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Comprehensive assessment of the airlines' competitiveness

Abstract. In the article, the methods and indicators are identified for the assessment of the airline's competitiveness in terms of resource and market trends. The use of the method of prospective assessment of the financial and resource state of the airline involves the elaboration of the indicators for financial stability, business activity and net income for the next three years, and when the growth indicators are obtained, they allow determining the improved competitiveness of the company. In order to assess the airline's ability to ensure a predictable improvement of financial and resource status indicators, it is proposed to apply a method of a set of competitive elements for a ranking assessment of the airline's competitiveness, taking into account the quality of aviation services. The competitiveness level was assessed for a number of Ukrainian domestic airlines: PJSC «Ukrainian Helicopters», Windrose Airlines, KHORS, TNT Airways, Aero-Charter and others. The proposed method allows us to predict the volumes of service delivery and determine the level of the airline competitiveness on the market.

Keywords: Airlines; Competitiveness; Assessment; Financial and Resource Status; Competitive Elements; Comprehensive Approach; Net Income; Quality of Air Transportation Services

JEL Classification: C13; L93; M21; M41

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Комплексне оцінювання рівня конкурентоспроможності авіакомпаній

Анотація. У матеріалі статті на основі комплексного підходу визначено методи та показники оцінювання рівня конкурентоспроможності авіакомпанії за ресурсним та ринковим напрямками. Обґрунтовано, що використання методу перспективного оцінювання фінансово-ресурсного стану авіакомпанії передбачає розрахунок показників фінансової стійкості, ділової активності та чистого доходу на найближчі три роки і при отриманні показників приросту дозволяє визначити зростання конкурентоспроможності. Для оцінювання здатності авіакомпанії забезпечити прогнози приросту значень показників фінансово-ресурсного стану запропоновано застосовувати метод набору конкурентоспроможних елементів для рангової оцінки конкурентоспроможності авіакомпанії з врахуванням якості надання авіапослуг. Оцінка рівня конкурентоспроможності проводилася для таких авіакомпаній: ПрАТ «Українські вертольоти», «Роза вітрів», «Хорс», «ТНТ», «Аеро-Чартер» та ін. За допомогою запропонованого методу можна спрогнозувати показники обсягів реалізації послуг і визначити рівень конкурентоспроможності авіакомпанії на авіаційному ринку.

Ключові слова: авіакомпанія; конкурентоспроможність, оцінювання; фінансово-ресурсний стан; конкурентоспроможні елементи; комплексний підхід; чистий дохід; якість авіаційних послуг.

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Комплексная оценка уровня конкурентоспособности авиакомпаний

Аннотация. В материале статьи на основе комплексного подхода определены методы и показатели оценки уровня конкурентоспособности авиакомпании за ресурсными и рыночными направлениями. Обосновано, что использование метода перспективной оценки финансово-ресурсного состояния авиакомпании предусматривает расчет показателей финансовой устойчивости, деловой активности и чистого дохода на ближайшие три года и при получении показателей прироста позволяет определить рост конкурентоспособности. Для оценки способности авиакомпании обеспечить прогнозные приросты значений показателей финансово-ресурсного состояния предложено применять метод набора конкурентоспособных элементов для ранговой оценки конкурентоспособности авиакомпании с учетом качества предоставления авиауслуг. Оценка уровня конкурентоспособности проводилась для следующих авиакомпаний: ЧАО «Украинские вертолеты», «Роза ветров», «Хорс», «ТНТ», «Аеро-Чартер» и др. С помощью предложенного способа можно спрогнозировать показатели объемов реализации услуг и определить уровень конкурентоспособности авиакомпании на авиационном рынке.

Ключевые слова: авиакомпания; конкурентоспособность; оценка; финансово-ресурсное состояние; конкурентоспособные элементы; комплексный подход; чистый доход; качество авиационных услуг.

1. Introduction

Enterprise's stronger competitiveness requires ensuring the growth of its sales in products or services. Yet, even rise in sales volumes may produce meaningful results only if it is accompanied by positive outcomes in enterprise's profits, cost of sales etc.

The choice of specific indicator (group of indicators) for the goods and services' competitiveness assessment is defined by the following criteria:

- indicator have to show the results of business process in production, promotion and sales of the product;
- it should reflect performance of the company across all business processes for certain product;

- it has to provide objective evaluation of the product competitiveness in the business environment, including expert assessment;
- it should take into account the balance of interests of producer and consumer;
- indicator is to facilitate factor analysis (the value of the indicator of the competitiveness should be statistically significant, variable, keeping with the changes of the internal and external environment).

For the airline, these criteria preclude primary assessment of the financial capabilities to ensure competitiveness, and comparative assessment of the competitiveness to other players on the market. While competition on the air

transportation market is growing substantially, the issues of competitiveness are turning vital for the airlines. Expansion by the foreign carriers on the Ukrainian market, much more potent and large, may undermine positions of domestic companies and even drive them out of business. Thus, adequate assessment of Ukrainian airlines' competitiveness is turning into an important element of their survival and further development strategy.

In the first half of the year 2017 the Ukrainian market of passenger air traffic continued to show steady growth (Figure 1). During this period, the total of 18 domestic airlines provided services of passenger transport, but almost 95 percent of the gross passenger traffic was carried by five leading companies (Ministry of Infrastructure of Ukraine, 2017):

- «Ukraine International Airlines»,
- «Windrose airlines»,
- «Azur Air Ukraine»,
- «Atlasjet Ukraine»,
- «Bravo Airways».

«Bravo Airways» airlines increased passenger traffic 4.5 times compared to the first half of 2016, «Windrose airlines» - 4.3 times, «Atlasjet Ukraine» - 2 times, «Azur Air Ukraine» by 47 percent, and «Ukraine International Airlines» by 24.1 percent. The growth of passenger traffic in the first half of 2017 mostly relied upon expansion of the international flights. Ten domestic companies had regular international flights from Ukraine to 42 foreign countries, and 25 foreign companies were flying from Ukraine to 24 countries of the world. Domestic airlines carried around 2,622 thousand passengers, while the foreign companies - 2,111 thousand passengers (the growth of 27,6 percent and 22,5 percent respectively). During this period, domestic companies added 7 international flights to their schedule, and the foreign companies - another 2.

We see significant increase (by 77 percent) in number of the passengers carried by Ukrainian companies in irregular international flights: within revised time lapse 13 Ukrainian companies carried 1,514.8 thousand passengers. Major share (90 percent) is held by 4 airlines: «Windrose airlines», «Azur Air Ukraine», «Ukraine International Airlines» and «Bravo Airways».

Five domestic airlines accounted for 423.3 thousand air travellers on regular domestic flights between 9 cities of Ukraine (22.6% growth compared to the first half of 2016).

Average seat occupancy rate for Ukrainian companies was 74.3% for international flights, and 70.7% - for the domestic ones (compared to 76.6% and 72.6% in first half of 2016 respectively).

2. Brief Literature Review

Comprehensive assessment of the airline's competitiveness was studied by many scholars in Ukraine, and abroad, namely: Averichev (2010), Arefyeva (2011), Arefyev (2012), Astapova (2013), Lozhachevska (2008), Sych & Kyslyi (2009), Mezentseva (2011, 2013a, 2013b), Chmil (2016), Ansoff & McDonnell (1999), Fatkhutdinov (2002), and Yudanov (2001). Approaches to the evaluation and development of assessment of the airlines were developed by R. Doganis, V. M. Zagorulko, O. V. Grechko and others.

Numerous publications on the subject confirm the validity of our research. At the same time, a number of theoretical and applied research questions on the approaches and methods of assessment of the airlines' competitiveness remain unresolved. There is some space for further improvement of the ways to assess the Ukrainian airline's competitiveness on the national market of air transport: assessment according to the airlines ranking estimates, with the indicators of their

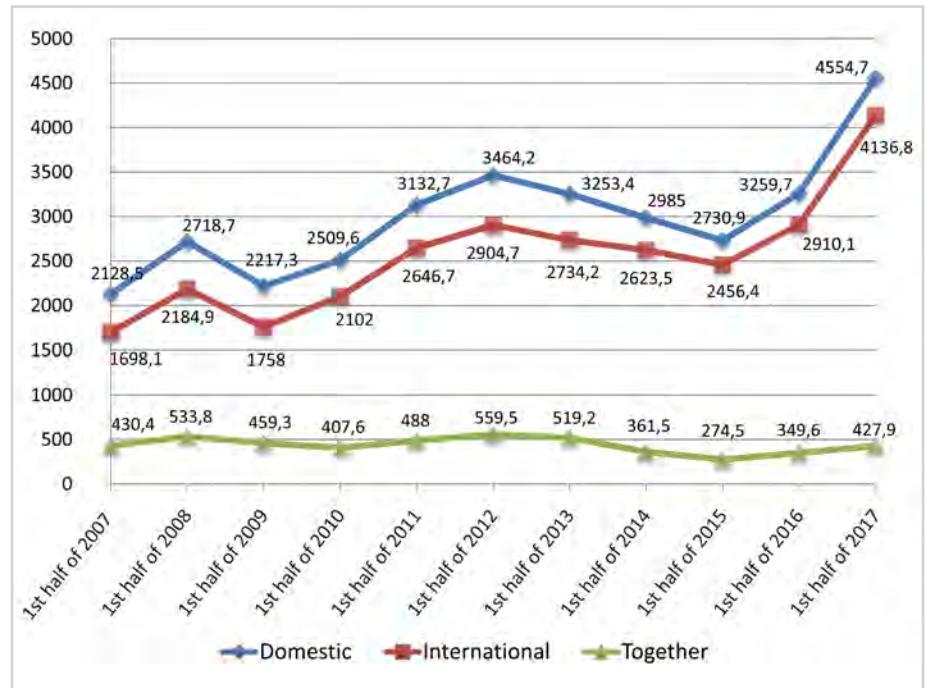


Fig. 1: Volumes of the Ukrainian passenger air traffic in the 1st half of 2007 - the 1st half of 2017, in thousand passengers

Source: Built by the author based on data by the Ministry of Infrastructure of Ukraine (2017)

financial viability, business activity or net income should provide us with proper insight into prospective dynamics of competitiveness.

3. The aim of the article is to define methods and criteria for assessment of competitiveness of the airline, based on combination of resource assessment and ranking estimates.

4. Results

There is a variety of methods to assess competitiveness of the goods or services. The choice of specific method for the assessment depend on the nature of goods (consumer product, service or products for industrial use), available information, urgency of assessment, target audience, resources available (including financial resources) etc.

The final purpose of the airline's competitiveness are, as always, higher profits and overall increase in profitability, expansion to the new markets and company's sustainability. The improvement of the financial situation of the airline could be attained due to better quality of the services provided, resource efficient methods, logistical development, and social development programs. Every step to improve any of those areas of business activities has direct impact on the increase of profits, thus contributing to the overall growth of the airline's competitiveness.

The major factor behind the building of financial capacities is airline's financial situation. To assess the financial situation we need to define estimates, to chose proper methods of their evaluation and to characterize these estimates according to the assessment framework. The main goal of the financial situation assessment is to define the sources of sustainable development and improvement as they are instrumental for the future of the airline. Let us analyse main estimates according to the following indicators:

- property status of the airline and its profitability;
- liquidity, capacity to pay and credibility;
- financial sustainability and health;
- cost-effectiveness;
- business activity.

Forecasting of the financial viability of the airline was based on data of forecast balance for PJSC «Ukrainian Helicopters» (see Table 1). We used reports and working papers of research studies «Financial planning and institutional support of quality management in aviation companies under globalization» (state registration 0113U000584, 2012-2015), and «Financial support for the integration development and quality

Tab. 1: Prospective values of the indicators of financial viability for PJSC «Ukrainian Helicopters»

	2016	2017	2018	2019
Autonomy ratio	0.267	0.279	0.287	0.293
Financial viability ratio	0.342	0.352	0.359	0.364
Accounts receivable-to -payable ratio	0.348	0.358	0.370	0.358

Source: Elaborated by the author

at the aviation companies under globalization» (2015-2018) by the chair of finances, audit and accounting of National aviation university.

According to the forecasting, indicators are growing. Yet their values do not meet optimal references, thus additional optimization of the capital is required.

According to our analysis and forecast, competitiveness of the enterprise could be augmented with the following measures:

- increase in the portion of own means in the capital structure of the enterprise;
- increase the volume of sales to the zero net revenue at the initial stages, with further growth of the revenues (see Table 2);
- reduce debt ratios;
- consolidate the highly marketable assets which could be used to meet short-term liabilities;
- after zero net revenue will be reached, to insure higher profitability with set investment return ratio;
- define the life-cycle for each service, provided by the enterprise, to develop forward-looking pricing and product line policies, which is instrumental for achieving competitiveness and influence performance by the enterprise.

Tab. 2: Forecasting of net income and business activity for PJSC «Ukrainian Helicopters»

Indicators	2016	2017	2018	2019
Assets turnover ratio	5.901	5.920	6.448	6.674
Average value of current assets	149,215	154,562	151,974	149,829
Net income	880,500	915,000	980,000	1,000,000

Source: Elaborated by the author

Forecasting of net income of the enterprise (see Table3), which is value of the sales volume, was based on the financial forecast of the airline. Expected assets turnover with overall decline of their volume was set as the growth factor of net income.

Thus, according to the forecasting assessment of the financial situation of business activity we established that while the airline is improving its financial viability that brings it growth in net income due to the better practices in marketing and sales promotion of air transport services.

To evaluate whether the airline is capable to insure forecast growth in net income, we assessed its performance with the set of competitive elements. This method is used to define competitiveness of the enterprise and is based on the assumption that competitiveness of its products is the main element of the overall competitiveness (in our case we are assessing competitiveness of the air transport services). We are ranking main indicators of the competitiveness to study competitiveness of the enterprise. In our research we used the following indicators: convenience of service, cost of service, quality of service, service advertising, and service safety.

Tab. 3: Matrix of determining competitiveness of air transport services per unit of product

№	Weight of indicator	$Vaga_j$...	$Vaga_m$	$Rang_j$	$KSop_{ia}$
	Indicator	IND_j		IND_m		
	Enterprise	Absolute value	R_{ij}	Absolute value	R_{im}	
1	Assessment object					
2						
...						
n						

Source: Elaborated by the author

The sequence of investigation should be as following:

1. The list of indicators is built (IND_j , where $j = 1 \dots m$), to assess the competitiveness of the specific product (service) under investigation.
2. With the expert evaluation we established weight for each indicator in the overall assessment ($Vaga_j$, where $j = 1 \dots m$), provided that $\sum Vaga_j = 1$. (In our research we approached representatives of airlines and other aviation companies as experts who ranked our indicators of convenience of service, cost of service, quality of service, service advertising, and service safety, and compared these indicators to the reference values)
3. Marketing departments of the airlines, whose performance we investigated, determined their competitors with similar products on the market.
4. According to the data obtained, we built the matrix of determining competitiveness of air transport services per unit of product (see Table 3).
5. According to the absolute values of the indicator the ranks of the units of services were defined (R_{ij}).
6. We calculated the general rank of the product unit by every airline under investigation against the weight of the indicator according to the formula:

$$Rang_i = \sum R_{ij} * Vaga_i \tag{1}$$

7. When the general ranks of the units were established, we defined company-leader (L) and company-outsider (A) for each unit of the product, and determined the gap between the leader and the outsider (Dv) according to the formula:

$$Dv = Rang_L - Rang_A \tag{2}$$

The gap between the leader and the outsider provided the picture of companies' allocation on the market, within competitive environment. Radius of the leaders' (outsiders') circle equals one fourth of the distance between the leader and the outsider (Dv).

8. Competitiveness of the air transport services per unit is defined according to the formula:

$$KSop_{ia} = (Rang_L - Rang_A) / Dv \tag{3}$$

9. The level of competitiveness of the enterprise is defined as an average rank of competitiveness along the full spectrum of the products.

We calculated the competitiveness according to the method specified above for the group of Ukrainian airlines using their data (see Tables 4-7). As a foundation for our assessment we took the following set of indicators (IND_j):

- 1) convenience of service;
- 2) cost of service;
- 3) quality of service;
- 4) service advertising;
- 5) service safety.

According to our estimates, we defined ranks of the airlines, which are providing air transport services in the sectors of passenger traffic (see Table 4), cargo traffic (see Table 5) and air ambulance services (see Table 6). General ranks show that PJSC «Ukrainian Helicopters» is the overall leader comparing to the rest of companies (according to the research study 0113U000584).

The competitiveness of the services that PJSC «Ukrainian Helicopters» is providing has the best values. The assessment of the competitiveness of the enterprise (see Table 7) confirms that this company keeps its leading position provided implementation of our quality evaluation proposals. As we see in the Table 7, PJSC «Ukrainian Helicopters» aggregated rate of competitiveness at 19.96, KHORS airlines is second with 16.61, and TNT Airways is last with only 7.38. Thus, in case of implementation of the quality improvement measures, PJSC «Ukrainian Helicopters» will have the highest increase in net income in next three years.

Based on the study, we propose a number of measures to improve competitiveness of the airlines:

Tab. 4: Matrix of determining competitiveness of air transport services per unit - passenger traffic

Weight of indicator Indicator	Vaga ₁		Vaga ₂		Vaga ₃		Vaga ₄		Vaga ₅		Rang _i	Dv	KSop _{ia}
	IND ₁		IND ₂		IND ₃		IND ₄		IND ₅				
Airline	value	R _{1i}	value	R _{2i}	value	R _{3i}	value	R _{4i}	value	R _{5i}			
PJSC «Ukrainian Helicopters»	50	0.15	33	0.22	18	0.25	4	0.11	2	0.09	19.88		1
«Aero-Charter»	48	0.21	22	0.1	18	0.14	5	0.1	3	0.09	15.57		0.64
SAC «Ukraine»	45	0.09	31	0.13	17	0.07	3	0.14	1	0.1	9.79		0.16
«TNT Airways»	47	0.03	32	0.12	16	0.11	5	0.15	1	0.12	7.88		0
«Windrose airlines»	48	0.12	21	0.11	19	0.16	4	0.05	3	0.13	11.7		0.32
«KHORS»	48	0.18	20	0.19	21	0.11	3	0.1	2	0.1	15.25		0.61
«CONSTANTA»	47	0.14	32	0.08	20	0.1	3	0.14	3	0.15	12.01		0.34
«URGA»	51	0.08	33	0.05	15	0.06	5	0.21	1	0.22	7.9		0
Total	48	1	28	1	18	1	4	1	2	1		11.98	

Source: Elaborated by the author

Tab. 5: Matrix of determining competitiveness of air transport services per unit - cargo traffic

Weight of indicator Indicator	Vaga ₁		Vaga ₂		Vaga ₃		Vaga ₄		Vaga ₅		Rang _i	Dv	KSop _{ia}
	IND ₁		IND ₂		IND ₃		IND ₄		IND ₅				
Airline	value	R _{1i}	value	R _{2i}	value	R _{3i}	value	R _{4i}	value	R _{5i}			
PJSC «Ukrainian Helicopters»	52	0.15	32	0.22	18	0.25	4	0.11	2	0.09	19.96		1
«Aero-Charter»	46	0.21	23	0.1	16	0.14	3	0.1	1	0.09	14.59		0.57
SAC «Ukraine»	47	0.09	32	0.13	17	0.07	3	0.14	1	0.1	10.1		0.20
«TNT Airways»	45	0.03	31	0.12	18	0.11	5	0.15	3	0.12	8.16		0
«Windrose airlines»	49	0.12	20	0.11	20	0.16	5	0.05	2	0.13	11.79		0.34
«KHORS»	47	0.18	32	0.19	19	0.11	3	0.1	3	0.1	17.23		0.78
«CONSTANTA»	51	0.14	33	0.08	15	0.1	5	0.14	1	0.15	12.13		0.37
«URGA»	47	0.08	21	0.05	21	0.06	4	0.21	3	0.22	7.57		0
Total	48	1	28	1	18	1	4	1	2	1		12.39	

Source: Elaborated by the author

Tab. 6: Matrix of determining competitiveness of air transport services per unit - air ambulance

Weight of indicator Indicator	Vaga ₁		Vaga ₂		Vaga ₃		Vaga ₄		Vaga ₅		Rang _i	Dv	KSop _{ia}
	IND ₁		IND ₂		IND ₃		IND ₄		IND ₅				
Airline	value	R _{1i}	value	R _{2i}	value	R _{3i}	value	R _{4i}	value	R _{5i}			
PJSC «Ukrainian Helicopters»	51	0.15	33	0.22	18	0.25	4	0.11	2	0.09	20.03		1
«Aero-Charter»	48	0.21	31	0.1	18	0.14	5	0.1	1	0.09	16.29		0.73
SAC «Ukraine»	47	0.09	32	0.13	17	0.07	5	0.14	3	0.1	10.58		0.32
«TNT Airways»	45	0.03	21	0.12	15	0.11	3	0.15	1	0.12	6.09		0
«Windrose airlines»	48	0.12	32	0.11	20	0.16	4	0.05	2	0.13	12.94		0.49
«KHORS»	47	0.18	32	0.19	21	0.11	3	0.1	2	0.1	17.35		0.81
«CONSTANTA»	48	0.14	20	0.08	15	0.1	3	0.14	3	0.15	10.69		0.33
«URGA»	50	0.08	33	0.05	20	0.06	5	0.21	2	0.22	8.34		0.16
Total	48	1	29.25	1	18	1	4	1	2	1		13.94	

Source: Elaborated by the author

Tab. 7: Assessment of the competitiveness of the airlines

Airlines	Level of competitiveness
PJSC «Ukrainian Helicopters»	19.96
«Aero-Charter»	15.48
SAC «Ukraine»	10.16
«TNT Airways»	7.38
«Windrose airlines»	12.14
«KHORS»	16.61
«CONSTANTA»	11.61
«URGA»	7.94

Source: Elaborated by the author

- 1) Airlines management should be based upon principles of modern marketing to consider market conditions and trends in demand for air transport;
- 2) It is important to ensure steady modernization of current air fleet, maintain replacement planes not just for specific international air route, but for every single flight, practice creative approach to use of the whole air fleet of the company;
- 3) Every employee of the airline must deliver his or her best to ensure high standards of the flight safety and strict compliance with the flights schedule;
- 4) Company should provide systematic approach to the professional development of the staff, provide permanent and targeted training for the employees;
- 5) The quality of the services, provided by the airline, should be at best at each part of production process in air trans-

port - from purchase of ticket to the baggage claim at destination airport. Special attention should be paid to the handling of passengers' claims in case of flight delays or baggage losses;

- 6) Airlines should be persistent to expand its share on the market;
- 7) Airline have to ensure permanent control over operational costs, implement operational management to attain profitability of every single flight in the course of booking, use extensively computers at every stage of company's management (especially for planning and control).

5. Conclusions

Comprehensive assessment of the airlines' competitiveness requires comparison of individual data for different airlines operating on the same market, necessary to establish composite factor of the competitiveness of the airline. To evaluate future competitiveness (for three years period) of specific airline we used prospective analysis of financial resources element in the competition on the air services market. We found out that in case of implementation of the measures to improve the quality of services, in next three years the airline attains the growth of both net income and profit. It is important to spend part of the profit to further cement competitive positions of the company: to study consumer demands and competitors development, to support advertising policy, to expand to the international markets with new products, to improve the quality of services, to modernise equipment, to reduce operational costs, and to improve quality control and management in company.

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