

Mergers and Acquisitions in the European Airline Sector

- *M&A's by network carriers and low-cost carriers* -

Bachelor thesis Economics and Business Economics

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Rotterdam, 20-07-2011



Key words

Mergers and Acquisitions, Airline Sector, EU, Network Carriers, Low-Cost Carriers, Strategies.

"-the money that had been made since the dawn of aviation by all of this country's airline companies was zero. Absolutely zero." – *Warren Buffet, 1999 (billionaire investor)*

Abstract

This thesis will examine Mergers and Acquisitions in the airline sector in the EU. The aviation industry is a unique sector in the economy. This industry is also an unstable and unpredictable business. Most empirical researches on M&A activity have looked at aggregated data and combined sectors. This thesis tries to investigate the M&A's in a specific sector as the airline industry is by looking into detailed information provided by a M&A database. The two rival business models (low-cost carriers and network carriers) have intensified the competition in the sector. The M&A deals by large network carriers show that they do not perform M&A's to adapt their company to another business model but merely for strategic reasons. There is no trend that the large network carriers try to incorporate new innovative low-cost business models. On the contrary, the major carriers are seeking to consolidate with comparable firms using the same business models to benefit from economies of scale and scope. The low-cost airlines try to seek other low-cost airlines in the same market to acquire or to merge with, this to increase market power and weaken the competition on important routes. As a consequence, these mergers are finding obstacles in regulatory boards and governments. M&A deals also reveals that having slots in large airports is very important to increase market power, therefore acquiring companies are willing to pay for this type of assets. For the future it is expected that the M&A activity is not going to stop and that the consolidation process in the airline sector will continue and that among the low-cost airlines strong M&A dynamics will continue.

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1. Introduction

This thesis will examine Mergers and Acquisitions in the airline sector. The aviation industry is a unique sector in the economy and this sector offers many opportunities for economists to conduct research on. Billions of dollars are spent every year in the economy by firms on Mergers and Acquisitions (M&A). The figures are impressive: M&A deals were worth \$2.8 trillion in 2010, up from \$2.3 trillion in 2009. (The Economist, June 21st 2011). This is over \$7.5 billion a day. The M&A industry has turnovers which exceeds the GDP of many countries with distance. These facts are reasons why a lot of research has been done on the phenomenon M&A's. The goal of this thesis is to conduct an analysis on the mergers and acquisitions in the airline industry in the European Union. Further, to examine if there are differences in behaviour in the sector between traditional network carriers and low-cost carriers. In brief, the goal is to better understand the specific dimensions that the M&A phenomenon has in this industry.

1.1 Structure

In the first section the characteristics of the airline industry are described, then the relevance of analysing M&A activity in the sector is stated and the hypotheses are described. In the next section the theoretical framework is formed. Previous literature and theories which are relevant for the M&A behaviour in the airline sector is described. The motives for M&A's and previous research on the M&A's in the airline sector are examined. In the third section there is going to be looked at the global airline industry and the recent developments, including the structure of the industry and the dominant business models in the sector. In the fourth section the data that is being used to analyse the M&A's is explained. After that the fifth section will give more insight in the M&A deals in the sector. In the sixth and last section conclusions are drawn and the limitations are described. And last some recommendations for future research are provided.

1.2 The airline industry

The airline industry had a turnover level of \$554 billion in 2010 and is expected to grow in 2011 to a level of \$598 billion in 2011. (IATA, Jun. 2011) Overall, the airline industry cannot be seen as the most profitable industry existing. It is expected that the industry as a whole will report a profit over 2011 at a level of \$4 billion. This would indicate a margin of 0,7%. Some critics describe the industry as an unprofitable business and as a taxpayer black hole (Kay, 25 Jan. 2005). According to IATA (The International Air Transport Association) the airline industry has never returned the cost of capital. Consolidation could be a mechanism that changes this. But according to IATA this has never been viable internationally in a hyper-fragmented market governed by antiquated regulations (IATAREport, 2010). The airline industry is also an unstable and unpredictable business and very vulnerable to shocks

because demand can drop quickly (Wensveen, 2009). Air travel has always been a strong cyclical business. But air traffic is still growing over the time, even during recessions the air traffic is growing. Only two times in history it has occurred that the total air traffic had a negative (in passenger kilometres) *traffic* growth, during the Gulf War from 1991 and after the 9/11 attacks. These events boosted the already cyclical downturn (Franke & John, 2011).

1.3 Industry structure of the global aviation industry

The global aviation industry is a very complex industry. In the airline market you can distinguish between several types of airlines. First there are the classical Network Carriers (NC's) and on the other hand Low-Cost Carriers (LCC's) (Franke, 2004). The Network Carriers have a complex hub-and-spoke network (large airports with connections with many destinations) while the Low-Cost Carriers only have a point-to-point network (from airport to airport and no transfers). The NC's are in majority major airlines and are often 'flag carriers' who represent their country of origin. Examples from Europe are: British Airways (UK), Lufthansa (GER), Air France-KLM (FR/NL). Flag carriers were often founded by the government in the pioneering era of the airline industry, for instance to connect the colonial possessions with the mother nation. But although the European Union has induced on going market integration a lot of state influence is still present within these companies and their actions. LCC's are often small companies concentrating on specific profitable routes in the market rather than having a big network. The pioneer of the low-cost model is Southwest Airlines which started in 1971. For Europe the pioneer was Easyjet, this airline broke up the market in the nineties. Major network carriers face a fierce competition since then from the smaller and often more efficient LCC companies.

1.4 Relevance

A reason why it is relevant to look at M&A's in a very specific sector is the fact that it could perhaps deliver some possible underlying sources of motives and reasons for firms to grow by acquiring or merging. Most empirical researches have looked at aggregated data and combined sectors. Because of the nature of the large datasets that often is used; and further, the reason that it is combining different motives for M&A's it is nearly impossible to look into the underlying sources for M&A (Andrade & Mitchell, 2001). They conclude that it is difficult to look at the gains of mergers other than the stock market. Further, that to better understand the sources of value creation more detailed information should be examined. This thesis will look into more detailed information to better understand the M&A's in the airline sector. The airline sector has had several severe crises during the last decade and went often into 'survival mode' by saving cost. These crises have implied a record number of mergers and acquisitions of airlines. Airlines had to rethink their business model, after the several crises that the sector had to cope with. The airlines already focused on cutting costs, stop in flight services, outsourcing operations, and parking older aircrafts (Wensveen, 2009). It is very interesting to see what will happen next. This

thesis tries to investigate the M&A's in a specific sector as the airline industry is by looking into detailed information provided by a M&A database called Zephyr. The database is used in order to identify strategic behavior and developments from various airlines and to analyze the different motives for airlines to merge.

1.5 Hypotheses

The hypothesis that is being examined is that the traditional network-carriers have different M&A motives than the low-cost carriers have. Further, that there are differences in M&A strategies between the different types of firms and their corresponding business models. Until now the airline market knew roughly two types of business models, the network carriers (NC's) with the hub and spoke network model and the low-cost carriers (LCC's) with their point-to-point model. Regarding the continuing consolidation in the market and the several crises that the sector had to cope with it is expected that the several business models that are being used are going to change. A change could be that Network Carriers are trying to acquire low cost Airline-companies to incorporate the low cost business model in their business. A motive to acquire or merge is here to incorporate a profitable business model and to acquire access to regional airports and therewith its point-to-point network. Another hypothesis is that two medium sized (flag) carriers with problems surviving the fierce competition of the LCC's on the one hand and the big major airlines on the other hand will try to merge with another failing firm. So, the motive for these type of mergers is financial distress. The airlines merge in order to prevent that both firms are being shaken out of the market. The business model from the network carriers/flag carriers and the LCC business model have many differences; these differences have consequences for their M&A decisions. Most of the NC's faces lock-in effects. Those airlines have large networks with large mega hubs from where they operate. Further they often still have to cope with state influence. Governments prefer to have an independent airline in order to secure economic benefits from having a NC in the country. Also governments subsidies or stimulate those airlines, either by direct support but often indirect. For example by treating these national airline companies with special regulations and other (tax-)benefits.

2. Theoretical framework

2.1 Previous research on mergers and acquisitions

A lot of academic research has been done on mergers and acquisitions, especially on the effects of M&A and the performance influences M&A's have on firms. The relevant question that most of the available academic literature tries to answer is whether M&A has positive influence on the firm's performance. The economic theory learns that merged firms could benefit from increasing economics of scale, scope and efficiency synergies. Most empirical research tries to find an answer by assessing the returns on stocks to measure the success of M&A events. The conclusion is often that the impact of M&A on a firm's performance is remaining 'inconclusive' (King et al., 2004). Further, King et al. (2004) finds that, looking at other empirical researches that there is no evidence of positive influence of M&A activity on firm performance. Moreover, that existing empirical literature has not clearly and repeatedly identified other variables that have influence on firm performance. They conclude that perhaps other relevant factors other than stock data should be looked into to give a more valuable answer on the question if M&A's have a positive or negative influence of a firm's performance.

2.2 M&A performance looking at stock returns for deregulated sectors

Relevant for the airline sector is the fact that many airlines have been founded by states and have operated in a regulated environment for decades. During the market integration in the European Union during the last decades many airlines had to adapt themselves to a more open market with intensifying competition. There is evidence in the literature analyzing M&A activity in the EU that show that mergers in industries that had previously been under government control (as the airline sector was) or operated in regulated environments generate lower stock value than M&A's in other more unregulated industries. (Campa et al. 2004). They found that the negative M&A return in regulated sectors becomes even more negative when they look at M&A's from two different countries, this finding is important to notice in analyzing M&A activity in the airline sector while the airline sector still has many state influences and is still strongly regulated.

2.3 Motives for Mergers and Acquisitions

A very influential explanation for the existence of M&A is the Free Cash Flow theory from Jensen (1986). This research finds that the level of Free Cash Flow is a deterrent for managers to perform acquisitions. Moreover, that those managers have incentives to grow beyond the firm's optimal size (Jensen, 1986). For the airline sector it is relevant to look at the cash flow levels from airlines performing many acquisitions. There is also evidence that shareholders gain from M&A activity if market power can be exploited (Kim & Singal, Jun. 1993). Thus a motive for M&A activity could be that shareholders demand firms to merge. Chatterjee (1986) finds that merger motives can be summarized into three major groups

of motives, this if you distinguish between vertical, horizontal and conglomerate mergers. First there are financial motives, the idea that the combined companies can reduce the cost of capital by exploiting financial synergies. Further operational gains, exploited by reducing the operational cost by synergy effects. And last value creation by exploiting collusive synergies. Further Chatterjee (1986) finds that if two firms having collusive synergies this will create the most value and that having financial synergy has the overhand on operational synergies. For the airlines sector it would be interesting if those motives also play a role in the M&A activity. Devos (2009) identifies in line with Chatterjee (1986) the relative importance of three major potential benefits of M&A's by measuring value creation for stockholders as a result of M&A's. Operative synergies, market power motives and financial motives are identified. Productive efficiencies, tax savings and increasing market power are three major motives for merging with other firms and to acquire firms.

2.4 M&A's in the Airline sector

Research on the airline sector finds support for the market power hypothesis; this hypothesis states that an important motive to merge in the airline sector could be to increase market power. The total aviation market consists out of large hubs with spokes. Every hub and spoke can be seen as a separate market (Kim & Singal, Jun. 1993). So, the airline industry consists out of many small markets. It is important for large airlines to possess market power on a particular hub and spoke. Market power on particular route is a major driver for profit and a possibility to exploit market power. Kim and Singal (1993) finds that an airline merger leads to higher fares for the consumer. Routes affected by a merger see an average airfare increase from 9,4%. They find that shareholders see a wealth increase as a result from merging airlines. This because of the increased market power in the markets where the airlines operate. The market power effect is stronger than the offset effect of efficiency improvements, what leads to lower fares. They also find correlation between changes in concentration and higher airfare prices in the market. All in all, a wealth transfer from the consumer to the shareholders can be indicated when airlines merge because of more market power. There is evidence that even ongoing discussion about merging between two airlines gives them the opportunity to coordinate their markets, this leads to increasing price pressure on the routes where both airlines are operating. Kim and Singal (1993) conclude: "Getting the two management teams together to discuss merger possibilities provides a relatively safe and convenient forum to arrive at mutually beneficial pricing strategies." Andrade et al. (2001) finds that the view that a significant portion of merger activity might be due to industry level shocks is strongly supported by academic research. Unexpected shocks account for variance in industry merger waves. Thus, in the airline sector you could expect that after oil price shocks, terrorist attacks but also deregulation could lead to a consolidation process. Looking at consolidation trends in the airline sector, Franke & John (2011) expect that the consolidation in the airline sector will evolve in all regions and business models till a few mega-carriers will emerge. Further, other (smaller) airlines will have to focus

on specific niches and regional markets, and that these airlines will affiliate themselves with the large mega-carriers. It will be interesting if this could be distilled from the recent M&A activity in the sector.

3. The global airline industry

The airline industry has specific characteristics. As already stated, demand can change quickly. Furthermore, the industry has high overhead and capital cost. Changes in airline demand lead to huge differences in revenues. In the airline sector two types of business models are dominant. The network carrier (NC) on the one hand and the low-cost carrier (LC) on the other hand. Airline strategy was once politically motivated and decisions to merge or acquire had a completely different (political) dimension. Cross-border mergers were involved with many political issues; every country wants to keep its national airline and governments had the power to decide on that issue (Wensveen, 2009). After the deregulation that has been changed. But still, many government bodies are entitled to stop a merge regarding their national airline. This affects the M&A activity in the airline sector.

3.1 Airlines in strategic network alliances

In the nineties NC airlines organized themselves in large airline networks. Bilateral airline partnerships and strategic alliances emerged to overcome the regulatory restrictions that the network still had to cope with. Commercial freedom in other countries was often denied or had to be granted by bilateral regulatory boards. To cope with these limitations three major alliances have emerged, Star Alliance, Oneworld and SkyTeam. According to IATA (2010) these three alliances represent 70% of international scheduled traffic. Only two of the world's biggest twenty airlines are unaligned with a major alliance. Franke (2004) concludes that these alliances are successful in creating value for the customer (in seamless travelling) and for the companies (in scale effects and market power in acquiring planes, services and IT-systems). But that these alliances have little scope in solving restrictive ownership clauses and that major cost reductions were not fully realised. Question is if these alliances replace the M&A activity in the sector and that it will stop the consolidation process.

3.2 The network carrier (NC) business model

The network carriers (NC's) have a large network of traffic hubs and spokes and their goal is to get as much as possible traffic to their hubs and to transfer that traffic as efficient as possible to another hub. Having many connections is key in this business model. Sophisticated quantitative analyses are used to predict travel demand and match this with the offered capacity in order to boost efficient traffic patterns. (Franke, 2004). In this model it is efficient for the airline to make sure that the traffic on the spokes arrives on the same time in a wave at the hub to connect as many passengers as possible at the same time. The network model implies inherent complex structures what is not always efficient for the customer.

3.3 The low-cost airline (LCC) business model

The low-cost carriers have now a large share of the total airline market. They started in a niche in the total market but they have left this position after several crises in the airline sector and their market share continued to grow. This resulted in the fact that the traditional network carriers have rapidly lost market share to the LCC business model. The LCC airlines now have a total global market share of 24% (in passenger kilometers) in June 2010. But in the European Union it had a big impact, on the European market the LCC market share has grown from 9% to 39% in the last decade (IATA, 2010). The success of the low-cost airline business model has had consequences for the major carriers; Wensveen (2009) finds that NC's have shifted their focus from local short distance markets to long distance routes with more possibilities for better profitability. LCC attract low-yield passengers, often passengers that would otherwise not have chosen to take the plane, this is the so-called latent demand. But in times of economic downturn, LCC's serve also downgraded business class clients from the network carriers (Franke, 2004). The innovation that the LCC brought into the market was that it uses a no-frills concept with easy access to short-haul routes with clear non-restricted prices (e.g. no loyalty-programs that restrict low prices to specific groups) (Doganis, 2001). Special about the LCC business model is that the LCC operate with scheduled point-to-point operations. And that they do not seek linkages with other spokes in a hub to attract transfer passengers; this would make the business model inefficient (Wensveen, 2009).

3.4 Types of Mergers and Acquisitions in the airline sector

Looking at merger data involving major network airlines it is possible to distinguish between two types of mergers. First the 'merger of equals'-type when two airlines, comparable in size but with complementary networks merge. The motive for this type of merger is to reap the fruits from synergies and efficiencies. Secondly there are the mergers with two non-comparable firms, for instance a large network carrier that acquires a small airline that is using the LCC concept or that is operating in a niche. A third type of mergers concerning two failing firms that face financial problems and are threatened to be shaken out of the market. Many flag carriers faced troubles in surviving the downturns in the airline sector. Medium sized airlines without the flexibility of point-to-point networks and without the scale and scope advantages of the major airlines are shaken out of the market easily. Certainly when there is a cyclical crisis strengthened by exogenous shock's, for example the 9/11 period (Franke & John, 2011). A strategic escape could be to merge with another failing medium sized flag carrier to get on another efficiency scale that is capable to maintain sustainable profits. The strategy of merging with another failing firm is mainly advisable if there are major locked-in elements are present, as often is the case with flag carriers. These airlines often have a domestic market what they should serve with a large network and this is limiting their growth opportunities in other markets as they cannot move to another business model. But regarding the continuing deregulation in for instance the EU and ASIAN countries, this threat

is decreasing (IATAREport, 2010). The ongoing deregulation is improving the opportunities for airlines to merge with airlines from other countries what would have been made impossible by institutions in previous periods.

4. Data

To look at mergers and acquisitions in the airline sector data from the Zephyr database is used. The Zephyr database is a database with comprehensive M&A data with integrated detailed company information. This database is used to analyze the M&A's in the airline sector.

4.1 Geographical selection

First the geographical area was defined: the European Union. The European Union (EU) was chosen because of the fact that this market is relevant for the scope of analysis. The criterion was that either the Acquiror or Target should be registered in an EU state. The EU is relevant because it is the region which has the largest share (41,5%) in passenger kilometers (IATAREport, 2010). Moreover, this market used to be a segregated market with national flag carriers operating who originated in each of the member states. The focus is also on the European Union because of the ongoing market integration in this market and this market is currently in an adaption and consolidation process.

4.2 Firm and timeframe selection

For the selection of firms the NACE 511 industry code is used: *NACE 511- Passenger Air transport* (European Nomenclature générale des Activités économiques dans les Communautés Européennes (European Commission, 2011)). The 2002-2011 timeframe is used, this to capture the 9/11 shock that happened in 2001 and to look into the M&A activity in the post- 9/11 timeframe. This because 9/11 was a huge shock in the already on going airline crisis, the 9/11 shock gave birth to a new industry framework (Franke & John, 2011). The major shock implied a further decline in airline travel demand and deepened the crisis that already started in 2000. The crisis for global aviation had many consequences for the structure in the airline market. After the timeframe selection 229 merger and acquisition events were first selected. Many events were dropped because the event was reported by Zephyr as a 'Minority stake' below 30% or it was a small 'share buyback'.

4.3 Analysing deals

The M&A deals are analysed on several financial measurements. The M&A deals are analysed on estimated synergies that the company state at the time of announcement of the Merger or Acquisition. This gives information about the potential benefits of the deal and motives that both companies have. Also important is to look at the Modelled Enterprise values from the M&A deal's (see equation 1). This value gives information about the financial value from the company and the price that the acquiring company had to pay. The enterprise value of a firm assesses the value of the underlying business assets, unencumbered by debt and separated from any cash (DeMarzo, 2008).

(1)

$$\begin{aligned}
 & \textit{Modelled Enterprise value} \\
 & = \textit{Deal value made up to 100\%} \\
 & + \textit{Loans} + \textit{Other short term debts} + \textit{Financial debts LT} \\
 & - \textit{Cash and short term investment} \\
 & / \textit{Pre deal target operating revenue/turnover} \\
 & = \textit{Pre deal modelled enterprise value multiple on operating revenue/turnover}
 \end{aligned}$$

Also the deal value multiple is used to analyse the deals (see equation 2). The deal value is divided by the target turnover in the year prior to the deal. This figure shows how the deal value corresponds with the target company turnover. The deal value multiple shows how many times of the turnover had to be paid by the acquiror. This deal value multiple is a way to measure the company value of the target airline. If the deal was an acquisition of a less than 100% stake the deal value is made up to 100%.

$$(2) \quad \textit{Deal value multiple} = \frac{\textit{Deal value (100\%)}}{\textit{target pre-deal turnover}}$$

5. The mergers and acquisitions in the airline sector analyzed

In this section the M&A activity in the European Union in the 2002-2011 timeframe is being analyzed. First the major mergers in the sector are analyzed; secondly the mergers involving failing firms who face financial distress are discussed. Then the acquisitions by network carriers, airlines operating in niche models and M&A's by low-cost carriers are examined. Looking at the deals also the motives for the M&A event are discussed and also the modeled enterprise values are analyzed and compared to other deals in this sector.

5.1 Major mergers in the sector

The major mergers in the EU in the time period 2002-2011 are the mergers between British Airways and Iberia (deal value € 1,2 billion) and Air France with KLM (deal value € 0.7 billion) . These mergers are comparable in size, turnover and also because it both concerns two flag carriers. The combined companies both become one of the top ten airlines in the world and combine two major hubs in the EU: London and Madrid vs. Paris and Amsterdam. Both mergers implement a dual-hub strategy (Center for Asia Pacific Aviation, 2011). It is relevant to analyze these mergers by looking at financial data. Both mergers expected to reach about the same level of synergies five years after the announcement, BA-Iberia expects around €400 million synergy value, separated in 60% cost savings and 40% revenue improvement. Air France-KLM estimates synergies of around €495 million separated in 60% revenue enhancement and 40% cost savings. Looking at the deal values it can be concluded that the Air France-KLM deal was lower valued than the BA-Iberia merger, because the deal value over the target turnover was 0,12 at the Air-France-KLM deal compared to 0,61 at the BA-Iberia deal (see table 2). Further all variables except the 'Modeled Enterprise Value' show that the BA stockholders had to pay a higher price than the Air France stockholders relatively. But when the 'Modeled Enterprise Value' from the deals is analyzed the perspective changes. Interesting is that this value for the Air France-KLM deal is 0, 69 vs. 0, 53 for the BA-Iberia deal (see table 1). Important to note is that KLM had higher debt-ratio's than Iberia had. Another acquisition by two flag carriers was the Lufthansa-Brussels Air acquisition. Brussels Air was formed from the remains of the Sabena bankruptcy and was acquired by Lufthansa in December 2009. Special about this deal is that it is a staged deal: first Lufthansa acquired 45% and it acquires the remaining 55% at the end of 2011. The total value of the remaining 55% is performance related. According to Lufthansa this deal offers strategic advantages because complementary routes are linked and Lufthansa acquires also better connection with the Brussels hub. Further the routes are complementary because Brussels Air has a strong position on the African market (Aviation Week, 2011). The Modeled enterprise value of this deal was 1,15 (see table 1) this was third highest value from all airline deals in the 2002-2011 period.

5.2 Mergers between failing firms

The most important acquisition of a failing firm was the acquisition of the former Alitalia airline by the Italian consortium Italian Air Company (that already owned Italy's second largest carrier Air One) in August 2008. It pulled the valuable parts from former Alitalia out of its liquidation process. With this deal the Italian government was strongly involved, the government wanted to save their national airline (Flight Global, 2009). A further consolidation development concerning Alitalia was done by Air France-KLM, it acquired a stake in Alitalia in January 2009. The weighted (to 100%) deal value multiple was 0,27 of the Alitalia's turnover. Further the modeled enterprise value was 0,48 (see table 2). These values are quite low (in the lowest quartile of all selected deals), which can be explained by the fact that Alitalia performed bad for a long time by reporting big losses. Both companies see a total synergy value of €395 million to be reached in three years. According to the company this acquisition and by adding Milan as a third hub fit in the multi-hub strategy from Air France-KLM (Flight Global, 2009). Another merger concerning a failed firm was the acquisition of the failing Norwegian airline Braathens by the Scandinavian airline SAS in June 2001. These two national carriers dominated the Scandinavian market. But Braathens was too small to remain an independent airline and the company was reporting severe losses (€200 million on a €695 million turnover in the year prior to the deal). Therefore SAS only had to pay €110 million for the acquisition. The deal between SAS and Braathens had the lowest modeled enterprise value (0,14 see table 1) from the deals analyzed. The motive for this acquisition was that SAS with this deal could acquire more market power. But, as a result of this merger lower frequencies and higher prices were expected by analyst, for Europe the competition with two national airlines was atypical. Further, the existing overcapacity would be reduced as a result of this merger (Airline Business, 2001).

5.3 Mergers and acquisitions by network carriers

The low-cost carriers have been successful in capturing market share from the network carriers and the NC's have steadily lost market share to a variety of more innovative business models (Wensveen, 2009). LCC's fight the NC's with lean processes and operating point-to-point networks instead of hubs. It would be interesting to see if the major network carriers try to incorporate the low cost business model by acquiring or merging with low cost carriers. An example is Lufthansa. Lufthansa did an investment in a US low cost point-to-point carrier called JetBlue airways. Lufthansa acquired 19% of the shares. The motive behind this investment was to cooperate with JetBlue by using code sharing on their destinations. According to Kirby (2007) also the strong market position from JetBlue on the important mega hub JFK-airport offered them a strong position in serving international airlines that serve JFK with the North American market. These characteristics are certainly valued in the deal. The modeled enterprise value with this stake is 1,35 and the deal value was 0,57 of JetBlue's turnover (see table 2). This deal is ranked second in the total M&A's in the 2002-2011 period. All in all, it appears that this NC is acquiring a

LCC for strategic motives, and not for changing its business model. The deal between Flybe and BA Connect also shows that NC's are not keen to move to the LCC concept. BA Connect was a subsidiary from British Airways operating on short regional flights with the low-cost concept. But British Airways decided to sell the company in 2006 in line with BA's strategic focus on the service concept with a large intercontinental network. Flybe acquired BA Connect by paying €156 million and the deal had a modeled enterprise value of 0,4. The deal was ranked 12th out of 19 in the list of analyzed deals (see table 1). This was quite low, but an explanation is that BA Connect was not profitable in the year prior to the deal. But these deals from Lufthansa and British Airways reveal that NC's are not incorporating the low-cost concept yet.

5.4 Acquisitions by network carriers involving niche business models

An example of a NC acquiring a LCC is Air France-KLM that did an acquisition by acquiring a LCC called 'VLM' for short-haul routes to London City. According to Reals (2008) this was done to acquire the majority of slots at the London City Airport. And, further, an important motive was that by acquiring this airline the competition on the Amsterdam-London route was weakened. With this acquisition, the market power motive is very prominently visible. However, the price (€180 million) for this acquisition was rather high: 2,15 times the turnover had to be paid. This is the highest value available in the analyzed M&A's (see table 1). Further, the modeled enterprise value was 2,09, which is also the highest in rank. So, the major assets have probably caused the high values are the strategic 'slots' that the airline VLM had available. This is clearly not a motive to incorporate the LCC business model into the company. This deal also reveals that having slots in large airports is very important to increase market power and further that companies are willing to pay for this type of assets. A comparable acquisition is the acquisition from Elysair-L'avion by British Airways (BA), although the target was not a LCC concept but an acquisition concerning a niche operator. This airline operated in the intercontinental premium market. It was flying on a few specific routes to New York. The motive for this merger was for BA that it saw many synergy benefits. This can be explained by the fact that combining the premium activity from BA with Elysair-L'avion leads to beneficial scale effects although it is a small niche. This affiliation with larger NC's is the trend that Franke & John (2011) expected for niches that would be not sustainable on a stand-alone basis. Also Wensveen (2009) expected that these small product specialists serving the premium market are not likely to make profits.

5.5 M&A's by low-cost carriers

The proposed merger in the LCC market that got the most attention in the 2002-2011 timeframe was the failed acquisition of Aer Lingus by its biggest rival Ryanair. Both companies are using the LCC business model very successfully. But remarkable about Aer Lingus is that the company was until 2006 an Irish flag carrier owned by the government until it got public on the Dublin stock exchange in 2006. The adoption of the LCC concept as a national airline is unique in the sector. This was done because the airline had faced many problems and severe losses in the past like many other flag carriers. The airline was also troubled by the fact that the company had to face strong government influence until 2006. The airline performance suffered for years from overpoliticisation, strong unions and bureaucratic management (Barrett, 2006). After the flotation the company adopted the LCC business model and it became very successful using the LCC and no-frills model. On many its routes it faces fierce competition with the Ryanair company. Soon Ryanair attempted to acquire Aer Lingus, but its attempts were stopped by the European Commission and the Irish government for the fear of reduced competition on European Routes. Ryanair acquired 30% stake in Aer Lingus and did three bids on the remaining shares but all offers were rejected by the Irish government. This failed acquisition process showed that acquiring a legacy carrier is influenced by politics and regulatory bodies. But this was also an example of the strong M&A dynamics in the LCC market. The largest successful merger between two LCC carriers (in deal value) between the analyzed deals was the merger between Easyjet and GOfly with a deal value from €598 million in December 2002. GOfly was acquired by Easyjet and the deal had a modeled enterprise value of 1,03, which is fourth in rank in the deals that are analyzed. Special about the GOfly airline is that it was first a subsidiary from British Airways. But BA made the strategically decision to drop the LCC concept and to fully focus on service concept and sold the airline to venture capital investors. The value of this deal was only worth €154 million in June 2001. This is a major change in value in a short period of time. Mainly due to the fact that GO fly was sold when the market was in decline. But this willingness to pay a high price reflects the willing from Easyjet to grow in order to compete with its rival Ryanair in the UK market (Campell, 2002). Easyjet not only acquired the airline company but it acquired also capacity in important hubs around London. Interesting is that it seems that the LCC concept is not valuable for the NC's but that rival LCC firms are willing to pay high values (measured in modeled enterprise value's) in order to obtain market share and market power. Another deal in the UK market was the acquisition of GB Airways by Easyjet, a franchise partner of British Airways. After British Airways rejected to use the option to buy GB Airways this airline was the target of Easyjet. Although GB Airways used the full service concept (opposite to the Easyjet low-cost strategy) to routes to southern Europe, Easyjet decided to acquire the airline. This was not done to incorporate a full service business model but merely to change the target into the LCC concept. Also a merger involving two airlines operating on the same market was the merger between the Spanish companies Vueling Airlines and Clickair in January 2009. These companies were like Ryanair and Aer Lingus rivaling companies. But as the competition in

the LCC market, the most prominent motive for this merger is the scale synergies that both companies try to achieve. Like the Aer Lingus deal, the European Commission had serious doubts regarding this merger because of their strong position on the Barcelona market, the deal was passed although the merged company had to release slots at the Barcelona airport (Kaminski-Morrow, 2009). Also in the German market two LCC airlines merged, in June 2007 LTU was acquired by Air Berlin, the deal was worth €340 million. The modeled enterprise value (0,19) was one of the lowest in rank in the analyzed deals (see table 1). This was caused by the fact that LTU had to report losses prior to the deal. Also because of the fact that Air Berlin had to takeover debts worth €200 million to decrease the capital cost that LTU was suffering from. This deal did not found obstacles in regulatory boards; there was no fear of market dominance due to the availability of alternatives as Easyjet on the German market. Overviewing the M&A behavior from low-cost airlines you can observe that two airlines operating in a similar geographical area are keen to merge. There is no doubt that small LCC's seek other airlines in the same market to merge in order to benefit from synergies or decreasing the operational or financial cost. Also rivals are likely to merge with each other although regulatory boards are often an obstacle in these types of mergers.

5.6 Future consolidation and expectations for M&A's in the airline sector

An important question is what the future will bring for the airline sector and if there will be a lot of M&A activity in the sector. According to IATA (2010) mergers and acquisitions are a must. To build more efficiency consolidation is necessary in a fragmented market as the airline sector is. Wensveen (2009) concludes that consolidation is taking place within the global alliances and that three evenly distributed network alliances will emerge. Further it is predicted that an alliance with low-cost airlines will emerge to compete with the network alliances. When the state governments and regulatory boards will continue to deregulate the industry and give airlines freedom to merge it is expected that a wave of cross border M&A's will follow (Andrade & Mitchell, 2001).

6. Conclusion

Several crises in the airline industry have induced a lot of merger and acquisition activity. The two rival business models (low-cost carriers and network carriers) have intensified the competition in the sector. The low-cost carriers have steadily taken market share, and because of that revenues from the traditional network carriers with its large hubs and spokes. The deals in the timeframe 2002-2011 are analyzed and several types of M&A's can be distinguished. First the 'merger of equals'-type when two airlines, comparable in size, merge. Secondly the mergers with two non-comparable firms are considered. For instance, when a large network carrier that acquires a small airline that is using the LCC concept or that is operating in a niche. A third type of mergers concerning two failing firms that face financial problems and are threatened to be shaken out of the market. The analyzed mergers and acquisitions in the airline sector show that airlines have several motives to merge. The completed deals show that airlines merge for strategic reasons, for example when firms serve complementary routes and hubs. Looking at the large network carriers, the deals show that they do not perform M&A's to adapt their company to another business model. For airlines operating in niche markets a trend is visible that they affiliate themselves with large NC's, it looks that they cannot stay independent in the market due to a lack of scale. For the low-cost carriers acquisitions are very important to grow and to obtain market share and strong market power on specific routes. Further to acquire slots in airports with a huge market potential. The M&A activity did not reveal that the two major business models (NC vs. LCC) are in a consolidation process and are merging with each other. The hypothesis that airlines will acquire other airline companies in order to adapt to another business model is not supported by the deals that have been examined. There is no trend that the large network carriers try to incorporate new innovative low-cost business models. On the contrary, the major carriers are seeking to consolidate with comparable firms using the same business models to benefit from economies of scale and scope. The mergers between British Airways and Iberia and Air France and KLM are examples of this. In the LCC business a lot of M&A activities have taken place. The large low-cost airlines try to seek other LCC airlines in the same market to acquire or to merge with. They often are merging with LCC's operating in the same geographical market and on the same routes. As a consequence, these mergers are finding obstacles in regulatory boards and governments. These regulatory boards fear that market power is going to be exploited and previous research has revealed that this is a real threat. It could become a trend that the LCC's will continue to consolidate to benefit more from economies of scale and that in the end some large LCC's will emerge. For the future it is expected that the M&A activity is not going to stop and that the consolidation process in the airline sector will continue. The authorities and regulatory boards play as it always have been in the past an important role in these trends. As the airline market is still regulated compared to other markets.

6.1 Limitations

There are several limitations by analyzing M&A deals in the airline sector. First, the information was extracted from a database. This has several limitations as not all information concerning the M&A's in the sector are available in such a database. Further, it is difficult to compare all deals on the same measurements. Some companies do not provide their financial data or it is often incomplete. Doing this analysis many deals were dropped and not analyzed, for example if the deal was about a very small change in ownership. To draw more conclusions on the factors of success of the M&A's in the sector more data should be available and the performance of the firms should be examined over several years.

6.2 Future research

The airline sector had to cope with many crises in the last decade. An appealing phenomenon in the sector is the so called 'parked airplanes'. In 2010 4476 commercial airplanes were parked (Aviation Week, 2011). Aircrafts are often parked in the desert. This is a historical record, and moreover the average age of the aircrafts that are parked is getting younger and younger. It would be interesting to examine what causes this phenomenon and if it either destroys or keeps economic value. What does this phenomenon tell about the economic circumstances that the airline sector is operating in? Further, it would be interesting if there are differences in the way that the NC's and the LCC's integrate their acquisitions. Would the major carriers behave differently from the Low-cost counterparts in making the most out of the merged or acquired companies? This is a question that should be further looked into.

7. Appendix

Deals Ranked on Modelled enterprise values.				Status	Modelled enterprise value	Value (* 1000 EUR)	Deal value multiples	Target total assets	Target shareholder funds	Target market capitalisation
Rank	Acquirer name	Target Name	Deal							
1	AIR FRANCE-KLM SA	FR VLM AIRLINES NV	Acquisition 100%	Completed	2.09	180000	2.15	5.09	21.48	n.a.
2	DEUTSCHE LUFTHANSA AG	DE JETBLUE AIRWAYS CORPORATION	Minority stake 19.11 1%	Completed	1.35	213238	0.57	0.29	1.56	1.52
3	DEUTSCHE LUFTHANSA AG	DE SN AIRHOLDING SA/NV (Brussels Air)	Minority stake 45%	Completed	1.15	665000	0.99	n.a.	4.15	1.44
4	EASY JET PLC	GB GO FLY LTD	Acquisition 100%	Completed	1.03	598610	1.6	2.49	19.46	n.a.
5	SAS AB	SE SPANNAIR SA	Acquisition increased stake from 49% to	Completed	0.73	112100	0.49	n.a.	10.84	n.a.
6	AIR FRANCE SA	FR KLM ROYAL DUTCH AIRLINES NV	Acquisition 100%	Completed	0.69	784000	0.12	0.1	0.53	n.a.
7	CAI COMPAGNIA AEREA ITALIANA SPA	IT AIR ONE SPA	Acquisition 100%	Completed	0.64	300000	0.4	n.a.	4.55	n.a.
8	RYANAIR HOLDINGS PLC	IE AER LINGUS GROUP PLC	Minority sta. 25.4% to 29.4%	Completed	0.61	51841	1.16	1.59	1.59	0.92
9	INTERNATIONAL CONSOLIDATED AIRLINES GROUP	ES IBERIA LINEAS AEREAS DE ESPAÑA SA	Acquisition increased from 13.15% to 100%	Completed	0.53	2298040	0.61	0.53	1.76	1.46
10	EASY JET PLC	GB GB AIRWAYS LTD	Acquisition 100%	Completed	0.53	139311	0.41	n.a.	3.13	n.a.
11	AIR FRANCE-KLM SA	FR ALITALIA - LINEE AEREE ITALIANE SPA	Minority stake 25%	Completed	0.48	323000	0.27	n.a.	3.39	1.16
12	FLYBE LTD	GB BA CONNECT LTD	Acquisition 100%	Completed	0.4	156159	0.3	n.a.	n.a.	n.a.
13	VUELING AIRLINES SA	ES CLICKAIR SA	Acquisition 100%	Completed	0.34	175000	0.39	1.09	6.48	n.a.
14	CAI COMPAGNIA AEREA ITALIANA SPA	IT ALITALIA - LINEE AEREE ITALIANE SPA	Acquisition 100%	Completed	0.33	1000000	0.21	0.28	2.47	0.9
15	BRITISH MIDLAND PLC	GB BRITISH MEDITERRANEAN AIRWAYS LTD	Acquisition 100%	Completed	0.32	45536	0.28	0.85	3.68	n.a.
16	AIR BERLIN PLC	GB LTU LUFTTRANSPORT UNTERNEHMEN GMBH	Acquisition 100%	Completed	0.19	340000	0.32	0.82	31.78	n.a.
17	SAS GROUP AB	SE BRAATHENS ASA	Acquisition 100%	Completed	0.11	110561	0.14	0.21	6.12	n.a.
	BRITISH AIRWAYS PLC	GB ELYSAIR SAS	Acquisition 100%	Completed	n.a.	68000	n.a.	n.a.	n.a.	n.a.
	RYANAIR HOLDINGS PLC	IE BUZZ	Acquisition 100%	Completed	n.a.	20100	n.a.	n.a.	n.a.	n.a.
Averages:					0.68	405435.07	0.61	1.21	7.99	1.23

(Deal value+short debits-loans - cash)/target pre-deal turnover	Value (* 1000 EUR)	Deal value (100%)/target pre-deal turnover	Deal value (100%)/pre-deal total Assets	Deal value (100%)/target shareholder funds	Deal value/target market cap

Table 1

Deals involving NC's/Flag carriers. Ranked on deal value.

Deal Number	Zephyr number	Acquirer name	Target Name	Deal	Status	Value (* 1000 EUR)	Deal value multiple	Modelled enterprise value	Target total assets	Target shareholder funds	Target market capitalisation
1.	120266	INTERNATIONAL CONSOLIDATED AIRLINES GROUP SA	IBERIA LINEAS AEREAS DE ESPAÑA SA	ES	Acquisition increased from 13.15% to 100%	2298040	0.61	0.53	0.53	1.76	1.46
3.	637433	CAI COMPAGNIA AEREA ITALIANA SPA	ALITALIA - LINEE AEREE ITALIANE SPA	IT	Acquisition 100%	1000000	0.21	0.33	0.28	2.47	0.9
4.	130540	AIR FRANCE SA	KLM ROYAL DUTCH AIRLINES NV	NL	Acquisition 100%	784000	0.12	0.69	0.1	0.53	n.a.
7.	1601039897	AIR FRANCE-KLUM SA	ALITALIA - LINEE AEREE ITALIANE SPA	IT	Minority stake 25%	323000	0.27	0.48	n.a.	3.39	1.16
12.	603696	DEUTSCHE LUFTHANSA AG	JETBLUE AIRWAYS CORPORATION	US	Minority stake 19.111%	213238	0.57	1.35	0.29	1.56	1.52
15.	548032	AIR FRANCE-KLUM SA	VLM AIRLINES NV	BE	Acquisition 100%	180000	2.15	2.09	5.09	21.48	n.a.
25.	101587	SAS AB	SPANAIR SA	ES	Acquisition increased stake from 49% to 74%	112100	0.49	0.73	n.a.	10.84	n.a.
26.	128131	SAS GROUP AB	BRAATHENS ASA	NO	Acquisition 100%	110561	0.14	0.11	0.21	6.12	n.a.
31.	655094	BRITISH AIRWAYS PLC	ELYSAIR SAS	FR	Acquisition 100%	68000	n.a.	n.a.	n.a.	n.a.	n.a.
32.	640033	DEUTSCHE LUFTHANSA AG	SN AIRHOLDING SA/NV (Brussels Air)	BE	Minority stake 45%	65000	0.99	1.15	n.a.	n.a.	n.a.
					Completed	65000	n.a.	n.a.	n.a.	n.a.	n.a.
					sm						
Averages:						127359.80	0.87	1.09	1.86	8.83	1.48

Table 2

Deals involving LCC's ranked on deal value.

Zephyr number	Acquirer name	Target Name	Deal	Status	Value (* 1000 EUR)	Deal value multiples	Modelled enterprise value	Target total assets	Target shareholder funds	Target shareholder
115312	EASYJET PLC	GO FLY LTD	Acquisition 100%	Completed	598610	1,6	1,03	2,49	19,46	
526342	AIR BERLIN PLC	LTU LUFTTRANSPORT UNTERNEHMEN	Acquisition 100%	Completed	340000	0,32	0,19	0,82	31,78	
160103402	CAI COMPAGNIA AEREA ITALIANA	AIR ONE SPA	Acquisition 100%	Completed	300000	0,4	0,64	n.a.	4,55	
613607	VUELING AIRLINES SA	CLICKAIR SA	Acquisition 100%	Completed	175000	0,39	0,34	1,09	6,48	
488906	FLYBE LTD	BA CONNECT LTD	Acquisition 100%	Completed	156159	0,3	0,4	n.a.	n.a.	
567536	EASYJET PLC	GB AIRWAYS LTD	Acquisition 100%	Completed	139311	0,41	0,53	n.a.	3,13	
562985	BRITISH MIDLAND PLC	BRITISH MEDITERRANEAN AIRWAYS	Acquisition 100%	Completed	45536	0,28	0,32	0,85	3,68	
173036	RYANAIR HOLDINGS PLC	BUZZ	Acquisition 100%	Completed	20100	n.a	n.a	n.a.	n.a.	
567671	RYANAIR HOLDINGS PLC	AER LINGUS GROUP PLC	Minority stake	Completed	51841	1,16	0,61	1,59	1,59	
Averages:					202950,80	0,61	0,51	1,37	10,10	

Value (* 1000 EUR)	Deal value (100%)/target pre-deal turnover	(Deal value+short debts+loans - cash)/target pre-deal turnover	Deal value (100%)/pre-deal total Assets	Deal value (100%)/target shareholder funds
202950,80	0,61	0,51	1,37	10,10

Table 3

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