POTENTIAL OF ZAGREB INTERNATIONAL AIRPORT FOR THE ESTABLISHMENT OF LONGHAUL FLIGHTS WITH THE UNITED STATES

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ABSTRACT

Globalization and economic development are the main drivers of demand for passenger and goods transport. Although liberalization generally opens the way for a rapid economic growth, there are still many countries that are trying to oppose the liberalization by using administrative measures. Administrative barriers, the disintegration of Yugoslavia, development of the independent states, war and uncertainty of air traffic are some of the reasons for having waited for more than 20 years and still a regular flight between Zagreb and some of the destinations in the United States has not been established. The demand for air transport services is one of the key determinants that affect the establishment of new lines. To re-establish regular long haul flights, numerous analyses of traffic flows should be carried out, potential air carriers detected, as well as the regulations and directives in the field of air transport analysed, so as to have the results showing the potential of the Zagreb International Airport and its catchment area. By signing the "Agreement between the European Union and the United States on air transport" with the impact of all EU Member States according to the "Open Skies Agreement", an important step was made in the normalization of the international air traffic status. It meant the creation of open air space in the transatlantic zone, without any restrictions in air traffic. This means that, for the first time European and American airlines can, without any limitation, conduct traffic from any point in the EU to any point in the United States and vice versa. Following the research of demand for air transport services, potential of catchment area of the Zagreb International Airport and detecting potential carriers, regarding their fleet and spectrum of destinations serviced in Europe, it will be possible to determine the likelihood of establishing direct lines in transatlantic traffic.

KEY WORDS

Long haul flights, Zagreb International Airport, Open Sky, USA, market liberalization

1. INTRODUCTION

Globalization and integration processes affect the strategy of entering and conquering the market, which also affect the market changing conditions and the ways of competition. Nowadays, airlines economical operations depend on several factors of which the most important are: efficiency level, exploiting a niche in new markets, reducing costs, new products and services to achieve price advantage in the market. In accordance with the conclusion of bilateral agreements on the establishment of air traffic, regulations of the flight rules between the two countries are being defined, determining the city pairs, flights frequency,
aircraft types that will serve agreed destinations, fares and rules for issuing driving licenses. Liberalization process has a significant impact on demand for air transport services leading to economically rational market structures, increasing the economy effects, which directly result in the new opportunities in entering new markets, although many countries are trying to enclose it with protective measures. Before the establishment of the new route it is necessary to conduct a number of analyses, such as analysis of traffic parameters, traffic flow, study of the prescribed regulations at European and national level in order to determine the advantages and disadvantages of introducing the listed route. Currently, between Croatian and American destinations direct connection doesn’t exist. All trips made between the USA and Croatia are via one of the transfer hubs in Europe. Trips that require more than two stops until the final destination are not attractive and are avoided often by passengers and they choose destinations that are better-connected. Tourism, as a subsystem of the overall economy in the future, in becoming a strong support for the overall country development, its further development has to be on improving traffic connections with potential source markets.

2. REPUBLIC OF CROATIA LEGAL REGULATIONS THAT REGULATE AIR TRAFFIC

Efforts to establish direct flights from Zagreb to destinations in the USA exist since Croatian independence. In addition to the Zagreb Airport, other airports in Croatia have been developing strategies to attract foreign air carriers to arrange direct transatlantic flights. In the previous period, numerous meetings between airports and air carriers were held; foreign consultants for feasibility studies were hired to introduce a direct route between the two markets, who carried out a large number of business trips to the "ROUTES" conference or to the headquarters of air carriers. For the establishment of international air traffic, obligation is to establish a legal framework, which is based on international agreements and contracts. A number of agreements are signed at the present time, based on the principles of respect of common rules relating to safety, security and air traffic management. Special attention is paid to the field of harmonization of national legislation with international regulations and practices, harmonization of standards in training of operating personnel, standards of aircraft and equipment maintenance and on issues on environmental protection. Policy of international air traffic is based on the key elements:

- bilateral and horizontal agreements,
- ECAA (European Common Aviation Area) Agreement - Agreement on the European common air space and the Open Skies Agreement (contract between the EU and the USA),
- global partnership.

The segments above are consumed under the same competition conditions without discrimination based on nationality, with the objective of full liberalization in terms of capacity, frequencies and fares. The Republic of Croatia due its geographical location is potentially important transit area, because air corridors through the space present the shortest routes between the United States, Western Europe, the Middle and Far East. USA and Croatia reached an agreement on the expansion and liberalization of civil aviation between the two countries through the Open Skies agreement. The international legal framework for the establishment of regular air traffic between the Croatian and the USA, the legal acts under the name: "The agreement between the Croatian Government and the Government of the United States on air transport" ("Open Skies"). Another key document is "Agreement between the European Union and the United States on air transport" (The EU-US Air Transport Agreement), with effect on all EU member States. Conclusion of this Agreement based on the "Open Skies" is an important step in the liberalization of international air transport unfolding. For the European Union, it is the creation of open space in the transatlantic air traffic zone: represents a single aviation market between the EU and the USA and the free flow of capital without restrictions. This means that for the first time European and American airlines can, without limitation, conduct traffic from any point in the EU to any point in the USA and vice versa.
American airlines have additional right, and that is the right to fly between points in different EU member states. European airlines were given the right to fly between the United States and the countries which are not members of the EU (e.g. Switzerland).

"The agreement between the European Union and the United States on air transport" is replaced by the agreement on air traffic (according to the "Open Skies"), which had previously been entered into the USA with individual EU member states. The "Open Skies" agreement allows a significant expansion of the establishment of international passenger and cargo flights to and from the USA, which removes administrative barriers to the establishment of air traffic between the two major markets, and significantly reduces interference of state authorities in the commercial decisions of air carriers on routes, engaged capacities and fares. In that way, competition is allowed, sense of competition and its positive effects on the service quality and the supply flexibility, which contributes to the development of market services in the air transport and increasing consumer demand for services at affordable rates.

3. PARAMETERS OF LONG-HAUL AIR TRAFFIC DEVELOPMENT

For the establishment of long-haul routes, it is necessary, first to make a qualitative analysis of state of key parameters such as: technical and financial assumptions, administrative requirements, including analysis of the actual current circumstances. In addition, it is important to research demand in aviation market and detect promising starting points and destinations through data analysis. Within the parameters to be observed, the most important are:

- size of traffic when it comes to the potential new routes (statistic information and airport reports),
- the reason for the establishment of potential routes,
- "purpose of travel" - basis, which is usually interpreted to develop new lines,
- time of travelling – certain days in a week,
- market segmentation – determine the target group of passengers,
- passengers’ desires when purchasing tickets - for example, surveys,
- the number of transported passengers according to a specific destination
- estimated number of passengers who would want to travel on this route,
- stimulating market demand methods.

The effective adaptation of the aviation fleet at the annual expected occupancy solves the problem of different traffic demand. Selection of the optimal structure of the fleet is defined by the following factors:

1) operational exploitation - performance aircraft, range, speed, block-time, flight time and fuel consumption,
2) financial, load factor, network flights capacity, target operating target profit, interest cost, loan repayments, and other income and expenses,
3) marketing commercial - a modern fleet, flight frequency, direct / indirect flights,
4) contractual- ordering size, price escalation, correspond concessions, special equipment and the aircraft requirements.

The original problem selecting the required fleet in serving long haul flights between Croatia and the United States stems from the seasonal traffic. In the Republic of Croatia there is a very large oscillation for the transport services between the summer and winter months, demand. The problem lies in finding appropriate solutions between different aircraft sizes to various phenomena peak loads [2]. Given the specificity of long-distance traffic it is necessary to allocate aircraft types that can serve long-haul routes. The most suitable aircraft that meet the requirements are listed in Table 1.
From the table, it can be seen that Croatia Airlines as the largest national carrier does not meet the requirements defined in the fleet for the purposes of servicing long-distance traffic. For this reason and because of the previously mentioned legal aspects, come to the conclusion that the only possibility of establishing a long-haul flight is on the assumption that the observance enforced by US air carriers. To achieve a rational and productive business, it is needed to long-haul traffic served by the carrier which has a broad structure of the fleet with regard to capacity. When the correlation put the demand for air traffic and capacity aircraft which have sufficient range to fly without landing between the origin and the destination, the choice boils down to only two to three types of aircraft with less capacity seats. Since this is a relatively old type of aircraft that is equipped with engines of high consumption, only a small number of companies held them in the fleet. It is important to question the feasibility and the introduction of the line for the following reasons:

- big expenses that come after introducing a new line to traffic;
- high risk because of lack of ticket sales;
- lower ticket prices that stimulate market for larger demand;
- economic situation that dictates international trade.

Currently there are three major carriers (Delta Air Lines, United Airlines, American Airlines) performing transatlantic flights but they, however, are focused on major hub in Europe, most notably Paris, London, Amsterdam and Frankfurt which are located in western and developed part of Europe with a high concentration of the population is large gross national product. The pictures below show...
the lines of the three largest air carriers from their main hubs in the United States to Europe.

![Figure 1. American Airlines routes from the airport Dallas, Fort Worth International to Europe](source: CAPA Centre for Aviation, 2017.)

![Figure 2. United Airlines routes from the airport Chicago O’Hare International (ORD) to Europe](source: CAPA Centre for Aviation, 2017.)

![Figure 3. Delta Air Lines routes from airport Atlanta, Hartsfield-Jackson International to Europe](source: CAPA Centre for Aviation, 2017.)

According to current indicators of transport demand it is evident that the bulk of transatlantic traffic takes place over four largest airports which are also the seat of the largest airlines and alliances led (Lufthansa - Star Alliance, British Airways - OneWorld, Air France and KLM - Sky Team).

The biggest market potential have Great Britain and Germany in the area of which Frankfurt manifested as the primary airport for long-haul traffic. In most states, where the airport is outlined as the main transportation hub, the system “hub and spoke” is applied. Frankfurt as a main hub for transatlantic traffic in 2015 had 3,348,700 passengers which is a third of the total 61,040,613 million passengers whose destination was the United States; representing 11.5% of total
turnover. Major US destinations are New York (JFK), San Francisco (SFO) and Toronto (YYZ).

Factor affecting potential development of the airports is the dominant carrier. In the previous period, States have developed and defended various administrative barriers to domestic carriers, often national carrier, that is, including transport policy and economic interests of the domicile country developed network of destinations. In recent times, there were more cases of takeover of smaller carriers by large or within a carrier formed a new company that has used another business model (Eng. Low cost). Croatia Airlines, as part of the alliance Star Alliance, founded by Lufthansa, currently serves as a "feeder" to major hubs and is the main interest of Lufthansa as a strategic partner that Croatia is established transatlantic traffic because it will lose this part of the passengers on their flights. At the same time, Croatia Airlines, which was unable to due to inadequate fleet establish a transatlantic flight, lose part of potential passengers. The above shows that, in addition to adequate transport policy and a strong dominant or national carrier, a key factor for the development of the airport and the volume of transfer traffic.

4. POTENTIAL OF ZAGREB INTERNATIONAL AIRPORT

The opportunity and potential of Zagreb International Airport when establishing a long-haul flight is mainly manifested in connecting the Croatian Diaspora in the USA which is one of the largest in the world and represent the Republic of Croatia as a desirable tourist destination. Based on the assessment of the Croatian Embassy and the Consulate General of the Republic of Croatia in the United States, Croatian Catholic missions, the census in the USA and based on the evaluation of the Croatian community in the United States today has a population of 1.2 million Croats and their descendants. The most numerous Croatian communities with the highest population of Croatian origin are located in:

- Chicago and the surrounding area - 150,000 inhabitants,
- St. Louis - 40,000 inhabitants,
- Detroit - 7,000 inhabitants,
- San Pedro - 35,000 inhabitants,
- San Jose - 5,000 inhabitants,
- New York - 80,000 inhabitants,
- New Jersey - 80,000 inhabitants,
- Connecticut around 80,000 inhabitants

In addition, in Canada there are about 250,000 Croats. The figures show that in North America has a large population of displaced Croats. Croats have emigrated due to economic and political reasons but it can be concluded that there were cases of immigration either of the above reasons. In the refugee wave, with the Croats, there’s emigrant community of other nations from the former state (SFRY - Socialist Federal Republic of Yugoslavia), which as the final destination for a new life chose the US. They all have significant potential to generate demand for direct flights between North America and some of the destinations close to their final destination, or areas prior to emigration. For that reason, there is a question about the possible establishment of Zagreb as the main hub of Southeast Europe, in order to enable better and more direct connections abroad. In this way, it would be possible to spread the gravitation zone of Zagreb International Airport, and to significantly increase the potential of Zagreb. Zagreb can be developed into a regional hub that would gravitated travelers from neighboring countries, but it is necessary to look at the big picture of the whole idea. Until recently, none of the airport, in the wider environment, had established a direct line toward North America. It was not until last year where the route between Belgrade and New York, served by Air Serbia was established. With this route is possible to connect passengers from the Croatian daily flights to Belgrade, which are then transported to the United States. With that, Belgrade has become a competitive airport that preceded International Airport Zagreb and Croatia in general.

There is no question of the development of Zagreb as a regional hub due to the fact that in the former Yugoslavia most of the traffic to destinations in North America took place through Zagreb. At that time, there were direct flights New York - Zagreb - New York, which has served the airline PAN AM. Due to the increasing demand of tourists, circular line New York - Zagreb - Dubrovnik - New York was introduced - which is serviced by the same
5. PROPOSAL OF PROGRAMS FOR ESTABLISHING LONG HAUL FLIGHTS TO INTERNATIONAL AIRPORT ZAGREB

The Republic of Croatia has been recognized as an attractive, Mediterranean, tourist destination. Tourism is an important segment of the Croatian economy and therefore there is no question in establishing a system of indicators in evaluating and monitoring the sustainability of tourism. But there are limiting factors relating to: the availability of hotel capacities of higher categories, the lack of entertainment. In the recent years, there has been a significant increase in tourists from the North American market. Unfortunately, due to many barriers by 2016 no air carrier has established a direct or even the seasonal long-distance traffic between the USA and Croatia. Taking into account that the total volume of air traffic that is generated by all airports in the Republic of Croatia is slightly higher than the 8.1 million passengers per year (in 2016), there is a little chance for any airport in the region to establish a regional traffic throughout the year with the North American market. It is known that a small number of frequencies is not attractive for business traveling and business travelers will continue to plan their trips through some of the transfer hubs, leading with shortest trip duration. In the case of Croatia, as a tourist destination it would be preferable to turn direction in getting a better connection; seasonal flights. The introduction of seasonal flights does not generate a significant increase in the volume of total traffic nor increase the number of frequencies which will arouse the interest of large carriers to establish direct flights to markets with weak and varying potentials. All passengers from distant countries who come to the Republic of Croatia must use one or more transfer hubs which significantly extend the travel time, reduces pleasure during the trip, and thought-provoking in choosing other destination which has direct flights. Although most developed economies emerged from recession cycle or are at the exit, the effects of the economic recession are still visible in air traffic. Therefore, all air carriers must be very careful when making decisions on the establishment of new routes, especially on the markets that do not have extreme potential and are not able to assert itself as a regional hub which are capable to attract transfer traffic.

6. CONCLUSION

The aim of this paper is to highlight the complexity of the factors of air traffic and the many factors that determine the demand for air transport services in the further development of air transport. Although the Republic of Croatia adopted new Transport Development Strategy in 2014, without adequate transport policy and and promoting the "hub and spoke" model of operation of air carriers, the continuous development of the network destination and the establishment of new direct lines in regions gravitate to each regional hub, it is impossible to expect a significant increase in demand for services of air traffic in the future as well as the establishment of a transatlantic or other long-distance traffic. Such focus of future air transport development should follow the development of the dominant domestic carrier. Due to the small potential of the domestic market, as emissive markets and relatively weak demand in the transatlantic or global source markets for destinations in Croatia, air carriers are not interested in seriously evaluating the economic feasibility of establishing a line in regular traffic to Croatian airports. In the next period, it can be expected to have only limited organized charter flights and only during the summer season. To change this situation, primary need is to establish better transport links with neighboring regions and develop a network of destinations in order to increase transfer traffic. Only by crossing the border of 4-5 million passengers at each airport it is possible to expect expressions of interest of airlines to establish a long-distance traffic.
Airlines that have for years enjoyed subsidies from the state budget and protect market various administrative barriers, which prevent foreign market entry competitive carriers, missed the opportunity to adapt to new market conditions, where the process of liberalization started. Sluggish and inefficient systems with individual air carriers caused the loss of competitive ability for competition. Air carriers that are not able to adapt to new market conditions are doomed to failure (bankruptcy) and exiting from the market. Delayed reaction in terms of restructuring, the application of some of the new business model, the inability to compete with other carriers in entering new markets will use the leaders of the alliance who’ve already mutually shared small markets and thereby meet their business interests. Business policies implemented by the market leaders in air transport will significantly affect the operations of the Croatian airports. Air carriers, in the near future, will be the key factors that will satisfy their own business interests and relations in certain markets and dictate the dynamics of the individual markets. In this way, it will have a direct impact on the pricing policies of airports and the routing of traffic flow of passengers to the destinations that best suits them or where they can expect the greatest profit. In a broader context, this means that the mutual interests of airlines significantly affect the attractiveness of certain destinations, hotel occupancy rate of resources, and thus the overall performance of the tourism industry. Accordingly, based on the analysis of the routes of individual airlines, the potential market of air traffic in Croatia is small and not sufficiently attractive for deeper evaluation of the cost-effectiveness of introducing new lines. Time of politically conditioned opening line is long gone, especially after the liberalization process and the signing of "Agreement between the European Union and the United States on air transport " (The EU-US Air Transport Agreement). Now airlines decide independently on the elimination of unprofitable and the introduction of new lines, for which feasibility studies have shown their profitability.

In the next 10-15 years, it’s not expected for any air carrier of the United States to open all year liner services between any city in the United States and Croatia. If that line could attract business travelers and part of commodity shipments, it would be necessary to maintain lines with a minimum three to four frequencies per week. Such frequency of flights requires a large gravitational zone, which is industrial and transportation developed and the airport which has built adequate infrastructure and equipped with equipment for handling wide-body aircraft category "E" and "F". The analyzed data show that with all the traffic that is now done through all Croatian airports (total 8.1 mil. Passengers in and check-out in 2016), none of the airport have enough resources to generate even minimal demand for long-haul traffic. Without coordinated cooperation between carriers and airports it can’t be expected to get new flights. Efforts from only airports are not sufficient to ensure the viability and profitability of the newly established line.

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