

# **Literature review of the passenger airline business models**

**Full service carrier, low-cost carrier and charter airlines**

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## **Abstract**

The deregulation and liberalization of the air transportation industry have developed three main passenger business models: full service carriers, low-cost carriers, and charter airlines. Deregulation removed regulated fares and routes increasing competition and yields. Airlines business models main objectives are to minimize operation costs and fares, and to maximize profits based on cost leadership, differentiation and focus strategy.

This paper presents a literature review about airline business model strategies as a first step to identify the main parameters required for developing a new model. This model should eventually be able to determine the location of the airport as well as the most profitable routes for low-cost airline company.

## **Keywords**

Air Transportation, airline business model, full service carrier, low-cost carrier, charter airline, and airline operations.

# 1 Introduction

The development of the air transportation system has shown an exponential growth since the beginning of 19<sup>th</sup> century (Radnoti, 2001).

The deregulation and liberalization (privatization) of the air transportation industry have produced new airline business. Deregulation refers to the elimination of government policies to control airline or airport companies to raise or drop prices and enter and exit markets (Neufville and Odoni, 2003). The deregulation and liberalization first happened in the United States of America (US) during the 1970s (Aldamari and Fagan, 2005) whilst in the European Union (EU) took place in three different periods 1987, 1990 and 1992 (Burghouwt and De Wit, 2005) when regulated fares and routes were removed allowing EU airline companies to fly any route inside the EU territories (Graham et al, 2003). Deregulation and liberalization have increased the airlines competition and then domestic yields have been decreasing (Guillen and Ashish, 2004). To be able to compete and widen their air traffic market, airlines have improved their business models applying new business strategies to reduce cost operations, drop down fares, and maximize profits.

Nowadays, it is becoming more difficult to differentiate between airline business models. To compete against low-cost carriers (LCC), full service carriers (FSC) are reducing costs applying LCC strategies in short-haul operations. Charter carriers achieve the lowest costs, and recently new high fare airline business model has appeared for the business class market (this last model is not discussed in this paper). Guillen and Ashish (2004) established that airline business models can be defined with significant differences in network structure and airport choice.

According to Aldamari and Fagan (2005) three general airline strategies can be adopted by all carriers to have advantage against competitors:

1. Cost leadership: If an airline achieves and sustains overall leadership, it will be able to establish prices at or near the industry average, i.e. LCCs offer a standard product and they try to find and exploit sources to get cost advantage against competitors.
2. Differentiation strategy: All airlines have to develop strategies to offer more attracting services for passengers, like food and drinks, flight entertainment, business class, etc.
3. Focus strategy: "Adding value to the product or service"

This paper presents a literature review about airline business model strategies as a first step to identify the main parameters required for developing a new model able to minimize operation costs and fares and maximize profits. Chapter 2 explains the main characteristics of the FSC model and how FSCs are using LCC model strategies to reduce operation costs and fares in short-haul market, and how they are developing new strategies opposite to the LCC model to achieve differentiation. In chapter 3, LCCs model have increase during the last years and their main characteristics are to minimize operation costs, drop fares, implement strategies to increment non-aeronautical revenues, and develop strategies to achieve differentiation. In chapter 4, charter carriers have the lowest operating costs model and tourism markets are their main focus. To be profitable, charter carriers need to have a high load factor. Chapter

5 compares the LCC model against the FSC and charter models. Finally, chapter 6 is a conclusion of this paper.

## 2 Full Service Model

The traditional FSC model has shown a modest profit growth. It has shown increased productivity and declining average fares over the past 20 years. The gray line in figure 1 (N) shows how full-cost airlines suddenly decreased profit margins before 11<sup>th</sup> September 2001, the efficiency of the FSC model was already questioned (Morell, 2004).

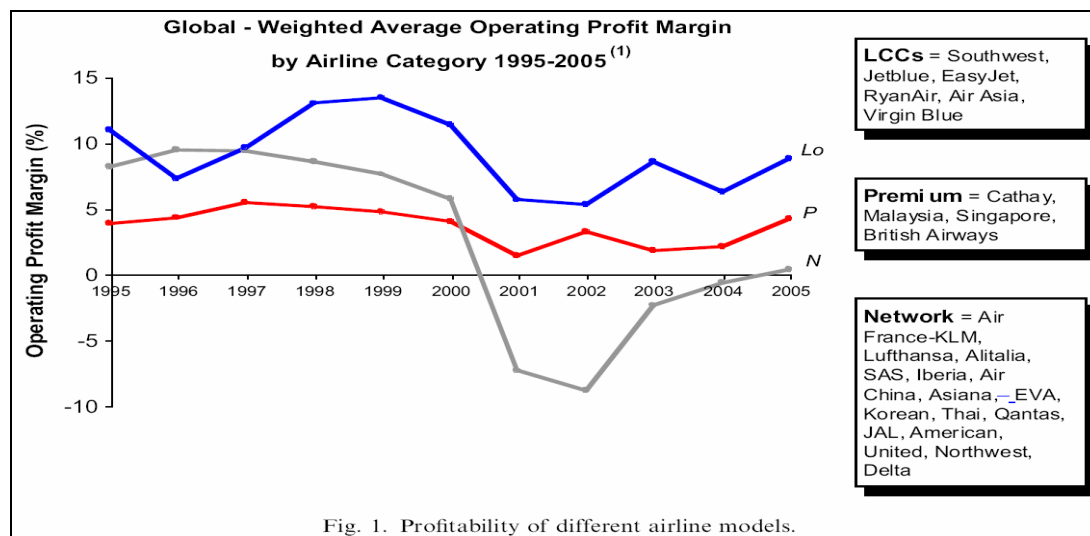


Fig. 1. Profitability of different airline models.

**Figure 1: Some airlines operating profit margin 1995 to 2005 (Franke, 2007)**

In a non-competing airline scenario the interest for FSCs to minimize operations cost did not exist. Then increments of operation costs were paid by passengers. Airlines accepted each other tickets, service were concentrated in few hub airports and few slots were available at the hub airports. FSCs enjoyed the government regulation that control airport operations (Barret, 2004). Nowadays, after the privatization and deregulation of the air transportation industry, FSCs have been forced to put attention in the minimization of airline operation costs and reduce fares to be more competitive in a new scenario, mainly affected in short-haul operations by the LCCs. For these reasons, FSCs are applying LCCs operation strategies to minimize operation costs and drop fares.

FSCs have recognized the advantages of the LCC business model trying to become more competitive, some of them have invested in a low-cost subsidiary carrier such as Freedom Air (Air New Zeland) (Gillen and Ashish, 2004) Click Mexicana (Mexicana de Aviacion) and Aeroméxico Connection. Nevertheless, the majorities of the low-cost FSC subsidiaries have failed, such as Buzz and Go bought by Ryanair and EasyJet, and just few of them have been successful, indicating it is not easy to manage two brands under the same control (Dennis, 2007).

FSCs are applying LCC strategies to low their costs, be more profitable and lower fares as an advantage. But also they are using differentiation strategies (Hunter, 2006)

that are opposite to the LCC models such as the expansion of the share of capacity allocation to high fare and business class by increasing seating quality.

Table 1 shows variety of sources that FSC have been improving to increase revenues, i.e. FSC normally carry freight and they sign government contracts to carry mail, duty-free on-board to increase revenues and rent lease equipment to other airlines (Radnoti, 2001).

**Table 1: FSC Revenue Sources (Radnoti, 2001)**

<i>Revenue Account</i>	<i>Medium</i>	<i>Revenue Account</i>	<i>Medium</i>
Passenger	Passenger Traffic	Charter	Available aircraft time
Freight	Freight Traffic	Duty-Free	On-board sales
Mail	Government contracts	Services	Maintenance handling for other airlines
Excess baggage	Passenger Traffic	Lease Income	Lease of equipment to other airlines

Table 2 and Table 3 show the airline and aircraft operational costs. To reduce these costs as much as possible, FSCs should develop strategies for both short-haul and long-haul flights.

**Table 2: Airline operating costs (Doganis, 2002)**

<i>Direct Operation Costs (DOC)</i>	
Flight operations	Flight crew salaries and expenses; Fuel and oil; Airport and en-route charges; aircraft insurance; and rental/lease of flight equipment/crews
Maintenance and overhaul	Engineering staff costs; Spare parts consumed; and maintenance administration (could be IOC)
Depreciation and amortization	Flight equipment; Ground equipment and property (could be IOC); Extra depreciation; Amortization of development costs and crew training
<i>Indirect Operation Costs (IOC)</i>	
Station and ground expenses	Ground staff; Buildings, equipment, transport; Handling fees paid to others
Passenger services	Cabin crew salaries and expenses (could be DOC); other passenger service costs; and passenger insurance
Ticketing, sales and promotion	
General and administration	
Other operating costs	

FSC model appears to be no longer an effective business model since they are applying LCC operations strategies to drop fares and compete against low-cost airlines. Even though, FSC will continue to exist, it provides a highly valuable service

to many customers (Tretheway, 2004). FSC should only apply those LCC strategies that do not affect the quality of services they usually offer to their passengers like frequent scheduling, inter-flight flexibility and ground service linkage with interest in personal space and comfort on-board, in-flight entertainment, free meal and drinks, use of major airports or hubs and frequent flight programs (FPP). Business passenger might be the main customers of this type of airlines.

**Table 3: Aircraft Costs (Radnoti, 2001)**

<i>Account</i>	<i>Related Factors</i>
Cockpit / Cabin crew	Crew compliment and salaries; Block hours
Fuel and oil	Fuel price and aircraft performance; Mile and trips flown
Maintenance	Labor rates; Aircraft design and age; Number of flight hours
Aircraft service	Aircraft size (weights/seats); Number of departures; Salaries and contract rates
Landing fees	Aircraft weight; Airport rate schedules; Number of departures
Navigation fees	Miles flown; Government and airline cost schedules

## 2.1 FSC network routing systems

In the United States (US), the airline networks are organized in a hub-and-spoke (HS) routing system (Burghouwt and De Wit, 2005). During the last 30 years, the privatization and deregulation of the air transportation system have increased HS networks in US (Barros et al, 2007). HS system consolidates traffic from a different range of origins, sorts it and then sends it to different destinations. HS system allows spoke cities to have better service at lower prices while hub cities have better service at higher fares.

In the European Union (EU), some HS routing systems are different from the US. In EU, hub networks operate under a wave-system structure, with better performance because of higher connectivity. “This structure consists of the number of waves, the timing of the waves and the structure of the individual waves”. These connection waves are a set of incoming and outgoing flights such that all incoming flights are equal in number of all outgoing flights schedule in time (Burghouwt and De Wit, 2005).

The merger and mega-alliance consolidation are a new strategy that FSC airlines use to have bigger networks. Airlines also benefit through higher profits and competition cease between them. But mega-alliance reduces competition in the markets (domestic and intercontinental), increase overlapping service, fares rise, traffic falls and new collusion on transatlantic hubs routes have appeared. In general, alliance consolidations have had negative effect in the consumer welfare (Brueckner and Pels, 2004).

## 2.2 FSC strategies, variables and operation model characteristics

FSC strategies must be oriented to the reduction of the labor costs, increase productivity, transfer service to regional partners, franchises or alliances and/or



establish LCC subsidiaries, hiring new staff on less generous contracts and outsourcing more activities (catering, ground handling, and aircraft maintenance) i.e. Lufthansa now has a base in Budapest to conduct heavy maintenance lowering costs. Other changes are paid for catering in economic class (Aer Lingus, bmi and SAS) or offering just non-alcoholic beverages. Aer Lingus has been changing much of the process into a low-cost carrier. A head-to-head strategy is applied when a FSC airline uses low-cost strategies in specific routes in competition. FSCs can use their control of slots at the hub facilities or capacity to keep LCCs out of the hub operations. The majority of the FSCs have not used the reduction of the flight and cabin crew to low-costs; instead crews have to work early flights from other countries or local flights to reduce accommodation cost away. FSC are stopping secondary airports operation (Dennis, 2007).

Variables that affect the FSCs operation costs are the seat allocation, number of handle baggage and use of loading bridges (not used by LCCs) because they delay the turn-around time of the aircraft. Loading bridges for example improve higher level of passenger service but they slow down boarding and alighting, due to the use of just the front entrance/exit. The minimization of the number of baggage encourage passenger to have more hand baggage in the cabin and it takes people more time to put it into the overhead compartment. Then FSCs have to improve other kind of strategies to contra rest the turn-around delay problems giving passenger more time and getting more passenger satisfaction as a FSC brand. Finally, offering business and economy class, be compatible with the long-haul products for connecting passenger, the strategy of concentrate at the major hubs and off-loading peripheral routes are the most successful strategies for FSC network carriers (Dennis, 2007).

Table 4 shows the FSC operation model characteristics.

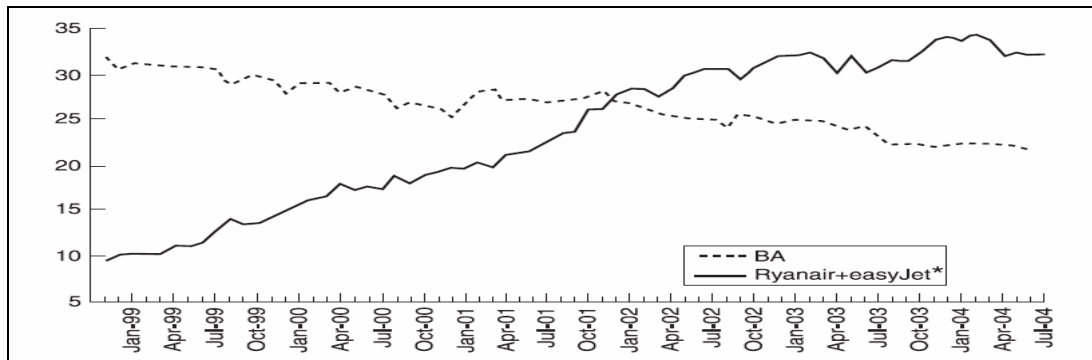
**Table 4: FSC operation model (Hunter, 2006)**

<i>Strategy</i>	Differentiation
<i>Scale</i>	Typically large
<i>Model</i>	Hub and spoke/Multi hub and spoke
<i>operations</i>	Mix of short, medium and long-haul flights
	Different aircraft types and engines
	Moderate aircraft capacity utilization (60%)
<i>Market</i>	Different class of service and qualities (economic class, business class, and first class) including:
	Frequent scheduling and flight flexibility, Extensive in-flight services, Ground services, Main airports
<i>Inventory</i>	Travel agents, feeder routes, in-flight service and pre
<i>Management</i>	arranged tickets and seats

### 3 Low-cost model

The recent years increase LCC concept has been supported by the high stress in the airlines market produced by sudden fluctuations of economic conditions (Aldamari and Fagan, 2005). The LCC model refers to the low-cost scheduling airlines or no-frill sector. LCC main customers are leisure and business passengers (Williams, 2002).

The liberalization and deregulation have helped LCCs to gain market and be profitable whilst for customer's LCCs have provided more accessibility to travel offering lower prices (Gillen and Ashish, 2004). The blue line in figure 1 (LO) shows how low-cost airlines suddenly decreased profit margins after the terrorist attack 9/11 2001. However, LCCs maintained positive operation profit margins during that period of time. Figure 2 shows how Ryanair and EasyJet got more passengers on-board in short-haul flights than British Airways who loose market from 1999 to 2004.



**Figure 2: Growth of Ryanair, EasyJet + Go VS British Airways 2004. Values are the percentage share of passengers on-board all UK and domestic schedule flights (Aldamari and Fagan, 2005)**

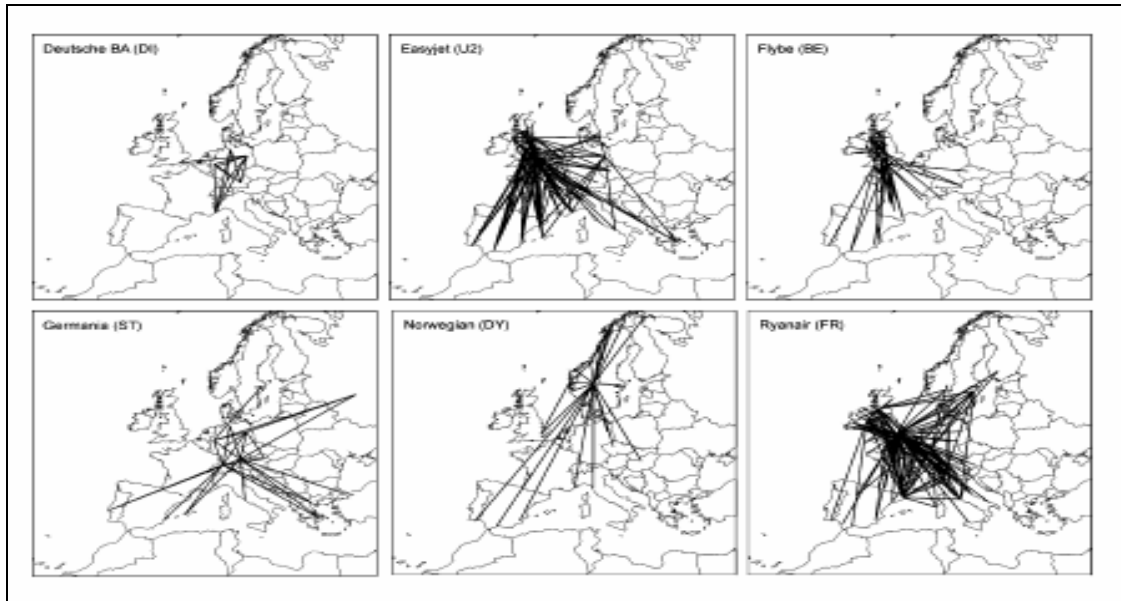
During the last years, LCCs have grown at approximately 25% per annum inside the EU and they are carrying around 10% of short-haul EU flights, their main business. By 2010 LCCs are expected to carry over 33% of the short-haul market, what also represents a big opportunity for airports to increase their revenues giving service to LCCs (Graham, et al 2003). Figures 1 and 2 show how successful low-cost model has been in the short-haul airline industry. Nowadays, some LCCs are flying long-haul markets, such as JetStar from Australia to Far East. According to Forsyth (2007) it is likely that long-haul LCCs will appear in the future.

### 3.1 LCC network routing system

The basic strategy is to provide short-haul point-to-point services (Gillen and Ashish, 2004). LCCs focus their traffic flows around a selective number of key nodes (Reynolds-Feighan, 2001). These nodes determine the LCCs point-to-point routing network system.

The majority of the LCCs focus on point-to-point flights but some LCCs such as AirBerlin use a HS network system. Normally, LCCs do not focus on connection traffic, even though they are not completely out of it, but passenger must do it by themselves (Gillen and Ashish, 2004). As they grow, some LCCs point-to-point networks fall into a quasi hub-and-spoke system, with only one way fare (Aldamari and Fagan, 2005). This allows LCCs networks expansion and increase number of destinations making independent flights (point-to-point) to a hub (Aldamari and Fagan, 2005). Some LCCs can offer connections in conjunction with the original one-way fare and be able to serve more origin/destinations points that can not be connected with a point-to-point system.

Figure 3 shows the network routing system of six EU LCCs.



**Figure 3: LCC network carriers (Dobruszkes, 2006)**

### 3.2 LCC strategies, variables and operation model characteristics

The LCC business model main characteristic is to reduce costs and fares as much as it is possible (Hunter, 2006).

The main aircraft operation strategies for a low-cost carrier are: minimize turnaround times, increase flying hours, maximize aircraft utilization and increment the number of seats in the aircrafts to the maximum available. Table 5 explains the operation strategies for the LCC model.

Ryanair is the most profitable LCC carrier in EU and it is the closest model to the original Southwest model: it does not provide service, food, jet ways, frequent flyer programs, refunds, travel agents, print tickets and connections. Food and duty free items are sold on board (EasyJet does not sell duty free items). All the tickets are sold direct by internet or call centres.

Some LCC strategies to get revenues are: advertising on seatback trays, head rests and on the aircraft exterior. Also car rentals, travel insurance and travel reservation services are offered.

An operation strategy apply by some airlines such as Raynair and EasyJet is the outsourcing of everything other than cabin crew, pilots, reservation agents, head office functions and to some extent, maintenance. This strategy, allows airlines to have an aggressive expansion, advantage negotiation with airports and signing long-term contracts. On the other hand, other LCCs, like Southwest, do not outsource looking for common labour interest, loyalty and high quality service (Gillen and Ashish, 2004).

Low-cost airlines use a common type of aircraft for their flights such as a unified fleet B737. Nowadays, some airlines have changed this operation strategy and EasyJet now

fly a second fleet A319s instead of B737 because the price was attractive and it did not increase operation costs.

**Table 5: LCC operation model (Hunter, 2006)**

<i>LCC Characteristics</i>	<i>LCC model strategies</i>
<i>General strategy</i>	Minimization of the operation costs and cost leadership
<i>Size</i>	Southwest, EasyJet and Ryan air are big but normally LCC airlines are smaller than FSC airlines
<i>Operational mode</i>	Point to point, no connection, short-haul (400 to 600 nautical miles) Uniform aircraft type (Boeing 737) High seat density and high capacity utilization Short turn around time
<i>Market</i>	Cheap air passenger sector market, time of booking and choice of flight Few flexibility to change flights No food and drinks Typically use secondary airports Some of them do outsourcing in ground service
<i>Inventory Management</i>	Electronic ticket or tickles, no travel agency and internet booking or direct

Normally, a LCC flies from secondary/regional airports to secondary/regional airports, but today some LCCs serve main airports (hubs) such as Amsterdam Schiphol to bring business passenger (Gillen and Ashish, 2004).

To achieve differentiation some LCCs such as WestJet includes light snacks, a small selection of beverage and seat selection on check-in. Ryanair sells in-flight service at additional prices (Guillen and Morrison, 2003).

Apparently every LCC has developed their own cost leadership, differentiation and focus strategies to attract passengers and growth.

Variables that affect the LCC model are number of flights, number of destinations, connections, frequency and number of routes because if they are not big enough they will not be able to have a big network to compete against other LCCs or FSCs (Dobruszkes, 2006).

### **3.3 LCC model in long-haul airline operations**

The Association of European Airlines (AEA) has determined that a long-haul flight last 6 hours or more, other wise it would be medium-haul (Graham, et al 2007).

It has been demonstrated that the LCC model is less compatible with long-haul flights. Shorter routes offer major opportunities to achieve cost advantages. In a long-haul operation the duration of the flight and the passenger minimum quality service requirements reduce possibilities to minimize operation costs for long-haul carriers using LCC strategies. Furthermore, some short-haul strategies such as seat pitch size

reduction are difficult to be applied in a long-haul operation. FSCs have lower seat mile costs in long-haul operations than LCCs in a short-haul operation and hence they already offer competitive long-haul fares. In eight hours flights catering service is needed, in-flight entertainment is important, number of toilets can not be reduce as it can in short-haul operations and the amount of baggage to be handle is larger. Finally, hubs are crucial in long-haul flights (Humphreys et al, 2007). On the other hand, e-ticketing and e-marketing is already used by the long-haul FSC.

LCCs do not carry cargo because they want to minimize times i.e. turn around, whilst FSC carry cargo in long-haul because it increases revenues. LCC models operate secondary airports, whilst long-haul flights find secondary airports difficult to operate because they normally do not have runway and terminal with capacity to operate big aircraft, so new infrastructure and investments would be needed. Finally, long-haul operations incur in crew accommodation cost because it is not possible to return to base each trip.

Low-cost long-haul business is more likely to happen for a pure leisure markets because it does not demand high frequency. Also, dense point-to-point markets with a modest market share to operate one flight per day (Humphreys et al, 2007). New airlines are applying new low-cost long-haul strategies such as Mytravel (pay extra for food and entertainment), Wardair (high-quality but high density seats), Britannia (29in seat pitch) and Emirates (full service at low fare) (Graham et al, 2007).

The main problem for a long-haul low-cost model is that as distance increases, operating cost rises and unit costs decrease. Aspect that influence the costs are: fuel burn, crew cost, maintenance cost, passenger services, over-flight, security requirements, airport facilities and turn-around times, route density and distribution challenges. To be successful a long-haul low-cost airline must find advantages in these factors and find markets where lower fares can be profitable. Some characteristics of these models are: strong local catchment areas, affluent leisure and VIP traffic, seasonal and economic balance, availability of peak-time slots and seven to twelve hour length (Wensveen, 2007).

Opportunities could exist in developing of long-haul in conjunction with solid short-haul network (Hind, 2007). Long-haul low-cost carriers should concentrate on niche markets with the possibility to connect with other markets (Wenseveen, 2007).

New aircraft technology such as A380 and B747-800 could reduce unit costs undercutting the seat mile cost. Small aircraft with high density layout and long-haul point-to-point operation capacity such as B787 and A350 could be used as a unified fleet.

## **4 Charter Model**

Charter carriers have the lowest operating costs of all the models and their main focus is the tourism market. They could be considered as low-cost carriers, with some difference with the low-cost airlines no-frills sector known as LCC in this paper.

Charter airlines have small margins and their size is small compared with FSCs and LCCs. They serve flights included in a holiday package (hotels, transportation to

hotels and airports, different holiday activities, etc.) that are usually booked in advance. The charter companies rent an aircraft to fly a specific route on a determined day. These carriers are responsible for selling all the seats available, they need to have a high load factor to have profits. For this reason, they normally have higher occupancy than LCCs and FSCs.

Table 6 shows the charter model characteristics.

**Table 6: Charter model characteristics (Papatheodorou and Lei, 2006)**

Primary air service provider for leisure holidays purpose in Europe.  
 These airlines are the first low-cost airline concept  
 Dense seat configuration and high passenger load factors allowing low unit costs  
 Irregular and sometimes inconvenient schedules  
 They use most of the time secondary airports to reduce airport costs and fees  
 Basic in-flight service. Some companies serve meals and other are no-frill, it can depends on the travel haul distance (short or long) and company strategy  
 Point-to-point flights

Opposite to the FSCs and LCCs that charge premium prices for tickets purchased far from the departure dates, charter airlines drop fares as close as the aircraft takes off because the airline needs to fill empty seats offering big discounts fares. In the case that the flight is not full, the charter airlines will just cancel the flight because it will not be profitable. Due to the necessity of high load factors a charter flight usually has more penalties than the LCCs and FSCs. They do not offer refund on cancellations but they overcome the disadvantage by allowing people to transfer their ticket to other person charging a small amount of money.

The majority of the charter carriers are owned by tour companies, which incorporate tour operator, travel agencies, airline, and sometimes hotels and ground transportation (Williams, 2002). These types of carriers are more focussed to get revenues from the leisure business they offer to their costumers and sometimes they can have losses in their flight operations but they overcome this with the profits get it from the tourism activities. Some charter airlines rent available seats to other airline companies when the aircraft is not full.

Tourisms passengers are the main customers for charter airlines and it is known as leisure traffic. It involves activities such as visiting friends and relatives, health treatment and pilgrimage. Tourism represents a big economy and generates a lot of jobs. Many economies in the world, such as Caribbean and Mediterranean (Papatheodorou and Lei, 2006), depends on the tourism and charter airlines make agreements with hotels and local governments for bring tourist as a strategy.

Most of the charter airline companies belong to another carrier, i.e. Thomson to Britannia, Thomas Cook to Air 2000, etc., but some of them are still being independent such as Aero Lloyd, having a few number of different types of aircrafts depending on the short-haul (Airbus 320 with 180 seat, Boeing 757-200 with 235 seats, and Airbus 321 with 220 seats) or long-haul (Boeing 757-300) (Williams,

2002). Also Charter airlines such as Monarch have moved into the scheduled business and Thomsonfly offers seat only charters on a range of new routes (Dennis, 2007).

## 5 Comparison between the LCC model and the other business models (FSC and Charter)

Perhaps the most important LCC model business strategy has been the introduction of cheap one way fares. It has undermined the price discrimination power of the FSC model (Tretheway, 2004). LCC business model strategies have obligated FSC models to look into their process to identify what operation costs can be exploited or reduced by new strategies to compete against low-cost airlines in the short-haul market and to minimize costs in long-haul operations. If FSCs do not minimize operation costs and drop fares, they will not be able to compete against low-cost airlines on the short-haul market, who have won an important piece of the market during the last year.

Low-cost carrier networks are smaller than full-service carriers because they have been in existence for a shorter period. LCC networks and their traffic flows can be very different not just according to the airline size, but also to the average non-stop distance flown. Some LCCs operate short-haul, point-to-point strategy with little or no connecting traffic and lower concentration levels in their network. Other LCCs, according to their average non-stop flights, operate medium and long-haul markets with a high concentration of traffic connections around their hubs on a hub-and-spoke system commonly used by full-cost carriers (Reynolds-Feighan, 2001).

**Table 7: Key features of LCC and charter model (Williams, 2002)**

<i>Features</i>	<i>LCC</i>	<i>Charter Airlines</i>
Direct sell	X	
Extensive outsourcing	X	Some of them
High density seating	X	X
High public awareness	X	
No in-flight catering	X	
Pre-book able seats		X
Point-to-point traffic only	X	X
Seat assignments		X
Secondary airports	X	Some of them
Short haul focus	X	
Short turnarounds	X	
Single aircraft type	X	
Single class cabin	X	X
24 hour operations		X

It is becoming more difficult to make a clear distinction between the business models. FSC are applying LCC strategies to minimize operation costs and drop fares, and some LCCs are developing HS networks instead of point-to-point routing systems because it is impossible to connect all the airports with a point-to-point network when the airlines get bigger and they need to expand their networks. The business strategies are very different, making it more difficult to classify them into a LCC or FSC model.

In the case of the charter model, it has been very complicated to distinguish it from the LCC because the charter model is also a low-cost operation model, with other characteristics (see Table 7). In fact, charter airlines have lower cost than low-cost carriers and the highest load factor between the airline business models (Williams, 2002) but at expense of schedule and less opportunity to get ancillary revenues from luggage (Hind, 2007). Table 8 shows the cost advantages for both models (Williams, 2002).

**Table 8: Cost advantages (Williams, 2002)**

<i>Characteristics</i>	<i>LCC</i>	<i>Integrated Charter</i>
Larger aircraft	Not all	X
Longer sectors		X
Higher load factor		X
Higher aircraft utilization		X
Higher labor productivity		X
Lower distribution costs		X (tour operator)
Lower passenger service costs	X	
Lower landing fees	Not all	X
Lower insurance premiums	Not all	X
Lower aircraft leasing costs	Not all	X
Lower admin. and finance costs		X (Partially tour operator)

## 6 Conclusions

As a first step to identify the main parameters to be involved in a new model able to minimize operation costs and fares and maximize profits, a literature review about airline business model strategies was done and presented on this paper.

Three main passenger airline business models can be defined: full service carrier (FSC), low-cost carrier (LCC), and charter model. To minimize operation costs, drop fares and maximize profits those business models base their strategies on one or more of the following concepts: cost leadership, differentiation and focus strategy.

Airline costs are: flight crew salaries and expenses, fuel and oil, airport and en-route charges, aircraft insurance, rental/lease of flight equipment/crews, engineering staff costs, spare parts consumed, maintenance administration, flight equipment, ground equipment and property, crew training, ground staff, buildings, equipment, transport, handling fees, cabin crew salaries and expenses, and passenger insurance.

Aircraft main costs: crews salaries, block hours, fuel price, aircraft performance, mile flown, labour rates, aircraft design and age, number of flight hours, aircraft size (weights/seats), number of departures, salaries and contract rates.

To minimize airline operation costs and reduce fares, FSCs have been using LCC strategies to become more competitive against the LCCs networks in the short-haul market but they also are using opposite strategies to the LCC models to achieve differentiation.

Characteristics of the FSCs are: hub and spoke/multi hub and spoke, mix of short, medium and long-haul flights, different aircraft types and engines, moderate aircraft



capacity utilization (60%), different class of service and qualities (economic class, business class, and first class) including: frequent scheduling and flight flexibility, extensive in-flight services, ground services, main airports, travel agents, feeder routes, pre arranged tickets and seats, number of destinations.

LCC model refers to the low-cost scheduling airlines or no-frill sector, each carrier has its own operation strategies and they are different to the original Southwest model. LCC model is different to the charter model which is the low-cost operation model with the highest load factor.

Variables that affect the LCC model are: number of flights, number of destinations, connections and frequency. If a LCC is not big enough it will not be able to have a big network to compete against other LCCs or FSCs

The main aircraft operation strategies for a low-cost carrier are: minimize turnaround times, increase flying hours, maximize aircraft utilization and increment the number of seats in the aircrafts to the maximum available.

The main problem for a long-haul low-cost model is that as distance increases, operating cost rises and unit costs are enough low to be decreased more. Variables that influence the costs are: fuel burn, crew cost, maintenance cost, passenger services, over-flight, security requirements, airport facilities and turn-around times, route density and distribution challenges, passenger minimum quality service, seat pitch size, low seat mile costs, competitive long-haul fares, catering serviced, in-flight entertainment, aircraft layout, baggage handle and use of hubs. Some characteristics of these models are: strong local catchment areas, affluent leisure and VIP traffic, seasonal and economic balance, availability of peak-time slots and seven to twelve hour length.

There is an opportunity for all airlines to reduce costs as they have been doing in the long-haul airline operations. New aircraft technologies (A383, B747-800, A350 and B787) and better niche markets choice can be an option to achieve new low-cost strategies in a long-haul low-cost business model.

Charter airlines have the lowest operation costs. It focuses mainly on leisure market. Its margin and size compared to the FSCs and LCCs are small. They sell flights trip in a holiday package usually booked in advance. The charter model needs to have a high load factor to get profits and operate otherwise flight would be cancelled.

Charter model characteristics are: Leisure holiday market, dense seat configuration, high passenger load factors, low unit costs, irregular and sometimes inconvenient schedules, use of secondary airports, basic in-flight service, and point-to-point flights.

All the business models at the end have some similarities in their operation strategies: minimize turn-around times, increase flying hours, maximize aircraft utilization and increase layouts to the maximum permissible.

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