a complex market environment' (Alderighi et al, 2004 pp4). This form of pricing was extremely complex with long lists of rules governing fares such as cancellation policies, refund policy, frequent flyer mile requirements, loyalty club points etc. This led to confusion and mistrust among consumers. As Westermann points out 'Pricing structures that were difficult to understand by the consumer combined with a long list of complicated fare rules resulted in the perception that all this was only designed for the purpose of confusing the consumer and taking advantage of them by charging too high prices' (Westermann, 2012, pp 481). This argument is echoed by Malighetti et al who stated that 'Full cost carriers choose price discrimination techniques based on different fare classes, complex systems of discounts with limited access, customer loyalty schemes and overbooking techniques' (Malighetti, 2009 pp195). During the 1980s and early 90s consumers had no choice but to go along with the pricing structures set by the network carriers as no alternative model existed.

However with the emergence of the low cost carrier came a simpler and more direct pricing model. The low cost carriers introduced "dynamic pricing" which was a simplified, easy to understand step pricing process which was aggressively communicated to the consumer. In successfully communicating their "dynamic pricing" structure to consumers the low cost carriers were able to establish themselves, in the consumers perception, as always offering the lowest fares.

The low cost carriers then took this simple pricing process one step further by unbundling their products and offering additional services for an extra charge. As Westermann states 'In addition to low cost fares and simplified pricing concepts, they introduced unbundling and started offering optional service components for an additional charge' (Westermann, 2012 pp482). In this way the low cost carrier model revolutionised the airline industry. By increasing competition in the market they forced many of the network carriers to lower their prices. Hofer emphasises this by stating that 'Low cost carriers typically apply aggressive pricing policies that ultimately result in lower fares in the markets they serve. It may be expected that the presence of a low cost carrier in a market has a diminishing effect on price premiums' (Hofer et al, 2008 pp865).

It is worth noting that Ryanair was one of the first airlines to adopt this model and one of the most successful. By ruthlessly adhering to the low cost model in relation to cost efficiency and pricing Ryanair achieved consecutive and increasing profits.

While Ryanair has managed to implement a very profitable pricing strategy in the short haul market, the margins are extremely small. A very fine, consistent balance needs to be struck between cost and revenue. In the words of Malighetti et al 'The success of the low cost model is based on a fragile balance between load factors and operating costs. The structure of revenues and the determination of prices are nearly as important as the minimisation of costs in the equation of profits' (Malighetti, 2009 pp195). It is not certain that Ryanair would be able to achieve the same balance between costs and revenues in the long haul market and even if it did, there is evidence to suggest that the larger and longer established network carriers could respond by lowering their prices and adopting a model closer to that of the low cost carrier.

Aer Lingus, for example is a traditional network carrier that has managed to turn an ailing, loss making legacy airline into a lean, profitable, low cost carrier (Francis et al, 2006). This argument is reinforced by Westermann who explains that 'The Low Cost Carrier (LCC) business model has changed the airline industry significantly over the previous decade. However, the traditional airlines responded to the newcomers and times are more challenging for the LCCs today. Limited growth potential leads to a convergence of the two business models which requires new forecasting and optimization methods to be developed over the coming years' (Westermann, 2011 pp481).

This idea of the network carriers adapting their business models to move closer to the low cost model in order to compete with airlines like Ryanair is also discussed by Garrow et al. Their research puts forward the theory that ‘many network carriers will eliminate ancillary fees, particularly as they begin to recognise how these fees can impact other system performance objectives such as minimizing the number of misconnecting passengers’ (Garrow et al, 2012 pp255).

Taking the above arguments into consideration the question remains; how would Ryanair price its long haul product. Several calculations have been carried out at varying levels of cost reduction. These calculations are shown in full in appendices I to IV. The costs and revenue model used for these calculations is based on network carrier averages. Using base case 2 figures (see table 7) as a basis, the calculations outlined in appendices I, II, III and IV result in a break even average return price from Dublin to New York for Ryanair of €1,184. In addition, fares were calculated for various levels of cost reduction. The results were as follows:

Level of cost reduction	Breakeven average fare €
10%	1,064
20%	944
30%	817

A sample of seasonal fares, both economy and business class, was compiled for network carriers KLM, Lufthansa and BA as well as the low cost carrier Aer Lingus (www.skyscanner.ie). These fares were for a return trip from Dublin to New York. Using these fares, an average network carrier return fare and an average low cost carrier (Aer Lingus) fare were calculated. These calculations can be seen in Appendix I. When compared to the network carrier average return fare of €1007 (see appendix I) it can be seen that Ryanair would require a cost reduction of between 10% and 20% in order to compete with the network carriers. At a 20% cost reduction level Ryanair could undercut network carrier fares by a small amount and make a profit. However, in order to compete with Aer Lingus a cost reduction in excess of 30% would be required.

Chapter 5: Conclusions

As stated in chapter 4, Ryanair's costs are 34% of network carrier (KLM, Lufthansa and BA) costs and its revenues are 38% of network carrier revenues (See table 2). Based on these costs and revenues it can be seen from table 4 that the network carriers appear to have had an average loss of €150 million in 2013. This implies that for network carriers long haul operations may not be inherently profitable.

The research findings also indicate that based on IATA cost and revenue data per ASK Ryanair could make a small profit of approximately €104,000. However, this is assuming that Ryanair operate a fleet of Boeing Dreamliners at a 100% load factor for its long haul route (Base Case 1). When this is adjusted to the average load factor achieved by the network carriers in 2013 (82.3%) the resulting loss amounts to almost €8 million (Base Case 2). When this model is adjusted for use of Ryanair's existing aircraft this loss drops to almost €5 million (Base Case 3).

All of the above assumes that Ryanair would operate its potential long haul routes at least the average level of operating efficiency as the network carriers. While these research findings demonstrate that it would not be profitable for Ryanair to attempt to break into the long haul travel market It should be noted that if Ryanair were to manage to cut its cost by as little as 6% this would push them into a break even position for Base Case 2. It would seem reasonable, given Ryanair's record of cost reduction that substantial improvements could be made on network carrier averages.

However, the extent to which this could be achieved will depend not only on Ryanair's ability to cut costs and implement a high level of operational efficiency, but also on other factors such as; whether Ryanair uses its existing aircraft or purchases new, larger and more fuel efficient planes, whether it uses Dublin as a hub, whether it sets up a separate company to operate its potential long haul routes and, crucially, how it prices its potential long haul product.

Regarding the use of its existing aircraft, based on the earlier discussion of this topic, it would seem reasonable to conclude that Ryanair should invest in new aircraft, specifically the Boeing Dreamliner. As discussed in Chapter 4, if Ryanair decides to use its existing aircraft to operate

the potential Dublin to New York route, there will be no scope for it to introduce a business or premium seating section. As Francis et al explain using aircraft with a single class economy configuration on long haul routes may prevent Ryanair from achieving the high load factors necessary to compete with the network carriers and make long haul operations viable. As Francis et al further state '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' (Francis et al, 2007 pp397).

It is worth noting that Ryanair will not only be competing with network carriers but also with emerging low cost long haul carriers such as Norwegian Air and Wow Air all of whom use, newer, larger and more fuel efficient aircraft to operate long haul routes. Therefore it would seem to put Ryanair at an unnecessary disadvantage to use its existing aircraft for potential long haul routes. Although purchasing new aircraft requires a substantial investment and will result in higher aircraft ownership, maintenance and training costs, nonetheless, it seems reasonable to conclude that, as one of the biggest and most successful airlines worldwide, and given its track record in previous negotiations with Boeing, Ryanair would be able to obtain a good price and/or lease repayment rates for the new aircraft.

It should be noted also, that the use of new aircraft would permit the adoption of a two class fare structure thereby providing the opportunity to cross subsidise the cheaper seats with revenue from the more expensive, premium seats as well as the ability to achieve the load factors necessary for viability.

In relation to whether or not Ryanair should use Dublin as a hub for its potential long haul operations or remain with its existing point to point configuration, based on the arguments put forward in the earlier discussion it would appear that using Dublin as a hub would be the best option for Ryanair. Not only does Dublin have the advantage of the pre-clearance agreement with the US which would attract passengers from the UK and other parts of Europe, but Ryanair already has a large presence at Dublin airport and should be able to negotiate favourable landing rates.

Also, as is evident from the literature, using a hub and spoke configuration has greatly helped the network carriers to achieve very high load factors on their long haul operations. In fact some analysts have stated that without the feeder traffic generated by using a hub and spoke

configuration it would be extremely difficult to achieve economically viable load factors. As referred to in Chapter 4 Alderighi et al explain 'It is noteworthy that FSCs are stuck with the hub and spoke configuration to sustain the supply of inter-continental flights. It still seems impossible to fill a Boeing 777 or an Airbus 330 for an intercontinental destination without a hub and spoke strategy' (Alderighi et al, 2004, pp14).

In drawing conclusions from the discussion regarding whether Ryanair should set up a completely separate subsidiary to deal solely with its long haul operations, it would appear that while this is certainly an option that would allow Ryanair to market its long haul operations without having to consider the antipathy that some of European consumers seem to have towards Ryanair and its approach to customer service (The Economist, 16 March 2015) it is also evident, as referred to in Chapter 4 that this option would require a total change in management style and culture within Ryanair, particularly regarding HR policy (Harvey and Turnbull, 2010). It appears reasonable to conclude, therefore, that despite some negative market reaction and poor brand acceptance of its current operation, this change may be too big a transformation for Ryanair to take on while at the same time attempting to establish itself in a new market where competition is fierce and where network carriers already have an advantage (Francis et al, 2007).

In regard to the pricing of its long haul product, Ryanair would need to achieve a cost reduction of between 10% and 20% in order to compete with network carriers. Given Ryanair's track record in the short haul arena, attainment of this level of cost reduction would not seem unreasonable. Ryanair had achieved cost savings in the short haul market of between 40% - 60% (Wensveen and Leick, 2009). It is worth bearing in mind, however, that some analysts have argued that it would be very easy for the network carriers to react to the threat of low cost long haul carriers by reducing their fares, perhaps temporarily below those of Ryanair. Francis et al state that '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' (Francis et al, 2007 pp395).

Not only would a low cost long haul carrier have to compete with network carriers but in order to compete with other low cost carriers such as Aer Lingus, a reduction on network carrier average costs in excess of 30% would be required. While Ryanair has achieved greater levels of cost reduction in the short haul arena it may not be feasible for it to achieve the

same level of cost reduction in the long haul market. As Wensveen and Leick explain, low cost long haul carriers would not be able to achieve the same level of cost saving in the long haul arena. This is due to the fact that the make-up of the costs is different and passengers are not as willing to forego the “frills” on long haul flights. As stated in Chapter 2 Wensveen and Leick go on to state that ‘Cutting frills on long haul flights would only alienate passengers who find more value in in-flight entertainment, meals and seat pitch on longer flights. Overall the cost-advantage of long haul low cost carriers is expected to be 20-25% compared to 40-60% for their short haul counterparts’ (Wensveen and Leick, 2009 pp130).

It is interesting to note that Aer Lingus has moved from a network carrier model that made large losses to an extremely cost efficient low cost carrier in both long and short haul markets. Although on a much smaller scale, Aer Lingus has managed to achieve what Ryanair is hoping to achieve within the next few years (Francis et al, 2006).

A different option that could be considered by Ryanair, is to pursue market entry acquisition and seek out a suitable established European or US long haul airline. This option would eliminate the need for new aircraft or a separate subsidiary or a change from point to point configuration to hub and spoke, all of which require not only huge investment by Ryanair but also a move towards a very different and unfamiliar business model. Acquiring one of the smaller European airlines or a domestic American airline and applying some of Ryanair’s cost saving measures in order to improve profits would allow Ryanair to obtain most of the benefits of a long haul operation without having to undergo massive cultural and managerial change.

Due to the fact that Ryanair has yet to embark on long haul operations, it is very difficult to predict whether it could successfully transfer its low cost short haul business model to the long haul arena. The literature examines examples of airlines that have attempted this in the past and the results have been inconclusive. Some analysts like, Morrell, Gillen and Gados and Nigel have argued that while some of the elements of the low cost short haul carrier model are transferrable, not all can be successfully applied to the long haul market.

Some, like Wensveen & Leick and Francis et al are more pessimistic, stating that although Ryanair could fly long haul cheaper and make a profit, the network carriers would be more than able to undercut low cost entrants. While the results of the profitability analysis above

implies that Ryanair could, given the assumptions stated, make a profit and compete with the network carriers, if it wants to compete with other low cost long haul carriers such as Aer Lingus it would have to reduce its costs by a substantial percentage. This, coupled with the fact that Ryanair would need to make a substantial investment in new aircraft and train its flight and cabin crews in their operation, move to a hub and spoke configuration at large airports, possibly establish a new company to avoid brand contamination and make major changes in its management and culture to effectively run its long haul operations, it is perhaps a step too far to be feasible.

However, without exact financial data, which is not publically available, it is not possible to reach a definitive resolution to the question under investigation. The above position, however, although based on network averages together with published data nonetheless gives a reasoned indication of the viability of a potential long haul operation for Ryanair.

Appendices

Appendix I: Seasonal Fare Analysis

Selected date	Ticket class	KLM	Lufthansa	BA	Aer Lingus
Thurs 27 Aug 2015	Economy	1161	1211	665	669
Fri 20 Nov 2015	Economy	1437	701	574	547
Fri 11 Dec 2015	Economy	497	486	573	483
Thurs 14 Jan 2015	Economy	1437	692	1488	547
Fri 8 April 2015	Economy	606	612	667	574
Fri 10 June 2015	Economy	619	611	667	574
Average fare		960	719	772	566

Selected date	Ticket class	KLM	Lufthansa	BA	Aer Lingus
Thurs 27 Aug 2015	Business	3832	2908	3405	2847
Fri 20 Nov 2015	Business	3922	2907	3359	2847
Fri 11 Dec 2015	Business	1805	1867	1950	1958
Thurs 14 Jan 2015	Business	3922	2907	3441	2847
Fri 8 April 2015	Business	1380	1482	1467	1958
Fri 10 June 2015	Business	1806	1868	1957	1958
Average fare		2778	2323	2597	2403

(Source: www.skyscanner.ie).

Note: All fares are return

Appendix II: Calculation of Average Fares – Network Carriers

Average economy class fares:

	€
KLM	960
Lufthansa	719
BA	772
Total	2,451

Network carrier average economy fare = $2451/3 = \text{€}817$

Average Business class fares:

	€
KLM	2,778
Lufthansa	2,323
BA	2,597
Total	7,698

Network carrier average business fare = $7698/3 = \text{€}2566$

Weighted average fare:

Total seats = 291

Of which economy = 259 x load factor (82.3%) = 213

Of which business = 32 x load factor (82.3%) = 26

	€
Economy average = 817×213	= 174,021
Business average = $2,566 \times 26$	= <u>66,716</u>
Total	240,737

$\text{€}240,737/\text{No. of seats (239)} = \text{€}1,007$

Weighted average fare = €1,007

Note: all fares are for return flights

Appendix III: Calculation of Average Fare – Aer Lingus

	€
Average economy class fare	566
Average business class fare	2,403

Weighted average fare:

Total seats = 291

Of which economy = 259 x load factor (82.3%) = 213

Of which business = 32 x load factor (82.3%) = 26

	€
Economy average = 566 x 213 =	120,558
Business average = 2403 x 26 =	<u>62,478</u>
Total	183,036

183,036/No. of seats (239) = €766

Weighted average fare = €766

Note: all fares are for return flights

Appendix IV: Calculation of pricing model for Ryanair at varying levels of cost reduction

Break-even fare:

In a break-even scenario total cost will equate with total revenue. Calculations are based on figures from Base Case 2 (see table 7).

Therefore: Total Revenue = €130,317,075

Number of one-way trips = $7 \times 2 \times 50 = 700$

Number of seats at 82.3% load factor = 239

Number of one-way fares = 167,300

Number of return fares = 83,650

Price calculation:

$130,317,075 / 83,650 = 1,558$

Less ancillary revenue at 24% = 374

Break-even fare (return) = €1,184

Application of the above calculation at varying levels of cost reduction yields the following break-even prices:

Level of cost reduction	Break-even fare €
10%	1,064
20%	944
30%	817

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