

## ORIGINAL PAPER



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# Stochastic Analysis of Dynamics the Strategic Compliance of Company Aeroflot

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## ABSTRACT

The use of traditional SWOT-analysis in a dynamic and uncertain external environment does not allow to reasonably form the company's strategy based on assessments of the state of strengths, weaknesses, opportunities and threats. The reason is that the static assessments of the current state of internal and external factors, obtained from experts, are used to develop a long-term strategy, the implementation of which requires the implementation of organizational changes. The article proposes a new approach to strategic analysis, which consists in evaluating the dynamics of the strategic compliance of factors, taking into account the dispersion of expert opinions (SSMD-analysis). The basis of the algorithm for calculating the final evaluations is the method for determining the optimal intensity of strategic changes. Using the SSMD-analysis methodology based on public data for 2015–2020, an examination of the strategic compliance of factors of the external and internal environment of Aeroflot as of 2020 was conducted. It is concluded that the most relevant direction of the company's development in 2020 was the accelerated replacement of leased aircraft with its own aircraft. The proposed method makes it possible to assess the dynamic portrait of the company's interaction with its external environment in conditions of information uncertainty.

**Keywords:** SWOT-analysis; Aeroflot; SSMD-analysis; dynamics; stochastic; strategic matching; strategy

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## INTRODUCTION

Strategic planning and SWOT-analysis have common roots in Harvard Business School research since the 1960s. Today, companies actively use classic SWOT-analysis as a strategic planning tool, but it often boils down to a simple listing of strengths and weaknesses, opportunities and threats [1]. At the same time, many organizations cannot correctly prioritize, because they compile too long lists of SWOT factors, giving insufficient content and relevant descriptions. Therefore, they have not been able to fully apply the analysis to the next stages of strategic management [2]. In addition, a number of companies are unclear about their strengths, weaknesses, opportunities and threats [3].

Despite these weaknesses and limitations, the methodology has been widely adopted because of its simplicity: it continues to penetrate the scientific literature and remains a tool for strategic analysis [4]. However, further research leading to new methods of SWOT analysis is well justified [5].

## SCIENTIFIC DEVELOPMENT OF THESE ISSUES

To overcome the shortcomings of the classic SWOT-analysis to date, a variety of approaches and models are proposed. Hybrid method integrated with hierarchy analysis allows analytically determine priorities for SWOT-factors, making them commensurable. The method encourages the decision maker to reflect on the significance of the factors and to analyse the situation more clearly [6]. The method of “double perspective” SWOT-analysis can be used to integrate marketing and analytical views and eliminate logical inconsistencies encountered by specialists [7]. In the planning and strategy development phases, the method of identifying opportunities and threats developed within the framework of the cognitive approach to social and economic systems analysis shows acceptable results [8]. A quantitative model of

analysis based on unclear mathematics enables the results of SWOT-analysis to be transformed into a strategic plan using heuristic rule of selection of the most influential factors [9].

Voting and multi-criteria decision support methods can be used to identify and systematically assess SWOT-factors' priorities [1]. Consistency between internal and external factors, as well as the decision-maker's goals, can be achieved through integrated SWOT analysis based on a model of multi-criteria decision analysis (MCDA) [10]. An integrated approach is also used to define the quantitative and qualitative elements of the strategic analysis by weighing and ranking them with comparison matrices [11]. The disadvantage of SWOT-analysis is that opportunities and threats are seen as factors, having the same impact on all economic agents, can be overcome by applying their correlation interpretation, which involves considering the strategic ability of a company to exploit its strengths and weaknesses [12]. Imperfection of SWOT-analysis, due to its subjective and non-qualitative nature, allows to partially eliminate the alternative instrument — Meta-SWOT, based on a resource-oriented view of the company, whose main idea is — the need to achieve strategic alignment in the strategic process [13].

As the analysis of the literature shows, the main drawback of classical SWOT-analysis is the difficulty of identifying and correctly comparing external (opportunities and threats) and internal (strengths and weaknesses) factors given their uncertainty and dynamics. As early as 1982, H. Weirich proposed to use the TOWS-matrix to compare opportunities and threats with strengths and weaknesses — strategy development tool through pairwise comparison. In his opinion, the most rational strategy is that which ensures the best harmony between the capabilities of the environment and the company's strengths. A priori, it is assumed that internal and external factors

can be identified objectively and for a reason [14]. These circumstances play a key role in the modern concept of SWOT-analysis. From the 1960s to the late 1980s, the external environment (market, industry, political, etc. factors) was consistent with these assumptions, but nowadays it is volatile and uncertain.

The study [15] presents the results of an extensive literature review on SWOT-analysis: the authors think that it will receive increasing attention in the future, given that its main shortcomings have been overcome.

What are the main causes of SWOT-analysis errors in modern conditions? Its application implies that experts or decision makers are prepared to give some estimates of the values of each of the internal and external factors. Moreover, experts are forced to think statically, assessing the current state of the company and its external environment. And on the basis of these assessments, it is necessary to develop a company strategy for several years. However, the current external environment, as well as the internal factors of the organizations, are very dynamic and uncertain, so it is not surprising that such strategies are not being implemented in the current economic environment.

## METHODOLOGY

### Basic terms and definitions

Based on the results of the literature on this topic, there is reason to believe that the traditional SWOT-analysis should be replaced by a stochastic analysis of strategic matching dynamics (Stochastic Analysis of Strategic Matching Dynamics — SSMD-analysis).

The term “strategic matching” means here that some internal strategic factor of the company  $X_i$  best match to some of its external environment  $Y_j$  to achieve a strong strategic position and maximize economic impact  $C_{ij}$  for company:

$$C_{ij} = F(X_i, Y_j). \quad (1)$$

For example, the combination of the digital transformation of the economy (externality) and the company’s high digital maturity (internal factor) points to a strategic correspondence that is, however, not static but dynamic. Studying modern companies, can observe as positive dynamics — increasing strategic matching ( $+dC_i / dt$ ), as well as negative — growing mismatch ( $-dC_i / dt$ ) factors. Moreover, such match(mismatch) may have high or low growth rates.

High evidence that the company has a strong strategic position and significant potential when using these factors — for example, if the growth rate of its digital maturity matches or exceeds the growth rate of the digital transformation of the industry. The low growth rate of strategic compliance indicates that the company has an acceptable position and potential for strategic development when using these factors: for example, the rate of growth of its digital maturity is lower than the rate of growth of the digital transformation in the industry.

The low growth rate of the strategic mismatch indicates that the company has a weak strategic position and low development potential when using these factors. For example, the company’s digital maturity has reached a certain level and is not increasing further, while the growth rate of digital transformation in the industry is very high. High growth rate of strategic mismatch indicates that the company has a critically weak strategic position and no development potential when using these factors. For example, the company loses its digital competencies, dismisses IT-professionals and sells equipment, while the growth rate of digital transformation in the industry is very high (see *figure*).

According to this approach, using the terminology of SWOT-analysis, the same internal factor can be defined as “strong” and as “weak” side of the company. Therefore, there is no need to pre-divide internal factors into strengths and weaknesses, but it is still

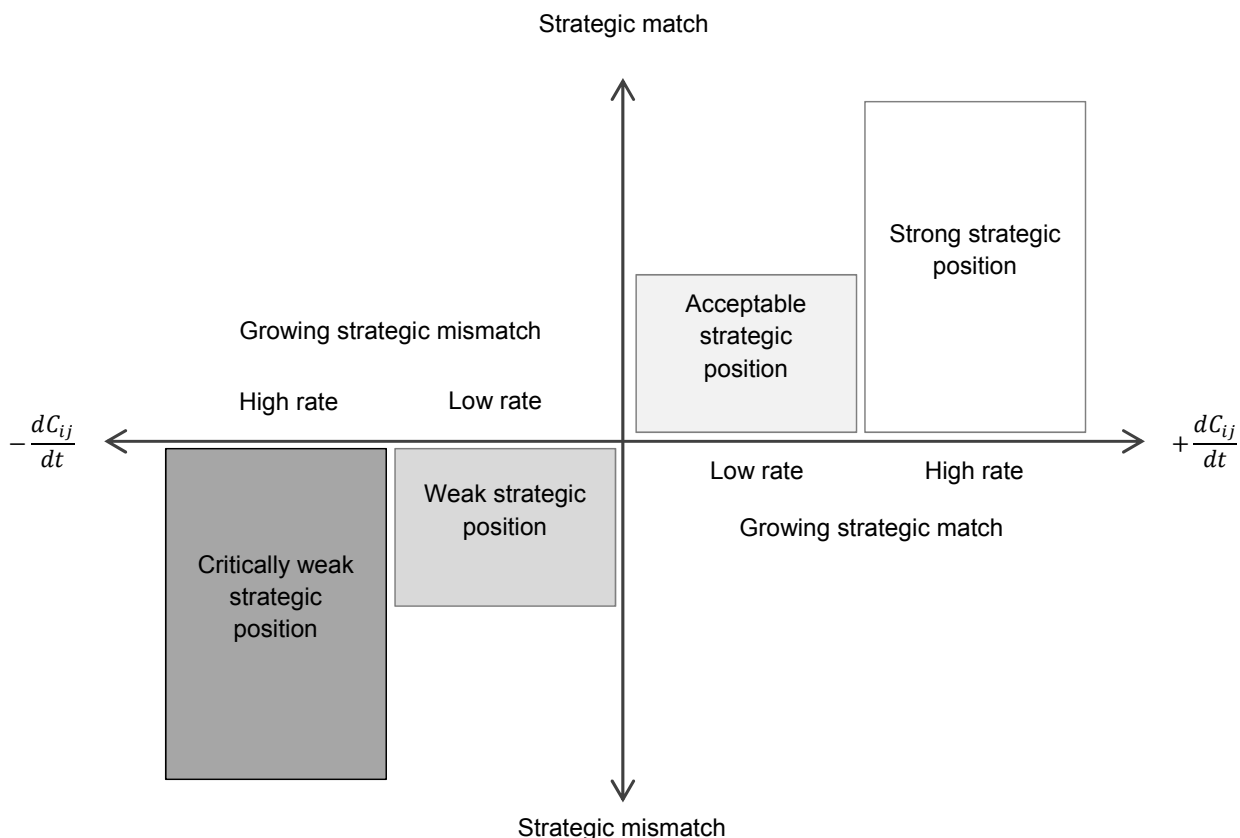


Fig. Graphical interpretation of strategic positions depending on dynamics of strategic consistency or inconsistency

Source: developed by the author.

important to pre-classify external factors into opportunities and threats.

The term “stochastic” in the name of the method indicates that experts generally cannot accurately determine the state of internal and external strategic factors. It is even more difficult to identify their strategic match, so estimates can only be probabilistic. Thus, it is relevant for experts to determine the direction and speed of strategic compliance, while it is important for analysts to take into account the variance of expert assessments as a measure of the stochasticity of conclusions.

### SSMD-ANALYSIS ALGORITHM

The ultimate goal of the strategic analysis is to develop a company strategy, the further implementation of which requires

organizational changes. Based on these theses, the algorithm SSMD-analysis is based on the method of management of organizational changes. The optimum intensity of their implementation is determined by the equation [16]:

$$A = \sqrt{2E / \sigma}, \quad (2)$$

where:

$$E = \frac{1}{n} \sum_{i=1}^n e_i, \quad (3)$$

$E$  — Average expert assessment of the rate of growth of strategic match or несоответствие between internal and external factors: this variable is a model of the dynamics of strategic

Table 1

## An expert assessment scale

-2	-1	0	1	2
High level of inconsistency	Low level of inconsistency	Consistency	Low matching	High matching

Source: developed by the author.

match;  $n$  — number of experts;  $e_i$  — individual expert assessment;

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (r_i - E)^2}{n-1}}, \quad (4)$$

$\sigma$  — standard deviation of expert estimates: this variable reflects the stochastic nature of the model.

Implementation of organizational changes with optimum intensity (2) provides as a result a minimum of both mathematical expectation and variance of deviations of the company's performance indicators from the target values [17].

Experts can make their individual assessments using the scale (table 1).

Supposing, that  $I_1$  — is an internal factor of “production technology”, and  $O_1$  — opportunity for a “growing market”. Let the first expert assess match  $e_1(I_1; O_1) = 2$ , which means “the economic efficiency of the new production technology is rapidly increasing under the conditions of high demand for the produced products in the growing market”. In other words, there is a high rate of match growth. But at the same time, another expert may give a different assessment  $e_2(I_1; O_1) = -1$ , i.e. “the economic efficiency of the new production technology is slowly decreasing in the context of high demand for the products, as it cannot provide the required rate of diversification of the range”. In this case, the average estimate of the experts will be calculated as  $E = [2 + (-1)]/2 = 0.5$ , and standard deviation of expert estimates would be equal to  $\sigma = 2.12$ . According to formula (2),

the growth rate of the match between  $I_1$  and  $O_1$  would be equal to  $A = 0.69$ .

Variable  $A$  — is the relevance of the strategy. By calculating its value for all pairs of factors, the decision maker will be able to choose strategic alternatives according to their relevance.

To accommodate the specificity of the expert group and to avoid zero denominator in formula (2) a variable is used  $e_{im}$  as “virtual ( $n + 1$ ) expert”, where  $n$  — number of real experts. In case of  $\sigma = 0$  “virtual expert” generates evaluation

$$e_{im} = e_1 - g, \quad (5)$$

where  $e_1$  — evaluation of the 1<sup>st</sup> expert;  $g$  — empirical index of expert group qualification:

$g = 0.3$ , if all experts have high competence in the company, industry and market issues (the expert group is a “precise tool”);

$g = 0.6$ , if some experts have a high competence in the company, industry and market, or all experts have a satisfactory competence in these issues (the expert group is a “inaccurate tool”).

Thus if  $\sigma = 0$ , then the standard deviation applies  $\sigma_{n+1}$  estimate  $n + 1$  of expert, including the “Virtual Expert” which made the assessment  $e_{im}$ .

A coefficient  $\lambda$  is used to normalize the comparative value  $A$ :

$$\lambda = \sqrt{2e_{\max} / \sigma_{\min}}, \quad (6)$$

where  $e_{\max}$  — maximum value in the rating scale (in the case of the table 1,  $e_{\max} = 2$ );  $\sigma_{\min}$  — standard deviation  $n + 1$  of expert evaluation,

Table 2

Scales of average values of internal and external factors and potential strategic positions

Scale (%)	–100...–50	–49...–1	0...49	50...100
Internal factors ( <i>I</i> )	Critical weakness	Weakness	Forces	Significant forces
Opportunities ( <i>O</i> )	Lack of opportunities	Hard-to-implement	Implemented	Confidently implemented
Threat ( <i>T</i> )	Insurmountable	Hardships	Surmountable	Insignificant
Rate of growth of strategic compliance (inconsistencies)	High growth rate of strategic inconsistencies	Low growth rate of strategic inconsistencies	Low growth rate of strategic conformity	High growth rate of strategic conformity
Strategic position	Critically weak	Weak	Acceptable	Powerful

Source: developed by the author.

provided that all of the  $n$  real experts have chosen the maximum absolute value of the rating scale, and the “virtual expert” has formed an  $e_{im}$  rating in accordance with (5).

At first sight, it is quite difficult to calculate the coefficient  $\lambda$  before each analysis cycle, but this operation can only be performed once. Suppose that the expert group consists of four experts. The coefficient will be calculated as  $\lambda = 5.46$ , if the expert group is an “precise tool”, and  $\lambda = 3.86$  – if “inaccurate”, and one of these values can be used throughout the analysis period with a standing group of experts.

Thus, normalized rate of match growth ( $A_N$ ) will be calculated in %:

$$A_N = \frac{1}{\lambda} \sqrt{2E/\sigma} \times 100 \%. \quad (7)$$

The proposed method takes into account the dynamics and uncertainty of the combination of internal and external factors. Variable  $A_N$  takes maximum value when experts agree on the rate of matching growth. This value shows that this match can be the basis for a real company strategy. In the *table 2* presents scales of average values of intensity of internal factors, opportunities and threats, as well as rate of growth of strategic correspondence, which can be used to interpret the results.

Thus, the categories of internal and external factors are not assigned in advance, but formed through analysis. It should be borne in mind, however, that the average intensity of a factor is not exhaustive.

### SSMD-ANALYSIS OF AEROFLOT COMPANY

This section describes the procedure and the main results of SSMD-analysis of the strategic position of PJSC “Aeroflot” (further – Aeroflot). This case deliberately did not address aspects related to the COVID-19 pandemic and current (at the time of writing) factors that contributed to the decline in global political stability. The conclusions of the analysis were formulated on the basis of the study of the economic condition and dynamics of the company, described in the annual reports, financial statements and other open sources for the period 2015–2020.

Aeroflot is a national carrier and the largest airline in Russia and is among the top 20 world air holding companies. Founded in 1923, it is one of the oldest airlines in the world. Thanks to the extensive SkyTeam alliance network (Aeroflot became a full member of this second largest aviation alliance in the world in April 2006), the company serves 1 036 destinations in 170 countries worldwide. Aeroflot is recognized as the strongest brand of Russia, and



Table 3

## Argumentation option for strategic compliance assessments “Internal factors / Opportunities” for Aeroflot

	<b><math>O_1</math> – Russia – one of the world's largest aviation markets, which continues to grow and develop</b>	<b><math>O_2</math> – optimization processes continued in the global aviation industry: many carriers went out of business</b>	<b><math>O_3</math> – global passenger turnover is increasing, although slower rate</b>	<b><math>O_4</math> – digitalizing the interface between passengers and airlines promotes social mobility</b>
$I_1$ – Aeroflot market share	↑ Higher: Aeroflot is the market leader in Russia (41.3%), and its market share is growing faster than the Russian air transport market as a whole	↑ Lower: Aeroflot's share of the world market grows slowly	↑ Lower: Aeroflot's share of the world market grows slowly	↑ Lower: Aeroflot's share of the world market grows slowly
$I_2$ – Aeroflot market segments	↑ Higher: Aeroflot is actively developing key market segments: from premium to low-budget air transportation	↑ Higher: Aeroflot is actively developing key market segments: from premium to low-budget air transportation	↑ Higher: Aeroflot is actively developing key market segments: from premium to low-budget air transportation	Consistency: Aeroflot is developing key market segments: from premium to low-budget air transportation
$I_3$ – Aeroflot staff skills and match with international environmental standards	↑ Lower: Aeroflot staff skills grow more slowly than required by the growing market	Consistency: Professional skills of employees correspond to requirements of international standards and Federal Aviation Regulations	↑ Higher: Employees' professional skills are upgraded in accordance with the latest international standards and Federal Aviation Regulations	↑ Higher: Employees' professional skills are upgraded in accordance with the latest international standards and Federal Aviation Regulations
$I_4$ – Aeroflot fleet	↑ Lower: Aeroflot has one of the most modern air fleets in Europe, but the share of leased aircraft in the total fleet of the company is not decreasing	↑ Lower: Aeroflot has one of the most modern air fleets in Europe, but the share of leased aircraft in the total fleet of the company is not decreasing	↑ Higher: Aeroflot has one of the most modern air fleets in Europe	Consistency: Aeroflot possesses of the most modern air fleets in Europe
$I_5$ – availability of budget segments of Aeroflot Group	↑ Higher: low-cost airlines Aeroflot take advantage of untapped market potential	↑ Higher: low-cost airlines Aeroflot take advantage of untapped market potential	↑ Higher: low-cost airlines Aeroflot take advantage of untapped market potential	↑ Lower: low-cost airlines Aeroflot take advantage of untapped market potential
$I_6$ – Aeroflot digital transformation	↑ Higher: Aeroflot continues digital transformation in accordance with the adopted IT-strategy	↓ Lower: Aeroflot's digital transformation is slower than international competitors'	Consistency: Aeroflot continues digital transformation in accordance with the adopted IT-strategy	↓ Lower: Aeroflot's digital transformation is slower than international competitors'
$I_7$ – complexity of organizational structure and management	↓ Lower: organizational structure and management optimization is slow	↓ Lower: organizational structure and management optimization is slow	Consistency: organizational structure and management is carried out	↓ Higher: organizational structure and management optimization is slow

Source: developed by the author.

Note: the up arrow indicates a strategic matching increasing, the down arrow indicates its decreasing.

Table 4

Matrix of normalized estimates of the rate of change in strategic matching IO

	$O_1, \%$	$O_2, \%$	$O_3, \%$	$O_4, \%$	Average value $I, \%$
$I_1$	48	0	0	13	15
$I_2$	100	48	48	-18	45
$I_3$	71	0	48	42	40
$I_4$	0	-24	-16	-32	-18
$I_5$	48	48	48	71	54
$I_6$	30	-32	-18	-41	-15
$I_7$	-11	-13	23	-32	-8
Average value $O$	41	4	19	0	

Source: developed by the author.

according to the world's leading independent consulting company on evaluation and strategy of development of the brand business Brand Finance — the strongest brand of the airline in the world. In 1994 the company was registered as a public joint-stock company (since 2015 it is a public joint-stock company). The Russian Federation owns 57.3% of its shares, 40.7% are in free circulation with institutional and retail investors. Aeroflot shares are traded on the Moscow Stock Exchange and on the international market.

The company's fleet, which is one of the youngest in the world, consists of 230 aircraft, which are modern liners of the family Airbus A320, A330, A350, Boeing 737, Boeing 777 foreign production and domestic Superjet 100 new generation. As part of the business strategy until 2028, Aeroflot set itself the goal of transporting 130 million passengers per year through the development of a multi-brand structure and to reduce the average tariffs for economic class passengers in Russia by 30%. Its strategic goal is to strengthen leadership in the world aviation industry by taking advantage of opportunities in the Russian and international air transport markets.<sup>1</sup>

<sup>1</sup> Official website of the company "Aeroflot". URL: <https://www.aeroflot.ru/ru-ru/about> (accessed on 22–25.11.2021 and 6–10.12.2021).

To conduct SSMD-analysis of the strategic position of the company, four experts were invited, possessing information and personal opinion on the dynamics of internal and external factors of the aviation enterprise. The expertise was conducted on the basis of open sources of information on 22–25 November and 6–10 December 2021.

The version of brief reasoning of one of the experts when he determines the direction and pace of change of strategic correspondence in pairs "Internal factors/ Possibilities" ( $I$ ;  $O$ ) is shown in *table 3*

*Table 4* is a matrix of normalized estimates of the rate of change of strategic correspondence between internal factors ( $I$ ) and capabilities ( $O$ ), based on the results of processing the individual assessments of four experts according to the algorithm SSMD-analysis.

Average values of assessments of all possibilities meet the criterion of "realizable", but opportunities  $O_2$  — "optimization processes continued in the global aviation industry: many carriers went out of business" and  $O_4$  — "global passenger turnover is growing, although at a slower rate" close to "hard to realize" for companies (see *table 2*).

Average estimates of internal factors  $I_1$ ,  $I_2$  and  $I_3$  correspond to the criterion of "strength",



Table 5

## Argumentation option for strategic compliance assessments “Internal factors / Threats” for Aeroflot

	$T_1$ – geopolitical events, risks of losses from conflicts, terrorist attacks or other threats	$T_2$ – price volatility of aviation fuel and foreign exchange rates, including because of potential sanctions risks	$T_3$ – restrictions on social mobility and ability to pay	$T_4$ – requirement of ICAO* for carbon offset and reduction for international aviation
$I_1$ – Aeroflot market share	↓ Lower: the presence of Aeroflot covers a large number of countries, which increases the risks	↓ Lower: the presence of Aeroflot covers a large number of countries, which increases the risks	↑ Lower: the presence of Aeroflot covers a large number of countries, which increases the risks	↑ Lower: Aeroflot is present in a large number of countries, so the company is committed to the ICAO scheme to compensate and reduce carbon emissions for international aviation
$I_2$ – Aeroflot market segments	Постоянство: Aeroflot actively develops key market segments, which increases risks	↓ Lower: Aeroflot actively develops key market segments, which increases risks	↑ Higher: Aeroflot is actively developing key market segments	Consistency: Aeroflot is actively developing key market segments
$I_3$ – Aeroflot staff skills and match with international environmental standards	↑ Lower: Employee skills that appropriate to the requirements of the latest international standards and Federal Aviation Regulations	Consistency: Employee skills that appropriate to the requirements of the latest international standards and Federal Aviation Regulations	↑ Lower: Employee skills that appropriate to the requirements of the latest international standards and Federal Aviation Regulations	↑ Lower: Aeroflot has pledged to comply with the ICAO scheme to compensate and reduce carbon emissions for international aviation, but this task is being carried out slowly
$I_4$ – Aeroflot fleet	↑ Lower: Aeroflot has one of the most modern air fleets in Europe	↓ Lower: No decrease in the share of leased aircraft in the company's total fleet	↑ Lower: Aeroflot has one of the most modern air fleets in Europe	↑ Higher: Aeroflot has one of the most modern air fleets in Europe
$I_5$ – Availability of budget segments of the Aeroflot Group	↓ Lower: Aeroflot's budget segments' efficiency may decline in face of these threats	↑ Lower: Efficient use of budget segments allows Aeroflot to counter these threats	↑ Higher: Effective use of budget segments allows the Aeroflot Group to counter these threats	Consistency: Effective use of budget segments allows the Aeroflot Group to counter these threats
$I_6$ – Aeroflot digital transformation	↓ Lower: Aeroflot's digital transformation is slower than international competitors'	↓ Lower: Aeroflot's digital transformation is slower than international competitors'	Consistency: digital transformation of Aeroflot generally corresponds to the current state of the threat	↑ Lower: Aeroflot Group continues its digital transformation in accordance with the adopted IT-strategy
$I_7$ – Complexity of organizational structure and management	↓ Lower: Organizational structure and management optimization moves at a slower than required to address threats	↓ Higher: Organizational structure and management optimization moves at a slower than required to address threats	Consistency: Organizational structure and management practices are broadly consistent with the current state of the threat	↑ Lower: Optimization of organizational structure and management practices in line with international environmental standards

Source: developed by the author.

Note: the up arrow indicates a strategic matching increasing, the down arrow indicates its decreasing.

\* ICAO – International Civil Aviation Organization – UN specialized agency setting international civil aviation standards and coordinating its development with a view to improving safety and effectiveness

Table 6

Matrix of normalized estimates of the rate of change in strategic matching IT

	$T_1, \%$	$T_2, \%$	$T_3, \%$	$T_4, \%$	Average value $I, \%$
$I_1$	-32	-13	71	32	14
$I_2$	0	-32	48	18	9
$I_3$	41	18	48	48	39
$I_4$	-71	-41	-13	71	-14
$I_5$	-71	71	48	18	17
$I_6$	-32	-13	18	32	1
$I_7$	-32	-29	18	32	-3
Average value $T$	-28	-6	34	36	

Source: developed by the author.

factor  $I_5$  – “significant strength”, factors  $I_4, I_6$  и  $I_7$  – “weakness”.

Obviously, the correspondence ( $I_2; O_1$ ) with the assessment  $A_N = 100\%$  provides a strong position for Aeroflot and can be considered as the basis of the company’s development strategy: “Active development of key market segments (from premium to low-budget air transportation), as Russia is one of the world’s largest aviation markets, which continues to grow and develop”.

Strategic match ( $I_3; O_1$ ) – “training of employees in accordance with the requirements of the market” and ( $I_5; O_4$ ) – “low-cost airlines of the Group “Aeroflot” can use unused market potential due to digitalization of the interface between passengers and airlines” with estimates  $A_N = 71\%$  also indicate the strong strategic position of Aeroflot and can be adopted as the basis of development strategy.

Low growth rate of strategic mismatch ( $I_4; O_2$ ), ( $I_4; O_4$ ), ( $I_7; O_4$ ) etc. indicate the weak position of the company in these pairs of factors [in pairs ( $I_4; O_2$ ) and ( $I_4; O_4$ ) this is due to the slow reduction in the dependence of the Aeroflot fleet on leasing of foreign aircraft]. These strategic inconsistencies as early as 2019–2020 years could be considered as the basis of the strategy

of immediate internal transformations of the airline.

Table 5 is a version of a brief argument by one of the experts in determining the direction and rate of change of the strategic match in pairs “Internal factors / Threats” ( $I/T$ ).

Table 6 is a matrix of normalized estimates of the rate of change of strategic correspondence between internal factors ( $I$ ) and threats ( $T$ ), based on the results of processing individual assessments of four experts according to the algorithm SSMD-analysis.

Average of threat assessments  $T_1$  – “geopolitical events, risks of losses from conflicts, terrorist attacks or other threats” and  $T_2$  – “volatility of aviation fuel and foreign exchange rates, including because of potential sanctions risks”, correspond to the criterion of “formidable” (see table 2). The other threats are, on average, classified by experts as “surmountable”.

Average estimates of internal factors  $I_4$  – “Aeroflot fleet” and  $I_7$  – “complexity of organizational structure and management system” experts attributed to “weaknesses”, the rest – to “forces” of the company.

The most notable strategic mismatches (–71%) were pairs of factors ( $I_4; T_1$ ) – “Aeroflot has one of the most modern air fleets in Europe,

but its growth rate is low in the context of geopolitical events, risks of losses from conflicts, terrorist attacks or other threats” and  $(I_5; T_1)$  — “efficiency of use of budget segments of Aeroflot may decrease in the face of geopolitical events, risks of losses from conflicts, terrorist attacks or other threats”, which point to critical weaknesses and can form the basis of an internal change strategy.

The most visible match (71%) that determines the company’s strong strategic position is a couple of factors  $(I_4; T_1)$  — “Aeroflot has one of the most modern aircraft fleets in Europe, which allows it to rapidly increase matching with the ICAO requirements for compensation and reduction of carbon emissions for international aviation”.

### CONCLUSION

Dynamic analysis of the strategic position (SSMD-analysis) of Aeroflot Company, conducted with the help of experts in 2021, allowed to make a conclusion, that the most relevant directions of the company’s strategic development in the beginning of 2020 were active development of key market segments and accelerated replacement of aircraft under leasing on their own.

Other potential areas include: improving the skills of employees in accordance with market requirements; digitalizing the interface between passengers and airlines; reducing the complexity

of the organizational structure and management system of the company.

The proposed method of analysis allows assessment of dynamic characteristics of interaction of key internal and external factors of the company and to make proactive conclusions about the promising strategic directions of the company’s development, its competitive advantages and necessary changes in internal factors. An important feature of it is that the totals of normalized speeds of interaction of internal and external factors are not only estimates of dynamics, but also estimates of the degree of current information uncertainty. The proposed method makes it possible to create a dynamic portrait of the company’s interaction with the external environment, and the values of standard deviation of expert assessments are indicators of relevance and prospects of the generated strategic decisions. SSMD-analysis presents increased demands on the knowledge and competence of experts, but there is reason to believe that modern economic conditions require dynamic assessments.

Subsequent researches of this method can be directed at studying the possibility of its application in various sectors of the economy and types of business. In addition, the development of guidelines for participating experts in strategic analysis is an important part of its development.

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