



STRATEGIC AND OPERATIONAL CHALLENGES FOR TOURIST AIR TRANSPORT

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Abstract *The main objective of this paper is to identify the strategic and operational challenges that will face air transport by 2030. The authors noted that in tourism, air transport is of great importance for the business, because it provides the movement of the tourist from the place of residence to the chosen destination. Methodology and assumptions were based on information, indicators, processed by the relevant international organisations. Correction factors were determined based on some assumptions: the importance of that activity to achieve tourist consumption; the recommendations of international organisations (WTO, EUROSTAT) on the role of each activity in the development of the tourism phenomenon; the results of various surveys conducted in time. The research results can have a degree of approximation, but the authors' analysis pursues achieving a first attempt to quantify the transport activities in tourism and the role of the latter in the national economy. The results obtained by the authors will be furthered by research and analyses to be performed for each and every component of air transport, independently or within macroeconomic strategies.*

Key words:

Air transport, Strategies, Tourism, Air transport risks

JEL Codes:

L83, M38, L93

1. Dynamics of the growth of passengers' demand for air transport in 2013

Since the discovery and operation of the first aircraft, air transport has been a means that polarised the attention of the international community due to evident advantages as compared to other transport means as well as due to its comfort and rapidness.

Air transport is a major component of the world economy and plays a particular role in tourist activities; owing to its spectacular evolution, to the advantages given by speed and comfort, it stimulates travel and contributes to the opening of new markets, usually far from the tourist generating countries and inaccessible by other transport means.

Air transport services are among the most dynamic forms of tourist transport, being used mostly for long and very long distances. Research shows that planes are used in a percentage of 50% for distances ranging

between 1,000 and 4,000 km and almost exclusively for those exceeding 4,000 km.

The International Air Transport Association (IATA) announced full-year traffic results for 2013 showing a 5.2% increase in passenger demand compared to 2012. The 2013 performance aligns with the average annual growth rate of the past 30 years. Capacity rose 4.8% and load factor averaged 79.5% up 0.4 percentage points over 2012.

Demand in international markets (5.4%) expanded at a rate slightly faster than domestic travel (4.9%). Strongest overall growth (domestic and international combined) was recorded by carriers in the Middle East (11.4%) followed by Asia-Pacific (7.1%), Latin America (6.3%) and Africa (5.2%). The slowest growth was in the developed markets of North America (2.3%) and Europe (3.8%)¹.

Table 1. Comparative performance of carriers in December 2012 and 2013

	2013/2012	RPK* growth	ASK* growth
International	6.2%	5.9%	78.2%
Domestic	7.4%	6.2%	79.4%
Total Market	6.6%	6.0%	78.7%

Table 1. Annual performance of carriers in 2012 and 2013

	2013/2012	RPK* growth	ASK* growth
International	5.4%	4.9%	79.3%
Domestic	4.9%	4.6%	79.9%
Total Market	5.2%	4.8%	79.5%

*RPK: Revenue Passenger Kilometers measures actual passenger traffic

*ASK: Available Seat Kilometers measures available passenger capacity

Transport facilitates and stimulates tourist activity and evolution. Cultural and environment factors influence the use of a specific transport means when choosing a tourist destination. The tourist demand for certain products and services can play a decisive role in creating options for new transport means or in the evolution of the already existing ones.

2. Possible, probable and conjunctural risks in air transport that can alter theoretical models

When talking about flying-related risks, one should implicitly refer to flight safety. Flight safety is a term which includes the theory, investigation and classification of flight failures, as well as the prevention of such failures by means of rules, education and training. They can also be applied in the context of campaigns of informing the public about air travel safety. During the past ten years the number of aircraft accidents diminished substantively throughout the world. A recent risk classification evinces:

- Risks related to the environment: storm, fog, volcanic ash, birds, ice on the protection system;

- Plane maintenance risks

They depend on the number of flight cycles (landings, take-offs), on aircraft corrosion and part daily wear. The life of an airplane is measured in the number of landings. An aircraft cannot take more than 75,000 landing, which means approximately 25 years.

- Risks related to crew professionalism

Plane and helicopter pilots are licensed in keeping with European JAR FCL 1, 2 regulations and sometimes only the professionalism of the crews save lives.

Theoretically, nothing is fatal. Unfortunately, in practice there are situations when several factors are fatidical. Sometimes, the crew's training and reaction time can make miracles.

3. Recent evolutions of domestic and international passenger demand

The international passenger demand increased by 5.4% in 2013 as to 2012 throughout the world. Capacity rose 4.9% and load factor averaged 79.3%, up 0.4 percentage points over 2012.

- Asia-Pacific carriers registered a 5.3% growth in 2013, being the strongest in the three major regions. After a slow beginning, the carriers in the region recorded a

substantial demand growth in the third quarter, backed by the performance of the most important economies, China and Japan. Capacity increased 5.2%, while load factor reached 77.7%.

- European carriers registered a traffic higher by 3.8% in 2013 as to 2012, lower as compared to the 5.3% annual growth rate of 2012. Capacity rose 2.8% while the load factor averaged 81%. Modest economic improvements were made in the euro zone in the second quarter while the growing confidence of the consumers and of the businesses created a solid foundation for the international passenger traffic; after the weakness of the previous months, the loss of jobs in the euro zone got stabilised in December.

- Carriers in North America reported the lowest passenger growth rate, 3.0% as against 2012, but an improvement from 1.3% in 2012. With a capacity of only 2.2%, the load factor increased by 0.8 percentage points up to 82.8%, the highest growth for any region. The economy gives positive signs: a better labour force employment rate and more substantial consumption expenses.

- The Middle East airlines recorded the highest passenger traffic growth in 2013, 12.1% as compared to 2012, but below the 15.4% growth registered in 2012 as to 2011. The carriers in the region further benefited from the steady power of the regional economies, particularly of Saudi Arabia and the United Arab Emirates, and from a sound growth of business travels, especially for market development such as those in Africa. Nevertheless, capacity rose faster to 12.8%, while load factor dropped slightly by 0.1 percentage points to 77.3%, from 77.4% in 2012.

- The carriers in Latin America reported 8.1% demand growth in 2013 as against 2012, somewhat less than the 8.4% growth in 2012. This was the second strongest performance (after the Middle East) backed by the sound expansion of the economies of Colombia, Peru and Chile. Capacity increased 7.4% from one year to another, causing a load factor growth to 79.2%, higher by 1.3% from 2012.

- The African carriers rose 5.5%, a little above world average but below the 2012 7.5% rise.

The 5.2% capacity growth matches the 1.9 percentage point increase of load factor to 69%, the lowest among regions. In general, average demand is strong, with a

robust growth of local economies and sustained development of transactional industries internationally. However, some parts of the continent showed weaknesses, including South Africa, whose economy slowed down, with the corresponding impact based on the demand for international air transport.

Domestic air transport demand

The domestic air transport demand increased by 4.9% in 2013 from 2012, as to 4.0% in 2012 from 2011. Capacity rose 4.6% and load factor augmented by 0.4 percentage points to 79.9%. All indicators registered positive gains, the highest growths being recorded by China and Russia.

- in the United States traffic improved 1.9% in 2013 (from 0.8% in 2012), while capacity rose at the same rate, with a flat load factor of 83.8%, the highest in all markets. The demand, improved from 2012, reflects a sustained growing of the consumers' confidence throughout the year, as well as a better labour force employment rate especially in recent months.
- China's traffic rose 11.7% in 2013 as to 2012, the highest rate in all markets. Capacity increased 12.2% last year, while load factor decreased 0.6 percentage points to 80.3%, still the second best in all markets.
- the Japanese domestic market improved significantly in 2013, by 5.2% (from 3.6% in 2012) with capacity rising 5.1%, and load factor to 64.3%, by far the lowest on any market. The significant government boost led to a faster growth rate of the economy in the first half of 2013, which led to better business, higher employment rate and air transport demand.
- the Brazilian airlines registered the lowest demand growth rate last year, with a traffic increase of only 0.8% from 2012. Government's efforts to stimulate the economy bore little fruit, airlines' capacity dropping by 3.3%, taking load factor to 76.3%, as to 71.8% in 2012.
- Indian domestic traffic rose 4.0% last year, as compared to the 2.1% decline registered in 2012, a genuine challenge given the weakening economy, high inflation rate and slowing down manufacturing and resource industries. Capacity rose 3.5% in 2013, with a load factor of 74.6%, higher by 1.7 percentage points as compared to 2012.

Iberia, the first company in the world that issues luggage flight tags/labels online

"The major benefits of the MyBagTag system for the traveller are a higher flexibility and comfort in registering the luggage, since the flight tags/labels can be obtained everywhere accessing <http://www.iberia.com>. Moreover, this service reduces check-in procedures in the airport and allows the travellers to save time and have a more comfortable flight", says the airline.

• Russia had the second strongest domestic market, with a demand growth rate of up to 9.6% in 2013 and a 9.1% capacity growth. The Russian demand is backed by a flexible policy regarding the labour force market and by a government focused on maintaining the labour force employment rate and the sustained revenues level. Load factor stood at 74%.

• Australian airlines developed 2.8% in 2013 from 2012, while capacity grew 3.8%, with a depressing load factor growth rate of 1.0 percentage points, reaching 76.%. The cuts in interest rates failed to boost the economy which continued to have a slow growth rate, higher unemployment rate and fragile consumers' trust².

International airlines registered some \$15.6 billion worth of loss (according to authorised opinions), in real terms at current prices, exceeding the overall profit of this branch since its emergence on the world market in 1919. The causes that generated this loss are:

- the effect of economic recession, which began in 1990, was deepened by the Gulf war of 1991 and affected both the demand and supply of air transport;
- the acts of terrorism and air piracy, which installed a psychological barrier between travellers and air transport, also influencing the attitude of the airlines;
- the fear of the airlines of possible terrorist attacks, which added to the decline of air travels.

As estimated in the '80s, airlines hugely invested in the acquisition of modern aircraft and renewal of their fleet. The scale of air travel decline, the extent of this situation caught the airlines in a highly unfavourable moment, namely with an excess transport capacity as against the demand and real estate funds, and sometimes with big debts. Following the decrease in demand, the drop in their revenues forced the airlines to make discounts in point of fares in order to cope with the air transport liberalisation process, aligned to the global trend of liberalising the trade in goods and services.

Some airlines traversed the financial crisis in better conditions than others. Profitable were the companies which benefited from efficient management, which kept costs under control, registered high productivity and easily adapted themselves to the competitive environment.

In recent months, Iberia performed several reading and resistance tests for the plastic flight tags/labels in the automatic baggage handling system of the Madrid Barajas terminal and in other airports such as Malaga, Palma de Mallorca, Barcelona or Alicante, to ensure a proper operation of the service. The technological development that made possible the implementation of this service required the integration of a large number of systems, of multidisciplinary teams of professionals in a very short period of time.

The airline states that the new MyBagTag service is one of the initiatives of the Agora project, a great strategic project meant to place T4 among the best hubs of the world. Agora has a triple goal: to improve punctuality, to increase the efficiency of Iberia operations in Barajas and to change for the better passengers' experience turning T4 into an easy and pleasant experience. The project initiatives allowed for T4 to be voted as the third best terminal in the world by the prestigious Skytrax consultancy and rating company based on a survey that included more than 12 million passengers in approximately 400 airports all over the world.

<http://evisionturism.com/2013/07/18/iberia-prima-companie-din-lume-care-permite-emiterea-online-a-efichetei-pentru-bagaie/>

In 2000, although the American companies (Delta and AMAR Corp) were among the best in the world, the list of the most profitable airlines was dominated by the Asian carriers. They dominated in point of number both the American and the European airlines. Ranking among the top 10 in 1994, British Airways and KLM went down to places 15 and 24 respectively in 2000. Likewise, although it registered huge losses during the 1990-1995 crisis (the net loss stood at \$1,494.9 million) and is state subsidised in order to survive, Air France ranked eighth in 2000 among the top 10 most profitable airlines of the world (2nd in Europe after Lufthansa).

In point of number of passengers, the hierarchy is more or less similar. The American airlines occupy the first six places followed by the Asian airline All Nippon Group and the European Lufthansa, Air France and British Airways ranking 9th, 10th and 11th respectively. Were only the international air travels taken into consideration, then just a few European and Japanese airlines would transport more passengers than those in North America.

Most of the aircraft fleet is located in the areas with the busiest traffic. More than 40% is to be found in North America (in the top of the airlines by number of airplanes, nine out of ten places are occupied by American companies) followed by Europe and Asia-Pacific.

Due to the busy traffic among the big Asian cities, to the overcrowding of the main airports, to the poor ground transport infrastructure and the lack of appropriate facilities on the secondary airports, most of the Asian airlines chose to purchase large capacity aircraft. This has proved to be an erroneous strategy since in conditions of traffic recession it is difficult to get an optimum load factor. Asia-Pacific is the only region of the world where the number of large aircraft (1,100 in 2000, that is 37% of the number of large capacity aircraft worldwide) exceeds that of small capacity aircraft

(1,050 in 2000, 13% of the total number of small capacity aircraft in the world). The North American fleet is dominated by small capacity airplanes (47% of the number of small capacity aircraft worldwide) while Europe combines the two types (at a ratio close to world average), namely 73% small capacity aircraft and 27% large capacity aircraft.

This criterion (capacity) evinces a clear-cut segmentation of aircraft manufacturers. Boeing is the biggest manufacturer of large capacity aircraft followed by Airbus and McDonnell-Douglas. As for small capacity aircraft, the market is divided among manufacturers in Great Britain, France, Italy, Germany, Sweden, Canada, and Brazil.

When it comes to fleet, alongside the number and capacity of the aircraft, highly significant is also their age, as the maximum fatigue life (physical and moral wear) is 14 years.

Since the present age of most aircraft exceeds 20 years, and air traffic intensifies in time, it is but logical that world fleet be "older" nowadays as compared to the '60s. The fact should be mentioned that the average age of the airplanes in Latin America is around 15 years, and aging, while that of the planes in North America is 13 years, and also aging.

While this strategy (partially justified by the US tax policies) could lead to savings as depreciation becomes less expensive, operating costs go up significantly after 10 years of aircraft operation due to the increase of fuel and airplane maintenance expenses. Moreover, in case of an industrial recession and of the constant need to diminish the number of planes, the reselling value (which is rather low due to the advanced age of the plane) does not yield significant profit leading rather to losses.

At the opposite pole, the European and Asian airlines are more conservative in fleet management, its age being approximately nine years in Europe and eight years in Asia, with a tendency of staying constant at 15. This strategy seems to be more expensive in point of depreciation, but operating costs are more competitive, while the sale of aircraft (which are virtually new) ensures a profit to these companies helping them to survive in this branch.

4. Game theory– a reliable model when estimating the cost of the tourist package

Game theory is a mathematical modelling instrument used in various applications in social sciences. Unlike the traditional economic methodology, the game theory models do not ignore the influence of one player's action over the others and vice versa. Consequently, the methodology is useful in developing tourist products when service providers and travel agencies operate in interdependence in a competitive environment.

In a game theory model, each decision-making factor (player) has a plan of action (strategy) and is supposed to be a winner. Four features – perfection, symmetry, certainty and fullness – define the type of information the players use in order to develop their strategy. Finding a solution to a game often implies an equilibrium calculation where each player's strategy maximises profit.

Several studies on game theory offer interesting prospects regarding the phenomena in tourism and hospitality industry. For instance, a price setting game model shows how the travel agency, the transporters and the hotel operators agree on rates and fares and reveals the conditions in which the hotel and the transporter are closer to maximising profitability when applying yield management.

Franchise, a dominant form of contract between tourism companies, is better understood due to another game theory model which explores the role of royalties (sharing income agreement) and monitoring. "The prisoner's dilemma" can be used within travel agencies particularly in decision making, conflict manipulation, competition, co-operation, part-takings, and alliances between the organisation and other companies. It is assumed that here are two or more players in a decision-making situation, the purpose being to conceive a plan maximising gains and minimising losses. Using these games the travel agencies can study various combinations of options (group rates for accommodation, meals and ground transport combined with a range of air transport variants) that can turn the situation in their favour. In keeping with game theory, in a business context, success or failure predicts the competitive behaviour of other organisations and, if possible, the co-operation of the major actors can be beneficial for all parties.

Final conclusions

The International Air Transport Association (IATA) has forecast that the next 20 years will witness a growth of the number of passengers up to 7.3 billion by 2034. This matches an average annual demand growth of 4.1%. China will surpass the United States, having the biggest air transport market (domestic and international traffic) by 2030. In 2034 the flights to and from China

will average 1.3 billion passengers, that is 856 million passengers more than in 2014, at a 5.5% average annual growth rate. The flights to and from the United States are expected to grow at a 3.2% average annual rate to reach 1.2 billion passengers in 2034 (559 million more than in 2014). The "Global Passenger meteo" report of IATA prepares passenger flow forecasts for the next 20 years taking into consideration three key factors: evolution of the living standard, of the population and of demographic changes, the fares and availability of aircraft fleets. In 2034, China (856 million new passengers), United States of America (559 million), India (266 million), Indonesia (183 million) and Brazil (170 million) will be the five markets with the fastest annual growth rate of the number of additional passengers. Eight of the ten markets with the fastest growth rates in percentage points will be in Africa. Central African Republic, Madagascar, Tanzania, Burundi and Kuwait are the five markets with the fastest growth rate. Destinations in Asia and South America will also witness a fast growth. Air connectivity can prosper only through "Open Skies" operations.

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¹ "We saw healthy demand growth in 2013 despite the very difficult economic environment. There was a clear improvement trend over the course of the year which bodes well for 2014. Last year's demand performance demonstrates the essential and growing role that aviation-enabled connectivity plays in our world. And with system-wide load factors at 79.5% it is also clear that airlines are continuing to drive efficiencies to an ever-higher level," said Tony Tyler, IATA's Director General and CEO.

² Price is still a key driver of consumer choice, but access to information has made price transparency almost absolute, which has made price differences between comparable products almost extinct. As such, price has become more of a driver when choosing between different product types, and operators have learned to offer a wider array of products to cater to every need. Whether distinguishing between business and leisure travellers, or between older and younger travellers, today pricing is more reflective of what has become the most precious of commodities: time. (WWW.iata.org)