

Strategic diagnostics of the organization's development in modern conditions

Elena Petrova^{1*}, *Igor Petrov*¹, *Tatyana Larinina*², *Angela Mottaeva*^{3,4}, and *Zhibek Khussainova*⁴

¹ Vyatka State University, 610000 Kirov, Russia

² Vyatka State Agrotechnological University, 610017 Kirov, Russia

³ Financial University under the Government of the Russian Federation, 105005 Moscow, Russia

⁴ Buketov Karagandy University, 100024 Karaganda, Kazakhstan

Abstract. Strategic diagnostics of an organization's development is based on an assessment of its effectiveness. The developed methods of analysis of the assessment of the development strategy are based on the definition of indicators that, in accordance with certain strategic plans, include the entire range of target indicators. The methodology is based on the calculation of integral indicators characterizing the achievement of the set strategic goals. As these indicators based on certain strategic parameters, evaluation indicators characterizing the potential of sustainable development of the organization are proposed. These indicators are recommended to be used as indicators of achieving strategic goals and implementing a sustainable development strategy.

1 Introduction

In modern conditions of uncertainty of the external environment, strategic management is of key importance in ensuring the effective economic development of an organization by improving the mechanism for achieving long-term development goals of these organizations based on a real assessment of their capabilities and production potential.

The development of an organization is a process of positive changes in economic activity aimed at using the potential of the organization and further strengthening it in order to increase competitiveness and business activity. The potential of an organization is a set of opportunities for the implementation of economic activities, determined by the resources at the disposal of the organization [1].

2 Materials and methods

The initial data for the study were statistical data on the main financial and economic indicators. It should be noted that in different periods of time, the same organization is considered as a separate organization (observation). Thus, a sample of 55 observations was formed.

* Corresponding authors: asenka2574@gmail.com

The need for clustering of the initial data is due to the lack of a priori information about the distribution of the general population of observations. Therefore, to classify organizations into groups that are homogeneous in terms of the potential for sustainable development, they use the capabilities of cluster analysis.

Thus, the initial data represent a matrix X with a dimension of 55×17 , i.e. the values of 55 organizations on 17 grounds.

Clustering of the initial observations was carried out by the K-means method [2]. The use of this clustering method made it possible to divide the existing sample of organizations into a given number of groups (three groups) of financial condition and sustainable development potential.

One of the ways to develop organizations is the introduction of the fundamental principles on which the strategic management of organizations should be based [3]. These include the following:

- the principle of scientific logic and analytical foresight;
- the principle of continuous interaction of the internal environment of the organization with the external environment of its functioning;
- the principle of flexibility of strategic management;
- the principle of technological compliance and improvement of the management of organizations;
- the principle of adequacy of strategy and tactics of management of organizations;
- the principle of alternative strategic management;
- the principle of control.

The process of strategic management of organizations is the management of their potential by forming a system of targeted solutions that ensure the development, evaluation of effectiveness and implementation of economic development strategies [4]. We have identified the main stages of the strategy formation process and the algorithm of strategic management of organizations proposed for theoretical and applied management rationalization purposes. This process can be carried out in organizations according to the following main stages:

- determination of the time horizon for the formation of the organization's strategy;
- assessment of the external and internal environment of the organization's functioning and diagnostics of its strategic potential;
- determination of the strategic position of the organization;
- definition of the strategic objectives of the organization's activities;
- definition of target strategic indicators;
- making key strategic decisions;
- evaluation of the development strategy;
- ensuring the implementation of the strategy;
- monitoring the implementation of the strategy.

In our opinion, the assessment of the appropriateness of the organization's development strategy should be the final stage in the process of forming a strategy in the organization's strategic management system. This assessment, first of all, should be based on as complete and reliable information as possible contained in the strategic development plan of the organization and consists in diagnosing the consequences of the developed strategy of its economic development.

To date, there is practically no single methodologically optimal approach to assessing the effectiveness of strategic decision-making by a single (integral) indicator. In modern conditions, organizations operate in a continuously changing external business environment [5]. For example, if a flexible approach, on the one hand, based on solving some problems arising from operational and current targets formed for several months or quarters ahead, can

be applied to small and medium-sized organizations, then large organizations building their strategic plans for many years ahead, it is advisable not to apply this approach.

An important and main criterion for evaluating the development strategy in the system of strategic management of the organization's activities should be the achievement of the organization's strategic goals [6-8].

In world practice, economic, including strategic diagnostics, is being developed to one degree or another at the present time. In this regard, modern scientists are trying to develop methods of strategic analysis and diagnostics.

There is no single approach among economic scientists to understanding the essence of economic diagnostics, despite the fact that the concept is widely used in the study of problems of improving the organization of management of organizations. The most common concept is "diagnostics", used in conjunction with the concept of strategic analysis or identified with the term "target analysis".

Khorin A.N. and Kerimov V.E. consider strategic analysis without distinguishing the concept of strategic diagnostics [2].

Diagnostics, in the work of V.V. Glushenko and I.I. Glushenko, is defined as an analysis of the values and ratios of the parameters of organizational and production systems and the market environment, as well as a change in these ratios in order to establish: the causes of the problem, the hierarchical subordination on which the problem has arisen or can be eliminated [2].

In accordance with the opinion of N.P. Lyubushin [3], diagnostics of economic processes is nothing more than determining the influence of various factors on the result, as well as forecasting their development.

According to A.I. Muravyov [3] diagnostics includes:

- a new direction of analysis of economic activity, which allows to identify and localize violations of the course of the reproductive process on the basis of indicators studied in dynamics;
- a method for determining the nature of violations in the field of economic activity, analyzing deviations from the norm in the dynamics of the studied processes, expressed through the rate of change of the corresponding indicators.

According to M.V. Melnik [3], for a real perspective orientation of the analysis of the management system under study, it is necessary not only to justify the areas of improvement, but to determine priorities and find the most rational ways of development and improvement of activities in specific conditions. This provides a diagnostic analysis that allows you to compare and choose effective solutions for the development of a management system based on the identification of the diagnostic relationship "cause-effect" and "private-whole".

Yu.I. Chernyak defines diagnostics as a set of methods aimed at improving the management systems of organizations using the conceptual apparatus of systems theory. Further, he characterizes the content of diagnostic studies and notes: "Despite the greater or lesser clarity and stability of the organization's goals, there are always problems in achieving them. These problems are caused by the shortcomings of the existing organization of production and management. The purpose of the diagnosis is to establish the symptoms of abnormalities, identify and eliminate them with the help of appropriate means."

In the understanding of B.Y. Serbinovsky, diagnostics is "the teaching of methods, processes and principles of recognizing "diseases" of the production system and making a diagnosis, assessing its condition and development prospects, measuring parameters, establishing and studying signs in order to maintain the ability to function effectively and adapt to changes in the external environment."

A group of authors - Rapoport R.S., L. Karas and others, consider diagnostics as an activity aimed at establishing, analyzing and evaluating problems of improving the efficiency of the management system and determining the main directions of their solution.

Bernholz S.B. considers economic diagnostics as a complex method of prior (predictive analysis).

A.N. Chekmenev aims at diagnostics to increase the efficiency of the management system on the basis of structural transformations and the ordering of internal and external relations, as well as by attracting qualitatively new elements and connections to the system, expanding the possibilities of purposeful adaptive behavior in a complex environment.

From the standpoint of L.M. Strong, economic diagnostics at the macro level is the final stage of the analysis of economic activity.

Endovitsky D.A. defines the concept of diagnostic analysis as an effective way to identify signs of violations of the normal course of economic processes, as well as a tool for justifying measures to restore the economic health of an organization.

Glazov M.M. characterizes diagnostics as the teaching of methods and principles of recognition of dysfunctions and diagnosis of the analyzed object in order to increase the efficiency of its functioning, increase its viability in conditions of free competition, free unregulated market.

At the same time, L.V. Prykina presents diagnostic analysis as a way to establish the nature of violations of the normal course of economic processes on the basis of typical signs characteristic of this violation [2].

It can be concluded that most authors interpret diagnostics as an assessment of the state of economic objects in order to identify development problems and promising directions for their resolution. From our point of view, diagnostics is the process of assessing the state of an organization in order to identify development problems, establish their causes and possible ways to solve them, taking into account the influence of various factors for the sustainable development of the organization and increasing the effectiveness of its strategic potential. In addition, strategic diagnostics should include such elements as: forecasting the strategic potential of the organization and monitoring the process of strategy implementation and adjustments of strategic targets and ways to achieve them. It is extremely important that strategic diagnostics becomes the basis of the strategic planning system in modern economic conditions.

It is absolutely possible to formulate the goals of strategic diagnostics in the context of strategic management of organizations:

- timely identification of symptoms of strategic problems;
- relief of strategic problems and elimination of their negative consequences;
- developing a successful organizational strategy;
- control over the implementation of the organization's strategy in terms of achieving the target strategic parameters.

For top managers and owners of the organization, strategic diagnostics is a tool that allows timely use of strategic opportunities, take measures to eliminate weaknesses, and model the development of the organization.

In our opinion, the main provisions of economic diagnostics are also relevant for strategic diagnostics and include:

- the study of new capabilities of the management object as a result of changes in the external and internal conditions of the organization's functioning;
- determination of cause-and-effect relationships in the development of the object and the subject of management;
- defining the boundaries of the manager's expertise and the expert systems used in the diagnosis of strategic problems, their prevention and solution;
- monitoring of changes in the state of the situation in the conditions of uncertainty of the market macro environment, which reduces the controllability and degree of information control and the probability of forecasting;
- the need to improve the effectiveness of prognostic diagnostic functions.

Thus, based on the results of the cluster analysis, the initial sample of 55 organizations was divided into three groups of the organization's sustainable development potential:

- organizations with high potential for sustainable development of the organization;
- organizations with low potential for sustainable development of the organization;
- high-risk organizations that are in a financial crisis, insolvent or with low solvency, with a real prospect of bankruptcy, i.e. practically, without the potential for sustainable development of the organization.

As a result, 17 organizations fell into the first group, 23 into the second, and 15 into the third.

The results of clustering served as a priori information about the potential of sustainable development of the organizations under study.

As mentioned above, the potential for sustainable development of an organization can be characterized by the following groups of factors: indicators of financial stability, assessment of property status, solvency (liquidity), business activity, profitability. There is a functional dependence between some of them due to the fact that they are all based on unified accounting statements. This dependence was investigated and selected those main financial indicators between which it is not observed [2]. In addition, for the construction of the model, factors were selected between which the correlation coefficient is less than 0.5 (i.e., the linear relationship between which is weak or practically absent).

3 Results

As a result, by the method of step-by-step exclusion, a significant model was obtained with the following factors affecting the profitability of assets: the coefficient of autonomy, the coefficient of asset turnover, the coefficient of mobility of equity, cost-effectiveness [2].

Based on the results of the obtained correlation coefficients and weighting, the following model of the organization's sustainable development potential is obtained:

$$Ra = -23.34 + 16.50 K1 + 8.29 K2 + 0.52 K3 + 0.68 K4 \quad (1)$$

where

- Ra - return on assets ratio;
- $K1$ - coefficient of autonomy;
- $K2$ - asset turnover ratio;
- $K3$ - equity mobility coefficient;
- $K4$ is the cost-effectiveness ratio.

To use the model in order to classify organizations, boundary conditions for each group were determined, i.e. the coordinates of the centroids of each group (average values of features for each group) were substituted into the resulting model. This makes it possible to determine the boundaries of the interval for each group, when the values of the regression model for a particular observation fall into, this observation can be attributed to the corresponding group.

In this case, uncertainty zones inevitably arise, which are sometimes called "gray zones" (for example, the intervals of neighboring groups intersect, or some part of the numerical line is not occupied by any of the intervals).

In this case, attributing the observation to a group is difficult. With the introduction of uncertainty zones, the numerical line is divided into zones, when values fall into which we can talk about an intermediate position when assigning an organization to a certain class. Figure 1 shows two zones of uncertainty between classes.

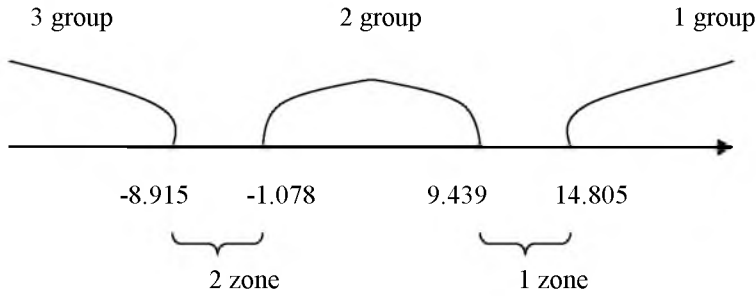


Fig. 1. Division of the numerical line into groups of organizations on sustainability.

Depending on the calculated indicator of return on assets (R_a), an assessment of the potential for sustainable development of the organization is made:

- if $R_a > 14.805$, then organizations have a high potential for sustainable development;
- if $14.805 > R_a > 9.439$, then organizations occupy an intermediate position between high and low sustainable development potential;
- if $9.439 > R_a > -1.078$, then organizations have a low potential for sustainable development;
- if $-1.078 > R_a > -8.915$, then organizations occupy an intermediate position between low potential for sustainable development and its absence;
- if $R_a < -8.915$, then the financial condition of the organization is in crisis and there is no potential for sustainable development.

This model makes it possible to determine the potential for sustainable development of an organization in the process of implementing an economic development strategy. In addition, the use of this model enables management personnel engaged in strategic control to respond in a timely manner to negative changes in the development of the organization's business processes and take preventive measures to neutralize them.

The assessment of the expediency of applying the chosen strategy, of course, should be based on an assessment of its effectiveness. Such an assessment, in our opinion, should be the final stage in the process of forming a strategy in the system of strategic management of the development of the organization's activities.

The process of evaluating the development strategy in the system of strategic management of the organization's activities, in our opinion, should consist of the following main stages:

1. Identification of key strategic indicators. This stage consists in determining the entire set of key strategic indicators;
2. Determination of absolute values of key strategic indicators. Means quantification of the values of the corresponding strategic indicators;
3. Definition of a complex indicator characterizing the achievement of strategic goals. At this stage, a comprehensive indicator is selected that takes into account the entire set of key strategic indicators as much as possible;
4. Diagnostics of the effectiveness of strategy implementation is the process of determining the value of a complex indicator and making a diagnosis concerning the achievement of strategic goals;
5. The identification of deviations of the results obtained from the strategic goals should be formalized, i.e. their quantitative assessment, in addition, the nature of the identified deviations should be determined;
6. Identification of the causes of deviations of the results obtained from the strategic goals. This stage consists in determining the causes of deviations that are both formalized and non-formalized;

7. Making decisions on the need to adjust the target strategic indicators and (or) ways to achieve them, or the absence of such a need, if the complex indicator corresponds to the goals of strategic development.
8. Adjustment of strategic targets and ways to achieve them.

The process of evaluating the development strategy should be built in accordance with the following principles:

1. Ease of evaluation. The simplest forms and methods of evaluating the effectiveness of the implementation of the formed strategy require less effort from specialists involved in such an assessment and, accordingly, are the most economical.
2. Availability of assessment tools. Tools for evaluating the effectiveness of the implementation of the formed strategy should be provided with sufficient qualifications of specialists and technical support from information support.
3. Flexibility of performance evaluation indicators. Development strategy evaluation indicators should be comprehensive and take into account a set of all quantitative indicators of a strategic nature. Thus, a comprehensive indicator can include any strategic targets in its composition.
4. Focus on quantitative assessment. The benefit of management actions increases significantly if the comprehensive indicators of the assessment of the development strategy are expressed in specific quantitative values. This is all the more important because quantitative assessment allows for an objective comparison of alternative options for industrial and economic development strategies.
5. Compliance with management analysis methods. In the process of evaluating the effectiveness of the formed strategy, it is necessary to focus on a set of methods and indicators used in the practice of management analysis.
6. Timely assessment of the effectiveness of the formed strategy. Such timeliness should consist in early warning of deviations of strategic indicators, in order to eliminate such deviations in a timely manner before they become threatening[3].

Based on the above principles, a methodology for assessing the development strategy is proposed, which consists in calculating an indicator characterizing the achievement of strategic goals. An estimated development indicator is proposed as such an indicator that takes into account key strategic parameters.

Such an indicator, in accordance with the set strategic goals, should take into account the entire set of target strategic indicators.

Two algorithms for calculating the estimated development indicator are proposed. The first is due to the fact that the estimated development indicator, in accordance with the goals, should take into account the relative dynamics of the target strategic indicators and be calculated according to the formula:

$$DIP = \sqrt[n]{T_1 * T_2 * T_3 * \dots * T_n} \quad (2)$$

where $T_1, T_2, T_3 \dots T_p$ are relative indicators of the dynamics of strategic indicators (growth coefficients).

At the same time, it is necessary to take into account the nature of the relationship between the estimated development indicator and the target strategic indicators: the growth of some strategic indicators has a negative impact on the change in the estimated development indicator, and on the contrary, their decrease has a positive impact on the change in the estimated development indicator. Such indicators should be presented in the form of an inverse relationship – "1/ T".

For example, in relation to a specific organization, the target strategic indicators include dynamic indicators, namely:

- the coefficient of growth of the cost of production;

- the growth rate of the volume of sales of products;
- net profit growth ratio;
- the growth rate of the organization's share in the industry market of the region;
- the coefficient of growth of the level of use of raw materials.

At the same time, the dynamic indicator of the cost of production should be presented in the form of $1 / T_s$, since it is obvious that the increase in the cost of production has a negative impact on the change in the estimated development indicator.

In accordance with the first algorithm, the estimated development indicator is recommended to be calculated using the following formula:

$$DIP = \sqrt[5]{1/T_c \times T_v \times T_{pr} \times T_r \times T_{um}} \quad (3)$$

where

- T_c - the growth coefficient of the cost of production;
- T_v - the growth rate of the volume of sales of products;
- T_{pr} - net profit growth ratio;
- T_r - the growth coefficient of the organization's share in the industry market of the region;
- T_{um} - the coefficient of growth in the level of use of raw materials.

4 Discussion

This indicator should be used as an indicator of the effectiveness of the developed strategy and the achievement of strategic goals.

After the diagnostics of the effectiveness of the formed development strategy, it is necessary to identify the presence of deviations of the results obtained from the strategic goals and give them not only a quantitative assessment, but also to determine the nature of such deviations.

The nature of the identified deviations caused by certain changes in individual strategic targets can be either positive or negative [7]. If the deviation of the estimated development indicator from the normative one is negative, i.e. the indicator deteriorates significantly, then the process of identifying the causes of such deviations follows.

The reasons for the deviation may be informal and formalized. Informal reasons for deviation, in turn, can be subjective and objective.

Identification of formalized causes, i.e. causes that can be quantified, should be carried out through factor analysis.

After the reasons for the deviations of the estimated development indicator from the normative one are determined, a decision is made on the need to adjust the target strategic indicators and ways to achieve them.

Such an adjustment can be made in the following cases:

- in case of unforeseen changes in the factors of the external business environment of the organization's functioning, accumulating significant threats to the implementation of the economic development strategy, the impact of which cannot be fully eliminated;
- in case of unforeseen changes in the factors of the external environment of the organization's functioning, which create quite significant additional opportunities for the economic development of the organization;
- with a change, namely, an increase in the internal financial and economic potential of the organization due to the additional effect obtained as a result of a sufficiently successful implementation of strategic changes;
- when changing the rather seriously conditioned goals of the organization's economic development strategy.

5 Conclusion

The formation of the key elements of the strategic management of the organization is based on the results of strategic assessment and strategic diagnostics, which are the most important components of strategic management

Strategic diagnostics is a tool for evaluating the current strategy and identifying the consequences of implementing the chosen strategy, including evaluating its effectiveness. Strategic diagnostics reveals the possibilities of implementing the adopted strategy, and whether this will lead to the achievement of the goals set by the organizations.

The article presents a model of the organization's sustainable development potential, which allows for diagnostics in the process of implementing the strategy of industrial and economic development. In addition, the use of this model makes it possible for management personnel engaged in strategic control to respond in a timely manner to negative changes in the development of economic processes and take proactive measures to neutralize them.

In addition, the assessment of the feasibility of applying the chosen strategy, of course, should be based on an assessment of its effectiveness. Such an assessment, in our opinion, should be the final stage in the process of forming a strategy in the system of strategic management of the development of organizations.

The paper proposes a methodology for evaluating the effectiveness of the formed strategy, which consists in calculating an integral indicator characterizing the achievement of strategic goals.

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