

DOI: <https://doi.org/10.32782/2524-0072/2022-42-34>

UDC 656.71

## FACTORS INFLUENCING THE AIRPORT'S COMPETITIVE STRATEGY FORMATION

## ФАКТОРИ ВПЛИВУ НА ФОРМУВАННЯ КОНКУРЕНТНОЇ СТРАТЕГІЇ АЕРОПОРТУ

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The article is dedicated to the selection of key factors that influence the airport's competitive strategy formation. The aspects of the "regional airport" concept definition, based on the priority of serving short and medium range routes as well as the point to point destinations, are considered. The benefits of a Hub airport model operation during the formation of the competitive development strategy are determined. The classifications of the airports proposed by the Airports Council International and the US Federal Aviation Administration were review since they are important to determine the airport's competitive advantages. The key obstacles to the implementation of the Hub airport competitive strategy are outlined. The variations between key prototypes of hub models – Hourglass Hub and a Catchment Area Hub are described. The classification of airports competition is considered in order to improve the understanding of the factors that are important for the formation of their competitive strategy.

**Keywords:** competitive strategy, factors, competition, Hub airport, infrastructure, classification.

Стаття присвячена виділення ключових факторів, які впливають на формування конкурентної стратегії аеропорту. Виявлено, що типовий аеропорт включає комплекс злітно-посадкової смуги або смуг, пасажирського терміналу або терміналів, а також комплекс будівель для зльоту, посадки та обслуговування повітряних суден та об'єктів для пасажирів. Підкреслено принципові відмінності в діяльності аеропортів різних типів (міжнародних та внутрішніх), а також необхідність більш чіткого визначення факторів, які впливають на діяльність аеропортів при формуванні їх конкурентних стратегій. Розглянуто особливості визначення поняття «регіональний аеропорт» на основі першочерговості обслуговування коротко- та середньоміагістральних рейсів та рейсів з пункту в пункт призначення. Визначено переваги хабової моделі функціонування аеропорту при формуванні конкурентної стратегії його розвитку. Проаналізовано класифікації аеропортів за підходами Міжнародної ради аеропортів та Федерального управління цивільної авіації США в контексті важливості для визначення конкурентних переваг аеропорту. Окреслено ключові перешкоди на шляху реалізації конкурентної стратегії «аеропорт-хаб». Встановлено ключові показники, які дозволяють оцінити результативність впровадження конкурентної стратегії «аеропорт-хаб» серед яких основними є відсоток трансферних пасажирів, кількість маршрутів, кількість літаків базової компанії, частка пасажирів, що обслуговуються базовою компанією тощо. Виявлено, що найбільш репрезентативним показником при здійсненні даної оцінки є частка трансферних пасажирів в загальному потоці пасажирів. Наведено відмінності між ключовими прототипами моделей хабу – хабу-пісочний годинник та хабу зони покриття. Розглянуто класифікацію видів конкуренції аеропортів задля поглиблення розуміння факторів, які є важливими при формуванні їх конкурентної стратегії. Резюмовано, що підтримання наявних та здобуття нових конкурентних переваг конкретним аеропортом передбачає тісну його взаємодію із іншими ключовими агентами ринку авіаційних перевезень – авіакомпаніями.

**Ключові слова:** конкурентна стратегія, фактори, конкуренція, аеропорт, хаб, інфраструктура, класифікація.

**Problem statement.** Considering the factors that influence the formation of the air transport companies' competitive strategy it should be noted that air transport has the main advantage over other modes of transport – saving time for

the transportation of passengers and goods. At the same time, air transport is usually used for the carriage of goods and passengers to medium and long distances, that calls for the proper level of the people wellbeing, the development of cul-

tural, business and scientific interconnections between states as prerequisites for the provision of aviation services.

**Analysis of recent research and publications.** The works of such classics of management theory as M. Porter [9], F. Kotler [3], I. Ansoff [1], R. Buaron [2], V. Pertersen [7], Dzh O'Shonessi [5] and others are dedicated to the formation of a competitive strategy of the enterprise, as well as the selection of types of competitive strategies and development of approaches to strategic management taking into account various factors that specific for the enterprises of different modes of ownership and size. At the same time, various aspects of managing the companies' competitiveness and its improvement, including the methods of strategic management, are also of interest to Ukrainian researchers – N. Tarnavska [12], S. Klymenko, T. Omelianenko, D. Barabas [4], O. Polous [8], M. Shulha [13], S. Smerichevskyi, S. Zatsarynin [11] and others. The works of K. Sydorenko [10] and Yu. Orlovska [6] are devoted to the study of the specific aspects of competitiveness of the airports' activities.

Therefore, the review of current publications on the problem under study allows to summarize the relevance of conducting a more profound study of factors influencing on the formation of the airport's competitive strategy.

**Identification of the open and outstanding parts of the general problem.** The airports - transport enterprises that in close cooperation with the airlines handle the passengers, luggage, cargo and mail, organize the flights and maintain the aircrafts – are the main component of the air transport system.

The Typical Airport includes a runway or runways, passenger terminal or terminals, as well as a set of facilities for the take-off, landing and maintenance of aircraft and the facilities for the passengers. Airports operate on the basis of licenses issued by government agencies that determine the type of airports (international or domestic). Domestic airports do not have customs and immigration services and therefore cannot handle flights to or from a foreign airport, which is fundamentally different from international airports.

The mentioned fundamental differences in the activities of airports of different types, as well as the need to clearly identify the factors that influence the activities of airports in the formation of their competitive strategies, determine the relevance of this study.

**Formulating the aim of the article.** The aim of the article is to formulate a theoretical and

practical vision of factors that influence the formation of a competitive strategy of the airport.

**Presentation of the basic material of the study.** The airport is a complex engineering set of buildings, facilities and equipment that occupies large areas. In the theory and practice of organizing airport business, you can find quite a few approaches to the classification of airports. We propose to consider key ones that directly influence the formation of a competitive strategy.

There is an ongoing debate over the definition of "regional airport". Some attempts to define a regional airport link the notion of "regional" to the fact that the catchment area of an airport is located outside a capital city. There is no definition of a regional airport at EU level to date.

ACI EUROPE considers that the catchment area and/or annual traffic of an airport are not valid indicators of whether an airport is regional or not.

An airport should be considered as regional if it:

- primarily serves short and medium range routes and
- primarily serves point-to-point destinations [16].

Hubs are the airports that provide convenient connections for passengers of different flights, and have a significant share of transit passengers.

Hubs have a developed auxiliary infrastructure (hotels, shopping centers, conference halls, entertainment centers etc.), as well as aircraft maintenance bases.

Regional airports – provide air traffic between individual points, have an insignificant share of transit passengers and poorly developed auxiliary infrastructure since it is not essential for their effective operation.

Based on the annual passenger traffic, (pre-pandemic (2019) traffic levels), according to ACI information the airports are divided into the following groups:

- Majors Top 5 busiest airports in Europe;
- Group 1 Airports welcoming over 25 million passengers per year;
- Group 2 Airports welcoming between 10 and 25 million passengers per year;
- Group 3 Airports welcoming between 5 and 10 million passengers per year;
- Group 4 Airports welcoming below 5 million passengers per year [15].

At the same time the US Federal Aviation Administration provides the different classification that is relevant to our research

So there are approximately 14,400 private-use (closed to the public) and 5,000 pub-

lic-use (open to the public) airports, heliports, and seaplane bases. Approximately 3,300 of these public-use facilities are included in the National Plan of Integrated Airport Systems (NPIAS) (Table 1).

The US legislation categorizes airports by type of activities, including commercial service:

- primary;
- cargo service;
- relievers;
- general aviation airports [17].

However, since such a classification is not accepted in Europe, we propose to use the classic definition of Hub Airport taking into account that the Hub and the International airport are not synonymous. Even large international airports may not be Hubs (TLV, BUH, etc.) while domestic airports may sometimes be the Hub (airports in India, China, etc.)

Airports having the status of hubs operate on a "wave" principle, that is, the process of handling of arriving and departing passengers is carried out in stages or so-called "waves". Initially, the airport hosts a considerable number of aircraft at a few minutes, usually in the morning. After that, the "wave" of departures follows.

The Austrian experts J. Frank and Y. Rubanov classified the benefits of Hubs for all subsequent categories of stakeholders – State, passengers, airlines and airport owners. So, according to the experts, the advantages for the State are the following:

- growth of the gross domestic product (GDP), new jobs, direct foreign investments in the region;

- connection of small settlements with distant and global markets;

- provision of services related to local market needs (such as operating destinations that are attractive to the region).

At the same time there are the following benefits for passengers:

- more direct flights;
- more opportunities to get the return flight on the same day;

- a greater choice of destination.

The airlines benefit from:

- greater flight frequency;
- reducing market risks as a result of saving the passenger on their routes network;
- expanding a reduced cost network.

And finally the Airport owners benefit from:

- increase in passenger traffic;
- income growth;
- stronger market positioning in relation to airlines [14].

An airport's potential to become a hub must therefore be carefully evaluated by the management to take the most effective decision on the expediency of implementing this competitive strategy. There are several criteria which can be used. The most important indicators are the following: percentage of transfer passengers, number of destinations, number of home-based aircrafts, home carrier's share of passengers

Table 1

**Airport categories according to US Federal Aviation Administration**

| <b>Statutory Definition</b>           | <b>Criteria</b>   |
|---------------------------------------|---|
| Commercial Service                    | Publicly owned airports with at least 2,500 annual enplanements and scheduled air carrier service. Primary airports are a commercial service airport with more than 10,000 annual enplanements. |
| Large Hub                             | Receives 1 percent or more of the annual U.S. commercial enplanements   |
| Medium Hub                            | Receives 0.25 to 1.0 percent of the annual U.S. commercial enplanements   |
| Small Hub                             | Receives 0.05 to 0.25 percent of the annual U.S. commercial enplanements  |
| Nonhub                                | Receives less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements   |
| Nonprimary Commercial Service, Nonhub | Also referred to as nonhub nonprimary, these airports have scheduled passenger service and between 2,500 and 10,000 annual enplanements.  |
| Reliever                              | An airport designated by the Secretary of Transportation to relieve congestion at a commercial service airport and to provide more general aviation access to the overall community.            |
| General Aviation                      | A public-use airport that does not have scheduled service or has scheduled service with less than 2,500 passenger boarding each year.   |

etc. The most representative indicator for such an evaluation is the share of transfer passengers as compared to total passengers.

The study of the main prerequisites for the organization of the airport's Hub model allows to identify the potential bottlenecks which currently exist on the way to the competitive strategy implementation and may slow down or even stop the development of this model (Table 2).

It should be noted that in fact, that in practice, there are two main prototypes of Hub models, which are schematically shown in Fig. 1a and Fig. 1b – Hourglass Hub and Catchment Area Hub. The hourglass hub depicts a typical north-south (could also be West-East) passenger stream which is bundled in the hub for distribution to southern destinations in the morning. This model is typical for charter flights: e.g. Palma de Mallorca receives passengers from all over Germany, which Air Berlin then distributes to their final leisure destination in Spain. In the evening, the passenger stream returns via the hub – flights then connect from the south to the north.

The catchment area hub – or hinterland hub – collects passengers from its extended catchment area (blue circle Figure 1b) and distributes them to destinations outside of the catchment area.

The location and planning of airports is determined by the standards of technological design of the civil aviation airports, which are generally accepted for all airports in the world. The airport as a single system is a set of operational facilities, that require constant financing for their renewal and reconstruction or new construction. To be competitive the airport must have such an infrastructure that can provide full flight handling according to the carrier's standards (starting with the opportunity to accept the appropriate type of AC – runway pavement, length and category, aprons and parking posi-

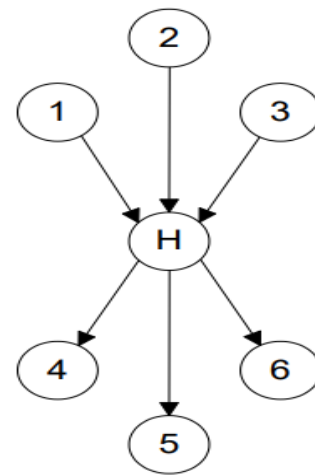


Figure 1a. Hourglass Hub

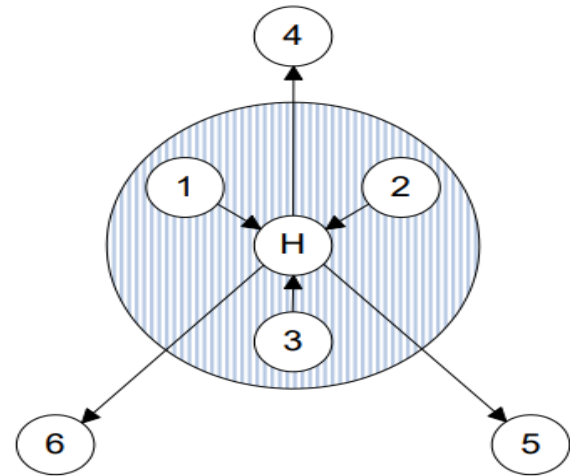


Figure 1b. Catchment Area Hub

tions capacity, etc., and ending with the quality of service and size of the Lounges in the terminals).

The availability of several runways determines the level of airport development and allows it to build up a competitive strategy more efficiently. The runway is characterized by size (in meters), pavement (for example, asphalt con-

Table 2

**Potential bottlenecks for Hub competitive strategy development**

| Airport Side   | Airline Side  |
|--|---|
| Capacity Limitations (Terminal, Airside, Landside)                     | Problems of Home carrier development  |
| Lack of State Support  | Strategy difference Airline/Airport   |
| Unattractive price policy & service quality                            | Unattractive price policy & service quality   |
| Unattractive Shops in Duty free area (e.g. assortment, quality, price) | Problems generated by main competing airlines (because of direct competition for transfer passengers) |

crete, cement concrete, etc.) and the capacity of the pavement.

According to the length of the runway, the airport management decides on the types of aircraft that can be accepted by the airport, taking into account their total weight. According to the operational characteristics of the runway, restrictions can be set on the number of aircraft departures per day.

Taking into account the runway length the airport management makes a decision on types of aircraft, which can be handled by the airport, taking into account also their full weight. The restrictions on the number of operations/movements per day may be imposed proceeding from the conditions and capacity of the of the runway.

Today, the issue of the runways run down is the main problem of Ukrainian regional airports and the main guidelines of state initiatives for airport development. In addition, the airports efforts to increase passenger and cargo traffic leads to the need to build new or rehabilitate the already existing runways to meet these needs.

According to industry experts there are three types of participants who are of particular importance for competition at airports:

- passengers who decide whether to travel, and if so, whether or not to fly or travel in another way. If they want to fly, they should also decide where and when to fly with what airline to fly and from which airport;
- airlines that decide or use the services of a particular airport;
- airports providing location and arrival locations, as well as a number of aeronautical and non – aeronautical services to airlines and passengers.

Airports decide what services to offer passengers/airlines and what price they have to pay for them.

According to the experts, as in any market, competition between airports can take several dimensions, including the price and quality of services. The service can be offered both passengers directly (in the form of lounge, retail offers, terminal atmosphere), and airlines (in the form of operating processes that increase the efficiency of the airline and reduce costs).

ACI also analyzes some specific features of airports that affect their market power and their ability to use this power. According to our opinion we have to specify two of them that are of the great importance for the airports' competitive strategy development.

In the previous edition of the Airport Economics Manual ICAO Doc 9562 it was stated that the commercialization and privatization have been bringing more competition and commercial pressure on airports. In the same document, ICAO offers the following classification of types of competition between airports:

- competition between long-haul hubs competing for origin-destination and transfer traffic;
- competition between multiple airports in large conurbations owned and / or operated by separate entities competing in the same market;
- competition between smaller non-proximate airports actively competing to attract point-to-point, short-haul services, particularly those offered by low-cost carriers (LCCs) [18].

At the same time, we consider the following classification of types of airport competition as one of the most comprehensive and complete:

- competition on the common resource of the local market – for example, Airports Charles de Gaulle and Orly in Paris; Airports John F. Kennedy, Newark and LaGuardia in New York; Heathrow, Stansted, Gatwick, London City and Luton in London;
- competition for transit transportation – passengers (and sometimes airlines) can choose alternative transfer if there are cheaper, faster and / or more convenient transfer flights;
- competition for freight transportation – cargo is very sensitive to price and can choose an alternative route or other type of transport. For example, at high charges for cargo transportation in Amsterdam, the cargo can be transported to Brussels and from there to be taken to the truck to the final point;
- competition for the destination point – recreational tourism can choose another purpose if the fare is too high (or quality of service is too low);
- competition on non - aeronautical services (retail trade, parking etc.)
- competition between different modes of transport - for example, with rail for some European routes.

Thus, one of the most common types of competition is competition between hub airports for transit flows, and given that in this segment, large capital airports are usually competing, this type of competition is one of the most intense.

**Conclusions.** The formation of a competitive airport strategy is an extremely important task in the post-crisis period caused by the COVID-19 pandemic and subsequent negative

trends in the world economy. At the same time, maintaining existing and gaining new competitive advantages by a particular airport involves close interaction with other key agents of the aviation market – airlines. Knowledge of specific factors that influence the formation of the

competitive strategy of the airport allows to fully ensure its development in the transport network of the state, which in turn will help to intensify social and economic interaction with other regions of the world through the movement of cargo (goods) and passengers.

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