The Air Transport Sector after 2010: A Modified Market and Ownership Structure

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This paper outlines the future possible scenarios that the air transport sector may evolve into after 2010, starting from the most important trends from the past and actual market developments. A big market shift was the liberalization which was introduced in the 1990's, which led to an improved capacity utilisation for both passengers and freight. The impacts on and reactions from airlines have been different over continents and over types of companies. Furthermore, increasing importance has been attached to yield, pushing airline companies towards various forms of co-operation and integration. In the future, some more developments may change the air transport market. First, we may expect a stronger split between traditional air transport and niche markets. Second, privatisation may be strengthening, not only among airlines, but also in airports. Third, mergers and acquisitions may drastically shift the market and lead to new competitive balances. Fourth, the Southwest model, based on low costs and low fares, is likely to survive, although some maturity is observed, but new products emerge. Fifth, the relatively large number of bankruptcies is a new phenomenon for air transport. Carriers not belonging to strategic alliances turn out to be more likely victims. Sixth, increasing aggressiveness in company strategies and reactions is observed, including price cuts but also hostile takeover bids. Seventh, privatization is gaining pace, while on the other hand governments will continue to be an important player, be it on a different front: as infrastructure providers, market regulators and environmental protectors. Eight, air freight is still a growing market, with an own network which is gradually developing, next to the passenger network. A ninth and last tendency is the entry of *more foreign and private equity capital, the latter of which may sometimes be at odds with the long-term strategies of the sector.*

Keywords: air transport, air freight, market structure, business models, privatization

1. Introduction

The airline business is almost like the laboratory of transport economics. It is an environment where technological and organisational developments unfold in rapid succession: among the world's air transport companies, we observe all manner of industrial and economic evolutions, with frequent new entries, but also market exits through mergers, takeovers and bankruptcies; airports are increasingly confronted with ecological and capacity issues; regions are constantly competing with one another to attract players in the airline business; and new and innovative products, including low-cost airlines and full-freighter cargo services, are claiming an ever greater proportion of available capacity.

The dynamic nature of the airline sector explains to an extent the growing interest from politics and science, as well as the world of business. Here, two issues come to the fore time and again: i) What is the economic significance of the air transport industry? and ii) What future lies in store for that industry?

This paper attempts to outline some of the likely developments in the air transport industry beyond 2010. If the trends that have unfolded in recent decades persist in the coming years, that alone will inevitably result in an altered market and ownership structure. Our forecasting exercise consists in four parts. We consecutively consider the present situation in the air transport business, including the development process of the last decade; we look at potential scenarios and strategies; we look at the business models; and finally we draw conclusions.

2. Trends from the past

The best starting point to gain an understanding of sectoral developments is arguable by analysing figures and trends from the past, over a sufficiently long period of time. Here, in the case of the international air transport business, we opt for an approach based on a number of important indicators of demand, supply and market structure.

In the early 1990s, the air transport industry went through a deep, structural crisis, occasioned by, among other things, a combination of relatively weak economic activity and rising oil prices. In addition, there was the direct impact of the 1991 Gulf War and the Asian economic slump from 1992. Furthermore, there was the structural problem occasioned by the liberalisation of the air transport market, with initial overcapacity putting downward pressure on yields and profits.[1]

This far-reaching liberalisation has in any case created an entirely new market environment. Prior to the deregulation process, only national authorities, through their flag carriers, were

[1] In the United States, the Airline Deregulation Act was introduced in 1978. The liberalisation of the European market was implemented much later. Europe's deregulation programme was based on three packages of measures (1988, 1990, 1993), with each phase impacting on four areas: pricing, market access, competition and licensing (Button, 1998, pp. 30-44). Cabotage has been permitted within Europe since 1 April 1997.

able to organise scheduled services on the major routes. There was no question of competition, and operational efficiency was regarded as inessential.

With the movement towards deregulation, however, the quasi-monopoly power of those flag carriers was seriously eroded, not in the least because it had become relatively simple for new companies to enter the marketplace. New and successful products were developed, as was apparent in the rise of so-called low-cost carriers. Innovative pricing strategies allowed companies to benefit maximally from different willingness to pay in different market segments. The continuous search for opportunities for cooperation in relation to reservation systems, frequency of service and slot allocation resulted in the emergence of a limited number of strategic alliances.

This movement towards a profound liberalisation, coupled with the cyclical impact of economic activity, translates into the evolution outlined in figures 1 and 2.

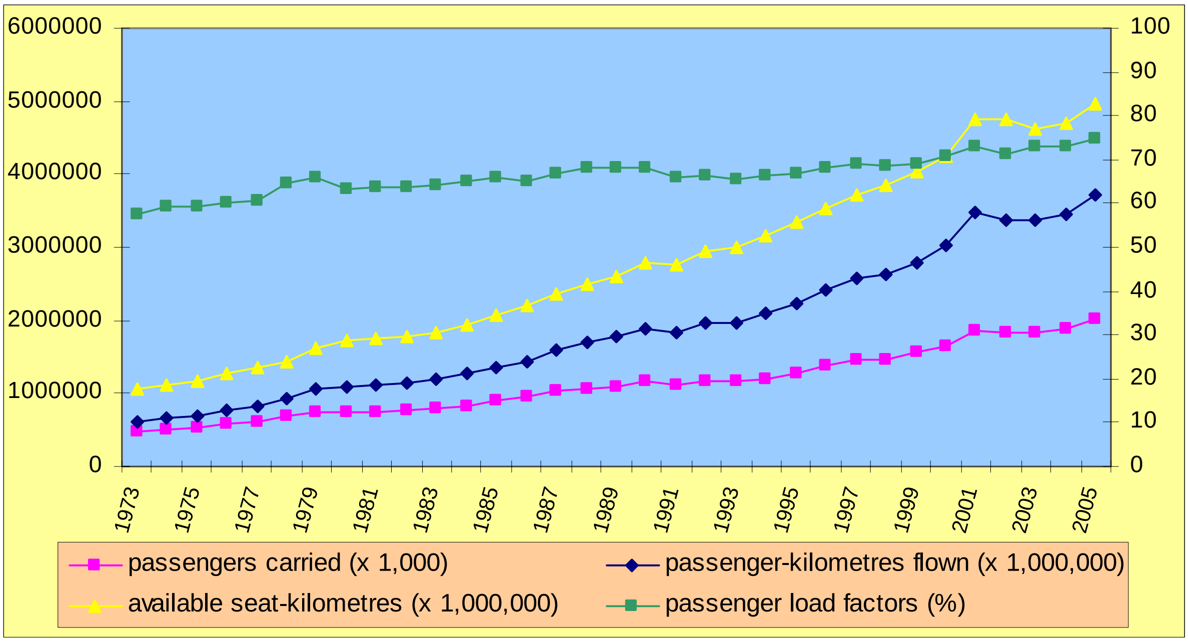

Figure 1. World air transport scheduled services (domestic + international) – passengers
Source: IATA

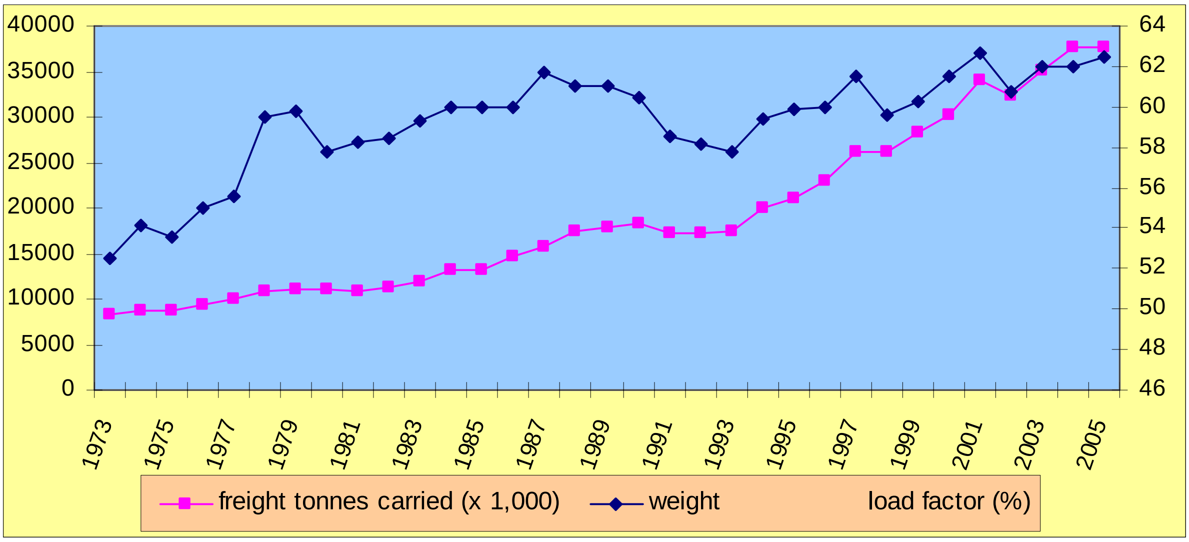

Figure 2. World air transport scheduled services (domestic + international) – freight
Source: IATA

In the period under consideration, there is clear evidence of substantial growth in the industry, as is aptly summarised in table 1.

Table 1. World air transport: growth figures (1991-2005, scheduled services, domestic + international)

Indicator	Growth rate (%)
Passengers carried	81.8
Passenger-kilometres	103.6
Available seat-kilometres	79.9
Freight tonnes carried	117.6
Tonne-kilometres performed	149
Available tonne-kilometres	101

Source: IATA (1991-2006)

There are however notable differences in respect of where the growth was achieved, which in turn impacts on the structure of the air transport sector:

- In the period under consideration, there was very strong growth in terms of passengers carried;
- The even greater growth recorded in passenger-kilometres performed indicates that the average air passenger travelled greater distances;
- While still strong, growth in the number of available seat-kilometres was slower than that in passenger-kilometres performed, resulting in a marked improvement in the seat-occupancy rate;
- The growth figures recorded in freight transport are even more impressive, with freight tonnes carried more than doubling over the period considered;
- Freight was, on average, carried over shorter distances, as is reflected in the fact that growth in tonne-kilometres performed was more modest than the rise in freight tonnes carried;

- As in passenger transport, freight transport saw a substantial improvement in capacity utilisation, as growth in available capacity was lower than growth in tonne-kilometres performed.

While the above graphs and tables undeniably provide an overview of the most significant developments in the air transport business, they do also ‘mask’ a number of evolutions. First and foremost, there are remarkable regional differences to take into account. Moreover, the developments described above have altered the air transport landscape profoundly. Particularly in respect of the actual carriers, the industry has evolved towards a typology consisting of at least four categories: network airlines, regional and smaller network airlines, charter companies, and low-cost airlines. Starting from this typology, we discern quite divergent evolutions:

- The picture in Europe is mixed. The three largest carriers (British Airways, Lufthansa and Air France) have performed well. However, there have also been a number of bankruptcies (e.g. Sabena and Swissair), while other companies have had to contend or continue to contend with looming crisis (e.g. Alitalia and Olympic). In the charter market, we have witnessed some successful start-ups (e.g. TCAB), followed by a concentration movement resulting in a limited number of large groups (e.g. Thomas Cook and TUI). Another notable trend has been the rise and growth of some important low-cost airlines (Ryanair, easyJet, Air Berlin,…).
- In the United States, recent years have brought a thorough reorganisation in the air transport market. With the exception of American Airlines, all major companies (United Airlines, US Airways, Delta, Continental Airlines,…) have gone through Chapter 11, resulting in reorganisation and a healthier cost structure.
- The impressive economic growth rate in Asia has also had a positive impact on the Asian carriers. Importantly, though, Asian growth is generating scarcity, including of pilots.
- In the Arab world, we have seen strong growth in the case of some carriers (incl. Qatar, Etihad, Emirates,…); the strategy pursued by these carriers is clearly linked with the striving for diversification among the region’s political leaders.

The question that now confronts the airline industry and its business environment is how matters will evolve further. Will this strong growth persist in the coming decade? Does it justify fresh investment in additional capacity, in terms of both aircraft and airports? Does it make sense in the short run for political attention to focus on possible bottlenecks, including in respect of air space and slot allocation?

3. Towards a new business model?

The air transport business involves a highly heterogeneous array of actors. Some remain subject to a form of state control, others are fully privatised, and others yet operate under a mixed regime. As far as the privately controlled players are concerned, the corporate objective is obviously profit maximisation. The non-privately controlled players, on the other hand, usually pursue other goals, such as maximisation of employment and/or value added, or, more generally, the maximisation of socioeconomic surplus.

Doganis (2001) asserts that, within the present air transport sector, a distinction can be made between three business models, each of which has its own specific objectives. Table 2 provides a summary of this perspective.

Table 2. Business models in the air transport business

Business models	Variables	Targets
Traditional airline model	Unit costs	Increasing revenues
Virtual airline model	Yields	Larger market
Aviation business model	Load factors	Shareholder value

Source: Doganis (2001)

A thorough analysis of the strategic behaviour of a number of carriers shows that, while each airline tends to position its own product in a specific way, the available tools are invariably the same. The approach taken always combines control over the unit cost and optimisation of the seat occupancy or loading factor with a striving to maximise the yield.

In the future, ever greater emphasis will be placed on achieving a sufficiently high yield, with carriers also generating income from non-flying activities through every passenger. Ryanair is a case in point. Not only does the company apply many surcharges, including a luggage check-in fee and a fee for payment by credit card, but significantly, in the 2006-2007 financial year, Ryanair generated more than half of its operational result (earnings before interest and tax) through activities that had little or nothing to do with flying. Typical examples are such diversification activities as car rentals and hotel room reservations, for which Ryanair earns a commission.

There are clearly links between the various actors, both within a particular subsector (e.g. the airline industry) and beyond (e.g. between airlines and ground-handling companies). Table 3 provides an overview of the different kinds of links encountered.

Each company operating in the air transport business may have committed to different types of agreement with different players. French carrier Air France, for example, has effectively taken over Dutch airline KLM in a merger/acquisition, while at the same time entering into code-share agreements with numerous other carriers. Moreover, the company is part of the strong SkyTeam airline alliance. Hence, for each enterprise, a specific cell can distinctly be completed in table 3, as every market player has a specific structure and corporate history.

It is equally interesting to highlight and subsequently quantify the existing links between partners at airport level. Who provides which services to whom, and to what extent are actors dependent upon specific suppliers and clients? Consider the example of LCC easyJet, which in 2007 launched flights from Brussels to Nice and Geneva. This new entry was, first and foremost, in direct competition with Brussels Airlines and Swiss, both of which companies were already operating flights on these routes. Second, there were derived effects for service suppliers, including ground-handling companies.

Figure 3 provides insight into the structure of relationships between actors in the air cargo business. The arrows indicate existing relationships and their direction. These relationships may, in a subsequent phase, be quantified. A similar methodology has already been applied to port and maritime relations within the port of Antwerp in Coppens et al. (2007).

Table 3. Control and cooperation between subsectors in the air transport industry

Market actors	Airlines	Handling companies	Airport operators	Authorities
Airlines	* Mergers and acquisitions (e.g. Air France and KLM; Air Berlin and Condor) * Alliances (e.g. STAR) * Code-share agreements * Joint ventures (e.g. Lufthansa Cargo and DHL Express) * Participations (e.g. Thomas Cook in Air Berlin)			
Handling companies	* Previously sometimes integrated in airline (cfr. monopoly risk by dominant national carrier), nowadays often outsourced * Specific contracts (e.g. in 2007 Martinair with Aviapartner, for 9 German airports, for 3 years)	* Concentration by take-overs (e.g. Aviapartner, Menzies,…)		
Airport operators	* Participations (e.g. Lufthansa in Munich) * Co-operation between airports and airlines (e.g. Charleroi and Ryanair)	* Assignment, concessions * Integration (e.g. Aeropuertos Argentina 2000)	Mergers/acquisitions (e.g. Brussels Airport by Macquarie)	
Authorities	* Participation government in Flag Carriers (e.g. Olympic, TAP,…)	* Monopoly by airport authority or its sole concessionaire * Concession assignment control	Participation government in airports, including (partial) privatization	Participation governments in airlines (e.g. French and Italian State in Alitalia)

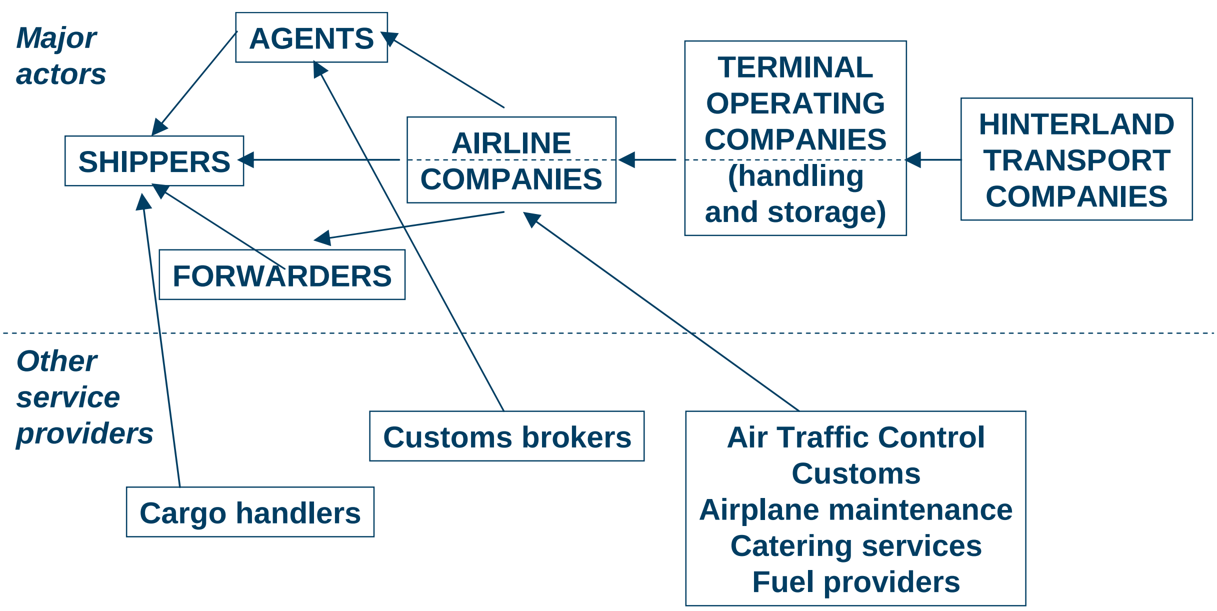

Figure 3. Air transport actors (cargo business case)

The above overview shows quite clearly how the airline industry is subject to constant change and how it is evolving towards new business models. Hence the importance of being able to estimate the potential impact of that evolution on the future airline market.

4. Gambling on uncertainty? An outline of the future market

Predicting a future market is inevitably fraught with uncertainty. So too in the air transport sector. Uncertainty can never be eliminated entirely. At best, it can be channelled to some extent.

In what follows, we shall attempt to outline possible future developments. Our starting point is invariably a combination of the present situation, recent trends and a set of endogenous and exogenous variables. Among the exogenous variables under consideration are such factors as economic activity, fuel prices and the price of aircraft, either newly purchased, second-hand or leased. Endogenous variables are the yields, the cost structure (cf. hedging agreement or not), financial indicators, capacity utilisation, mergers and acquisitions.

The future developments we wish to put forward are the following.

- A clear distinction between global network carriers and niche players
- More privatisation
- Alliances influenced by cross-border mergers and acquisitions
- Survival of the Southwest model
- More bankruptcies
- Increasing aggressiveness
- Decreasing influence of government
- Airfreight: from by-product to success factor
- Increasing international capital flows

4.1 A clear distinction between global network carriers and niche players

In the most recent past, a clear distinction has come about between global network carriers on the one hand and niche players on the other. The global network carriers have consolidated through so-called strategic alliances into a limited number of fiercely competing networks, both in passenger and in freight transport.[2] Niche players have been able to exploit market opportunities that presented themselves because of geographic characteristics, for instance by operating strongly from small regional airports, or through specific services, such as low-cost activities and express freight transport.

After the disappearance of the Qualiflyer Group in 2001, three important strategic alliances remain.[3] Table 4 provides an overview of their present composition.

The purpose of alliances is clear to see: through technological cooperation and the tool-sharing that it implies (code sharing, interlining,…), potential customers are offered a network that covers the greatest possible number of major destinations, and at the same time profitability is assured and even enhanced. The pressure of profitability shall continue to exist

[2] Of course most global network carriers apply a mix of strategies and act simultaneously on markets of several types . Yield management has been a fundamental tool for this type of strategy.

[3] The question arises whether more concentration can result in market dominance by a limited number of carriers, with the risk of abuse of market power.

in the near future, so that one may assume that a further concentration movement will ensue. However, the question does arise whether this concentration will be achieved through the inclusion of new partners, or through a more profound integration of existing partners, or perhaps through both. There are, after all, still a number of European carriers, such as Olympic Airways and Brussels Airlines, that are not part of an alliance. However, incorporation into an alliance will only happen if there is no overlap with the existing network, i.e. with the present alliance members. Moreover, the positive effect on the profitability of the alliance must be clear to see. A far-reaching integration within an existing alliance, on the other hand, is likely to be complicated by intercontinental legal discrepancies.[4]

Table 4. Composition of strategic alliances (2007)

Alliance	Air companies
Star Alliance	Air Canada, Air New Zealand, ANA, Asiana Airlines, Austrian, bmi, Polish Airlines, Lufthansa, Scandinavian Airlines, Singapore Airlines, South-African Airways, Spanair, Swiss, TAP Portugal, Thai Airways International, United, US Airways Regional members: Adria, Blue1, Croatia Airlines
SkyTeam	Aeroflot, Aeromexico, Air France, KLM, Alitalia, China Southern, Continental Airlines, Czech Airlines, Delta Air Lines, Korean Air, Northwest Airlines Associates: Air Europa, Copa Airlines, Kenya Airways
Oneworld	American Airlines, British Airways, Cathay Pacific, Finnair, Iberia, Japan Airlines, LAN, Malev, Quantas, Royal Jordanian

Source: Star Alliance (2007), SkyTeam (2007) and Oneworld (2007)

The niche market is in full movement. In 2005, a totally new product was launched that is known as ‘business-only transatlantic travel’. Aircraft are converted into a configuration to suit the business traveler, with personal space and a check-in procedure that is more speedy and less stressful than in services offered by traditional carriers. Promoted as a low-fare, all-business-class service, the aim is to persuade economy-class customers to pay slightly more in return for a more personalised service. In the London to US market, three airlines were operating such a service in 2007: EOS Airlines, Maxjet Airways en Silverjet. All of them disappeared before June 2008[5].

Table 5. New all-business carriers operating from the UK (2007)

Airline	Fleet	Aircraft planned	Airports served	London-NY rtn from
Eos Airlines	4 x Boeing 757-200s	1 x 757-200	Stansted, JFK	$ 2,678
Maxjet	5 x 767-200ERs		Stansted, JFK, Los Angeles, Washington, Las Vegas	$ 1,548
Silverjet	2 x 767-200ERs	3 x 767-200ERs	Luton, Newark	$ 1,798

Source: Flight International, based on airlines

[4] A typical example is the US prohibition on foreign companies acquiring a stake of over 25% in an American carrier.

[5] EOS launched its service between Stansted and New York JFK in October 2005, but ceased operations on 28 April 2008. Maxxjet ceased operations on 26 December 2007, while Silverjet ceased operations on 30 May 2008.

The success of such services has inspired Lufthansa, KLM and Swiss International Airlines to launch their own all-business transatlantic flights from continental Europe. To this end, they cooperate with the Swiss operator PrivatAir.[6]

An example of a regional niche strategy is that of Cathay Pacific, which in 2006 acquired an 82.2% stake in Dragonair for the price of EUR 730 million.[7] In this manner, the Hong Kong carrier was able to broaden its access to the lucrative and fast-growing Chinese air transport market, extending its operations there from 2 to 21 routes.

4.2 More privatisation

The former air transport market, dominated by flag carriers that were completely or largely controlled by national authorities, has disappeared. Former flag carriers have been or are in the process of being wholly or partially privatised. New entries are almost always financed with private capital. Table 6 demonstrates this evolution for selected European airlines.

Table 6. Public ownership of airline companies (%)

	2000	2006
Air France	56.0	18.6
British Airways	-	-
Alitalia	53.0	49.0
Austrian	39.7	-
Bmi	-	-
Iberia	-	-
KLM	-	18.6
Olympic	100.0	100.0
TAP	100.0	100.0

Source: Airline annual reports

Table 6 shows very clearly how public stakes in carriers are becoming smaller or, in some cases, have disappeared altogether. Equally interesting is the fact that some airlines are now participating in the capital of other carriers; an illustration of how the process of integration can proceed.

However, privatization does not necessarily mean that the prevailing competition rules are being respected. In February 2006, for example, the European Commission and the US Department of Justice announced an investigation into alleged collusion in the air cargo market. This was followed by an investigation in the long-haul passenger market, focusing on possible price collusion and, in particular, on fuel surcharges on top of normal fares, including in deals negotiated with large enterprises and holding companies.

Privatisation movements also generate competitive strategies. In 2006, Ryanair acquired a blocking minority in Aer Lingus, facilitating its own bid for the former flag carrier and enabling it to prevent others from bidding. The Irish state retained a 25.4% stake. This battle

[6] The system works as follows: PrivatAir leases the aircraft and draws up a wet-lease contract with the airline in question. PrivatAir provides the crew, catering and in-flight entertainment, it takes care of maintenance and bears all operational risks. The partner airline markets the service and sells the tickets.

[7] The deal revolved around a cash transaction and a complex share exchange agreement, which also involved Air China and the British parent company of Cathay Pacific, Swire Pacific. As a consequence, Air China acquired a 10% stake in Cathay, while Cathay was able to double its stake in Air China to 20%.

for control over Aer Lingus illustrates how the public authorities can become involved in a tug of war over a largely privatised carrier.
The privatisation wave is also noticeable in the airport sector. Carriers will in the future be increasingly confronted with privatised airports. Unlike when those airports were publicly operated, the main goal is now profit maximisation. The result is bilateral negotiations between two profit maximisers that (must) take into account the portfolio of alternative solutions available to their adversary.

4.3 Alliances influenced by cross-border mergers and acquisitions

The purpose of alliances, mergers and takeovers are similar: to enhance operational and marketing efficiency; to achieve better financial results; to realise industrial-economic improvements through scale effects and by lowering barriers to entry.
Mergers and takeovers also have a clear impact on the composition of alliances, and thus on their economic performances. Here, there is much to be learnt from past experiences in maritime transport. The example of P&O Nedlloyd is quite illustrative in this respect. In 1998, this shipping company helped establish the Grand Alliance. However, after the takeover by Maersk in 2005, it pulled out. To compensate for this loss, the Grand Alliance concluded deals with the New World Alliance on a number of routes. Clearly, then, alliances as such are not stable, but subject to continuous movements and the associated entry and exit of partners.
A similar situation is threatening to unfold in the air transport business. The takeover of Alitalia by Air France/KLM will not result in a reshuffle of alliances, as both companies belong to the SkyTeam group, but matters would have been quite different had US Airways' 2006 bid for Delta Air Lines succeeded. The new merger would have created the world's largest carrier. The effect on existing alliances would have been twofold. The alliance to which the merged company belonged would have become the dominant player, and within that alliance, the merged company would have become the dominant partner over the other participating carriers. The other alliance would have lost an important American partner and would thus have been weakened substantially.
Since the increased bid from US Airways for Delta Air Lines in 2007, it has also become apparent that a consolidation wave is inevitable. In the United States, five of the six international carriers were involved in merger talks in 2007.[8] Especially a merger/takeover involving both Continental and United Airlines would generate substantial benefits given the limited overlap between their respective networks. However, the two carriers belong to different alliances. Moreover, there are industrial-economic barriers to take into account in these kinds of mergers.[9]
In Europe, too, a consolidation movement is gaining momentum, with possible consequences for the existing alliances. The Spanish company Iberia has, since 1999, been operating under an alliance with British Airways, in which the latter carrier, for that matter, has a 10% stake in stock exchange quoted Iberia. At the beginning of 2007, the Iberia management was not excluding the possibility of an alliance with Air France/KLM or Lufthansa. A response was

[8] Delta Air Lines is, for example, talking to Northwest Airlines, while United Airlines is engaged in separate negotiations with Continental and Northwest Airlines.
[9] In 2001, Northwest Airlines and Continental struck a deal whereby they could sell tickets on each other's flights. Also, Northwest acquired the right, under certain conditions, to block any merger between Continental and another company.

not long in coming: on 30 March 2007, the Texan investment group TPG, with support from British Airways and three Spanish investment groups, put in a bid for Iberia. This movement illustrates what typically lies in store: a consolidation movement towards three large European groups, gravitating around the three largest carriers, namely Lufthansa, British Airways and Air France/KLM.

4.4 Survival of the Southwest model

The Southwest model has proven to be successful, and hence has been copied in the rest of the world. The model was based on strict adherence to a number of principles: short-haul, point-to-point, dense routes only, maximisation of flying hours, use of secondary airports, high frequency of service, no delays. It strove to combine low costs, low fares and high demand and capacity utilisation (see Macário et al., 2007).

The European LCA market continues to grow strongly, cf. growth rates for 2006 for Ryanair (+23%) and easyJet (+16%). Low-cost companies are increasing their market share vis-à-vis the traditional carriers and charter companies. The important question arises whether this growth rate can be maintained in the future.

In an analysis by Deutsche Bank from May 2007, it was calculated that the LCA market will continue to experience a volume growth of roughly 15%, as a consequence of a combination of shifts from other air transport segments, GDP growth, and a very modestly rising propensity to travel. All major low-cost companies are expected to achieve annual growth rates of less than 15%, while Ryanair is expected to grow by 20% annually (Deutsche Bank, 2007, p. 5). This outlook is enhanced if one considers the investment strategy of carriers such as Air Berlin, Ryanair and easyJet. Table 7 provides an overview of aircraft orders and deliveries.

Table 7. Estimated number of aircraft and passengers carried by European LCAs until 2012

Number of aircraft	**2005**	**2006**	**2007 F**	**2008 E**	**2009 E**	**2010 E**	**2011 E**	**2012 E**
Easyjet	108	120	143	160	177	194	211	228
Ryanair	87	113	132	152	172	192	212	225
Others	152	181	221	260	302	347	395	458
Total	347	414	495	572	651	733	818	910
Passengers								
Easyjet	28	34	38	42	46	51	55	60
Ryanair	31	41	48	55	62	69	76	81
Others	45	56	67	79	92	106	122	141
Total	105	130	152	176	201	227	253	282

Note: F – Forecast, E - Estimate
Source: Lopes (2005), airlines websites, authors calculations

It is clear that present economic activity is continuing to stimulate the growth of the LCAs. At the same time, it is becoming more likely that certain inputs will become more expensive, resulting in a slowdown in growth. Moreover, there are signs that the market is reaching a degree of maturity (MINTeL, 2006). This is undoubtedly why initiatives have been announced or indeed are already being launched in relation to long-haul low-cost routes.[10] Here, the question arises of what the price difference with the traditional carriers will be. And, more importantly still perhaps, how customers will respond to this product.

4.5 More bankruptcies

Bankruptcies and takeovers used to be rare in the air transport sector during the era of the so-called flag-carriers. More recently, however, such events have become more common and have had a significant impact on the market function and competition. By way of illustration, table 8 provides an overview of bankruptcies, mergers and takeovers in the European low-cost airlines sector from 1999 to 2006. The figures provided suggest that, in the case of some carriers (e.g. Air Berlin), increasing market share is attributable to takeovers of other carriers.
Also in Europe, we have witnessed the demise of some traditional flag carriers (e.g. Swissair and Sabena in 2001), while other airlines appear to be constantly struggling for survival (e.g. Alitalia and Olympic Airways). Strikingly, the companies in question are often medium-sized international airlines. Doganis (2001) asserts that these airlines are "too small to be global players, too big to be a niche player". Their mission is unclear, they usually find it hard to take optimal strategic decisions and, in most cases, they are undercapitalised.[11]
In the United States, the situation is different. First and foremost, the recent past has seen many companies file for Chapter-11 protection against creditors. At the same time, reorganisation measures have been pushed through and new, cheaper deals have been negotiated with partners.[12] The consequence is twofold: the majors generally get out of Chapter 11 with a lower cost structure (e.g. due to dramatic staff reductions) and hence greater competitive strength, but their regional partners come under greater pressure and must adapt their strategies. Mesa Air Group, for example, flies for as many majors as it can, while also flying independently on smaller niche routes.
It would appear that the trend of recent years will persist in the future, resulting in consolidation into a limited number of large network carriers as well as a limited number of large low-cost carriers. This evolution will undoubtedly impact on the market structure and on market behaviour, and possibly holds the risk of abuse of market power. Carriers that do not belong to strategic alliances will then become likely victims of bankruptcy and prime targets for takeovers and mergers.

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[10] Examples include Oasis Hong Kong Airlines (flights between Hong Kong and London), Air Asia, Virgin Blue, Zoom...
[11] The air transport industry in its future configuration of interacting submarkets will remain a capital intensive industry.
[12] In this context, David Field writes: "Wielding the power of bankruptcy, US majors have forced their regional partners to fly for less, but given them more leeway to fly for other airlines". And he adds: "Through their powers in bankruptcy, both Delta and Northwest put almost all regional flying out for competitive re-bidding, and the downward pressure on margins spread through the industry." (Flight International, 22-28 May 2007, p. 32).

Table 8. Bankruptcies, mergers and takeovers in the European low-cost airlines sector

Year	Airline	Country	Event
1999	AB Airlines	UK	Bankruptcy
	Color Air	Norway	Bankruptcy
	Debonair	UK	Bankruptcy
2002	GO	UK	Bankruptcy
2003	Air Lib	France	Bankruptcy
	Buzz	UK	Merger with Ryanair
	Goodjet	Sweden	Bankruptcy
2004	Air Polinia	Poland	Bankruptcy
	Basiq Air	Netherlands	Merger with Transavia
	Duo Airways	UK	Bankruptcy
	Flying Finn	Finland	Bankruptcy
	Germania Express	Germany	Merged with dba
	GetJet	Poland	Bankruptcy
	Jetgreen	Ireland	Bankruptcy
	Skynet Airlines	UK	Bankruptcy
	V-Bird	Netherlands	Bankruptcy
	VolareWeb	Italy	Bankruptcy
2005	Air Andalucia	Spain	Bankruptcy
	Eujet	Ireland	Bankruptcy
	Intersky	Austria	Bankruptcy
	Maersk Air	Denmark	Merged with Sterling
2006	Air Tourquoise	France	Bankruptcy
	Air Wales	UK	Bankruptcy
	Budget Air	Ireland	Bankruptcy
	dba	Germany	Merged with Air Berlin
	Flywest	France	Bankruptcy
	HiFly / Air Luxor	Portugal	Bankruptcy
	MyTravelite	UK	Reintegrated into MyTravel Airways
	Snalskjunsten	Sweden	Bankruptcy
2007	LTU	Germany	Merged with Air Berlin

Source: Mintel, 2006

It would appear that the trend of recent years will persist in the future, resulting in consolidation into a limited number of large network carriers as well as a limited number of large low-cost carriers. This evolution will undoubtedly impact on the market structure and on market behaviour, and possibly holds the risk of abuse of market power. Carriers that do not belong to strategic alliances will then become likely victims of bankruptcy and prime targets for takeovers and mergers.

4.6 Increasing aggressiveness

The air transport sector provides a good example of the potential response to new market entries in an industrial economy. Consider the hypothetical example of a new entrant in the marketplace launching a service on a particular route. The carriers already operating on that route will almost always respond with sharp price cuts, combined with increased capacity. As soon as the new carrier retreats, capacity is decreased again and prices are increased.

Alternatively in such a situation, flag carriers might purchase or launch an in-house low-cost carrier.

While initially the low-cost airlines tended to exhibit aggressive behaviour vis-à-vis the flag carriers, we now see the opposite happening. The large flag carriers are challenging the low-cost carriers on their short-haul destinations, and feeding these passengers to their more profitable full-service long-haul routes.[13] Flag carriers such as British Airlines, Lufthansa and Air France/KLM have all changed the product of 'short-distance flights' quite drastically: more straightforward economy classes, the introduction of on-line reservation, the elimination of travel agents' commissions, no or exclusively paid-for catering.

This increasingly aggressive behaviour will persist in the future, as one can already infer from the sometimes strange developments at the takeover front. An example that comes to mind is Air Berlin, a low-cost carrier operating in the European market which in 2007 acquired LTU, an airline focusing on the long-haul holiday market. Also in 2007, there was the hostile bid from Ryanair, Europe's largest budget carrier, for that other Irish airline, Aer Lingus. It is a bid, for that matter, which stands very little chance of succeeding, if only because of the fact that the European Commission will not accept the dominant position that Ryanair would thus acquire at Dublin airport.

4.7 Decreasing influence of government

While for decades the air transport business was directed and controlled by the public authorities, this government influence is now far less apparent. The traditional flag carriers are disappearing, not in the least because the public authorities are partially or wholly selling their share in the capital of these companies. Deregulation is gaining momentum, and the influence of the national authorities is now restricted mainly to two areas.[14] First and foremost, the public sector will most likely continue to provide the basic airport infrastructure. Second, they are still generally expected to act against any abuse of monopoly status in relation to pricing, landing slot allocation or access to terminals.

The (supra)national authorities for their part may be expected to assume a more prominent role in the environmental field. The European Commission, for example, is committed to a reduction in CO_2 emissions by the year 2020 to 30% of levels in the reference year 1990. The airline industry shall be included in an EU emissions trading scheme. In an initial phase, to be implemented from 2011, only European carriers will be part of the mandatory scheme.[15] Entitlements would be distributed among the carriers for free by the European Commission itself, on the basis of airlines' average emissions in 2004-06 period. Just 10% of the emission rights shall be auctioned.

The airline industry is already responding to this trend. In 2007, easyJet introduced its own so-called 'eco-friendly aircraft design', which uses existing technologies that could halve carbon dioxide emissions and produce 75% less NO_x by 2015.[16] IATA, meanwhile, has

[13] Flag carriers such as British Airlines, Lufthansa and Air France/KLM generate around two-thirds of their revenues through long-distance flights, where they face no competition from low-cost/low-fare airlines. A carrier such as Alitalia achieves just a third of its revenues from long-distance flights, and is therefore much more sensitive to aggressive behaviour on the part of low-cost carriers.

[14] In addition, the public authorities will continue to be involved in the funding of aircraft construction, especially in the fields of research, design and the launch of new aircraft types.

[15] At present, only heavy industry and power companies have access to the emissions market. Under American pressure, the EU has decided that the scheme will be opened up to foreign airlines only gradually.

[16] Flight International, 19-25 June 2007, p. 14.

launched a zero emission goal for the airline industry. The environmental issue, then, is likely to become one of the most significant points of debate within the airline sector. Here, government clearly has an important regulatory and supervisory role to play.

4.8 Airfreight: from by-product to success factor

Airfreight is a growth market. In terms of value, the sector accounted for approximately 40% of international freight transport in 2005. As figure 4 shows, airfreight is a rather heterogeneous product.

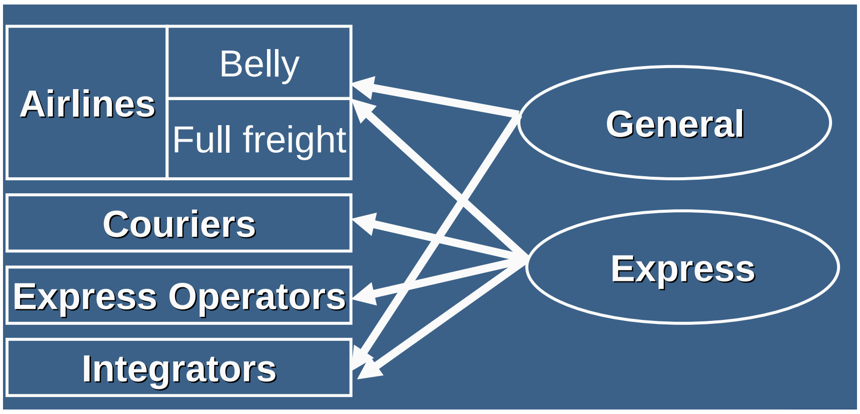

Figure 4. Airfreight, a heterogeneous product

While airfreight was traditionally regarded as a by-product of passenger transport, there are now a number of companies focusing exclusively on this segment (Herman and Van de Voorde, 2006).[17]

The relatively growing importance of full-freighter transport is occasioned by a combination of factors. For one thing, the available freight capacity in passenger aircraft is insufficient to satisfy growing demand. Second, on certain airfreight routes, there is a strong imbalance between incoming and outgoing freight, so that a different network structure imposes itself. In addition, there is an ongoing consolidation trend whereby freight is combined at hubs, and these larger volumes are resulting in more competitive full-freighter operations.

Airfreight will continue to expand more rapidly than passenger transport in the coming years. As long as airfreight can contribute to profit maximisation and growing market share, carriers will want to operate in this growth market, be it as a by-product of air passenger flows or in a full-freighter configuration.

4.9 Increased foreign capital

The dilution of the flag carrier concept, which is characterised by a declining involvement of public funds and the entry of more private capital, has resulted in an important evolution in terms of industrial and capital structure. In the case of some airlines, and indeed airports, we have witnessed a three-step movement. First, there was the disintegration phase, with companies refocusing on the core business. In the second step, such non-core activities as

[17] The genuine full-freighter companies often operate in the 'ad hoc', irregular airfreight market. Moreover, it often concerns small, unquoted companies so that there are virtually no official data on their operational and financial performance (Herman and Van de Voorde, 2006).

catering, handling and maintenance were sold off. Finally, in the third phase, this evolution is commonly combined with the entry of external capital.[18]
Increasingly, it appears to be private equity that enters the sector. Table 9 provides an overview of a number of significant capital movements involving private equity in the Belgian airline market.

Table 9. Private equity in the Belgian airline industry

Date	Target	Purchaser	Million €
November 2004	BIAC (70%)	Macquarie Bank	735
July 2005	Aviapartner	3i	165

Similar movements are now occurring elsewhere. One recent example is the bid and takeover from Macquarie Bank and Texas Pacific Group (TPG) for the Australian carrier Qantas.
The question that arises is whether the entry of private equity capital in the airline industry is not at odds with companies' long term interests. Private equity groups tend to sell relatively quickly, i.e. within a period of three to five years. It remains to be seen, though, to what extent the strong cyclical movements in the airline industry may pose a problem in this respect. And to what extent may possible 'exits' from the capital of airlines and airports by private equity groups result in new consolidation movements?[19]

5. Conclusion

Being a capital-intensive business that is undergoing very rapid technological and organisational change, the air transport industry is in constant need of insight into future market evolutions. Hence, the purpose of this contribution was to provide an understanding of likely developments in the sector after 2010.
There is no such thing as a single homogenous air transport market. It is rather a configuration of various submarkets that are interconnected and therefore interact. The general feeling is that growth will persist beyond 2010. And, if one looks at the market from an international and aggregated perspective, this will indeed most likely be the case, if only because of the expected further expansion of the Asian growth market. However, aggregated data often mask underlying, sometimes opposite evolutions. For this reason, we have chosen to base our approach on a number of hypotheses.
Each of the hypotheses studied implies a movement over a period of time, often with structural consequences. In summary, we predict that the air transport market after 2010 will be characterised by: further specialisation, from global network carriers over full air freight

[18] There is much to be learnt from individual cases. An interesting example is the battle for the acquisition of the American company Midwest Airlines. In 2005, AirTran Airways, a low-cost carrier based in Florida, approached the management of Midwest Airlines, with headquarters at Milwaukee, Wisconsin. The purpose was to merge the two regional networks into a national network. In 2007, the bid was eventually rejected. The management of Midwest Airlines was however prepared to accept another bid, led by TPG Capital, a private-equity firm, in partnership with Northwest. It was Northwest's purpose to prevent AirTran from establishing a low-cost hub in Milwaukee, in the proximity of its own hubs at Minneapolis and Detroit.
[19] In the airport sector, we are already seeing a strong concentration into a number of large groups: BAA (United Kingdom), Aena (Spain), Fraport (Germany), Aéroport de Paris (France), Macquarie Airports (Australia), Schiphol (Netherlands), Ferrovial (Spain).

carriers to niche players, including in the low-cost or low-fare market; the establishment of new alliances, and the international transfer of capital that this entails; relatively easy market access, resulting in frequent entries and exits, which in itself will lead to more aggressive behaviour in the market; less public intervention and more private investment, with the role of the public authorities restricted to core tasks, such as basic infrastructure provision and safety & security.
It is within this broad future framework, marked by a considerable degree of uncertainty, that the market players will position themselves. In the air transport business, too, growing and/or surviving is a matter of recognition, measurement and knowledge.

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