

Analysis of Personnel Training and Development in a Balanced Scorecard

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Abstract

The article is generally theoretical in nature and is devoted to the consideration of the possibility of using the applied strategic analysis of personnel training and development developed by its author, based on the balanced scorecard component of the same name, in the process of studying the strategic aspects of training and development of the organization's personnel. The methodological basis of the study was the concept of a balanced scorecard by R. Kaplan and D. Norton and the concept of applied strategic analysis developed earlier by the author of this article. It is shown that the applied strategic analysis of personnel training and development involves a comparative assessment, diagnosis of deviations and forecasting of the values of the indicators of the personnel training and development component of the organization's balanced scorecard in the context of their strategic goals. It includes an analysis of the level of motivation of employees, the amount of authority delegated to them and the degree to which their personal goals correspond to corporate goals, and an analysis of the degree of empowerment of information systems, as well as an analysis of the quality of retraining and the level of development of the creative abilities of employees. Applied strategic analysis of personnel training and development begins with a comparative assessment of the values of performance indicators that characterize the level of motivation of employees, the amount of authority delegated to them and the degree of compliance of their personal goals with corporate goals, and ends with forecasting the values of factor indicators of the quality of retraining and the level of development of the creative abilities of employees. Its results can be used in the development of long-term, medium-term and short-term management decisions in the area of the organization's activities related to the training and development of personnel. The methodological tools for applied strategic analysis of personnel training and development include methods of absolute, relative and average values, comparison, grouping, graphical and tabular methods, correlation and regression analysis, factor analysis, cluster analysis and

methods of expert assessments. The author comes to the conclusion that the applied strategic analysis of personnel training and development is a new and quite effective tool for studying the strategic aspects of an organization's activities related to personnel training and development, forming the analytical support for its strategic management in terms of personnel training and development in modern conditions.

Keywords: applied strategic analysis, balanced scorecard, training and development, personnel, management, organization

JEL codes: L29, M12, M41, M53

INTRODUCTION

In the conditions of a modern market economy, ensuring the sustainable development of an organization (enterprise, firm, company, business unit) in the long term, leading to the maximization of its market value, as one of the most important components, implies the need for appropriate training and development of the personnel of this organization.

The learning and development component of the balanced scorecard defines the infrastructure that needs to be put in place to ensure long-term growth and improvement. The strategic goals of this component of the BSC are factors in the implementation of the plans set by the first three components of the balanced scorecard: internal business processes, client and financial:

Organizational learning and staff development, including career development, has three main sources: people, information systems (IT systems) and organizational procedures. The first three components of a balanced system, as a rule, reveal a large gap between the existing capabilities of people, information systems and organizational procedures and those required for a breakthrough in activity. In order to close this gap, the organization must invest in retraining staff, improving information technology and systems, creating a relationship between organizational procedures and daily operations (Kaplan & Norton, 1996). These goals are formulated by the considered component of the BSC.

Indicators of the personnel training and development component are a set of general parameters (staff job satisfaction, staff turnover, training, advanced training) and specific factors, such as a detailed set of skills and abilities specific to this activity and skills needed in a new competitive environment. An indicator of the capabilities of information systems is the availability of timely, accurate assessment information about the client and about internal business processes that are important for those employees who are authorized to make decisions. With the help of

organizational procedures, it is possible to analyze how the motivation of each employee of the organization is consistent with the overall system of factors aimed at achieving success. It is important, however, not only to assess the degree of implementation of a particular strategic decision in the field of personnel training and development management, but also to identify the reasons for the deviation (if any), as well as to predict the further development of the situation, which actualizes the development and improvement of the relevant analytical tools. In this regard, the author of this article considers it appropriate to consider the possibility of using the applied strategic analysis developed by him earlier in the process of forming the analytical support for the strategic management of training and development of personnel.

PREVIOUS RESEARCH (CURRENT STATE OF THE PROBLEM)

Before proceeding to the presentation of the author's contribution to the solution of the problem considered in this article, we briefly characterize its current state. It is reflected in the opinions of some of the most famous and authoritative, according to the author of this article, scientists and specialists, who can be divided into two groups:

- 1) involving the use of a balanced scorecard;
- 2) not involving the use of a balanced scorecard.

However, it is necessary to pay special attention to the fact that researchers from the first group, as a rule, focus on the use of analysis in relation to the BSC as a whole, and not in relation to its component of personnel training and development separately.

relation to the balanced scorecard as a whole, it should be noted that R.S. Kaplan and D.P. Norton, who are the founders of the concept of a balanced scorecard, refer to the mechanisms (tools) for regular analysis of an enterprise's strategy as correlation analysis, scenario analysis, analysis of strategic initiatives, reports with examples, peer reviews of independent specialists, as well as management games (Kaplan & Norton, 1996). At the same time, they believe that the discrepancy between the actual values of the BSC indicators and their planned values requires managers to think about the adequacy of the enterprise strategy, since a clear system of interrelated BSC indicators provides an opportunity, if not statistical, then informal verification of business strategy. Applied to the study of staff learning and development R.S. Kaplan and D.P. Norton places great emphasis on employee empowerment and motivation, employee satisfaction, talent retention, employee performance, and information systems capabilities.

In accordance with the point of view of Horvath & Partners, the analysis performed on the basis of BSC indicators should cover the following main points (Horvath & Partners, 2004):

- assessment of the success of the implementation of strategic goals, based on information about the actual values of BSC indicators;
- identifying the reasons for the deviation of the actual values of BSC indicators from their target values;
- determination of the impact of the deviations that have arisen on the target values of the BSC indicators;
- study of the current situation regarding the implementation of strategic measures;
- identifying activities that can be implemented;
- identification of the structural divisions of the enterprise, in which there were significant deviations from the target values of the BSC indicators;
- determining the impact of emerging trends on the success of the strategy implementation;
- establishing the subjects of analysis of the state of implementation of the strategy (the head of the structural unit himself or a team of experts).

According to M.G. Brown, the analysis should consist in the calculation and subsequent study of the values of analytical indicators of the BSC, which are a kind of "sensors" on the organization's dashboard and tell managers how effective their activities are (Brown, 2007).

Analytical indicators differ from those included in the balanced scorecards of most organizations, focus on a specific component of the BSC (including its after-sales service component) and are made up of sub-indicators that reflect a separate area of the organization's activities. At the same time, indicators of lower levels are considered as sub-indicators, which are different variables and quite often have different units of measurement. Each sub-indicator included in the analytical indicator is assigned a weight value depending on the degree of its significance for assessing effectiveness, reliability and probability. A system based on analytical indicators, according to M.G. Brown, makes it possible to more fully evaluate the effectiveness of the organization's activities in comparison with a system based on separate, individually measured indicators. Measurement of analytical indicators is usually carried out on a 100-point scale, where 100 points is the best characteristic. In the process of analysis based on the results of the calculation of analytical indicators, the reasons that determined their given level or trend of efficiency are identified. Particular attention is paid to the root cause that caused problems or performance degradation, including the use of personnel. It is also necessary to determine the factors of good performance or trends towards its improvement. The result of the analysis is an action plan, the implementation of which is necessary to improve efficiency or maintain it at the achieved level. Usually it consists of specific tasks, a list of persons responsible for their implementation and deadlines. Obviously, such action plans should be

based on relevant analytical information. At the same time, as a rule, the manager who is responsible for the deteriorating indicator is obliged to develop an action plan.

According to H.K. Rampersad, the analysis should provide a check of what has been done and what has not been done, as well as to determine the extent to which the goals have been achieved (Rampersad, 2003). Based on the degree of compliance of the results obtained with the set goals, the process of implementing the balanced scorecard or the system itself can be adjusted. The analysis should contribute to the constant alignment of the BSC with the changing external environment, which creates a constant learning effect that helps the organization to better understand itself. According to H.K. Rampersad, such an analysis, carried out at the level of the organization and its individual employees, will contribute to the learning process as a whole. H.R. Friedag and W. Schmidt note that the analysis in a balanced scorecard should, first of all, be directed to those indicators, the actual values of which deviate from the planned values. In the course of the analysis, it is necessary to establish the presence (absence) of unforeseen circumstances, how well the employees cope with their duties, and whether the plan is correct. At the same time, the process of implementing the strategy in the enterprise should be discussed every month (Friedag & Schmidt, 2002).

N.-G. Olve, J. Roy and V. Wetter point out that there is no need to organize a continuous measurement or analysis of all BSC indicators, since ideally management control can be reduced to fairly simple verification procedures or to monitoring the progress of the implementation of strategies of the summary index (Olve, Roy & Wetter, 2000).

Briefly summarizing the above points of view of researchers who assume the use of a balanced scorecard in the process of analyzing the organization's activities, we highlight a number of key points:

- the goals of the analysis carried out on the basis of a balanced scorecard are to assess the success of the implementation of the organization's strategy, as well as to constantly harmonize the balanced scorecard with a changing external environment;
- in the process of carrying out such an analysis, deviations of the actual values of the BSC indicators from their target (planned) values should be determined, their causes identified, and structural divisions of the organization in which these deviations are significant should be identified;
- in addition, when performing an analysis, it is possible to study the so-called analytical (generalizing) indicators of the organization's performance, including the use of its personnel, which are calculated on a weighted average based on more specific BSC indicators and are evaluated on a 100-point scale;

- the results of the analysis in the BSC should include a plan of actions necessary to improve the efficiency of the organization or maintain it at the achieved level, as well as a continuous learning effect that helps the organization to better understand itself.

Among the researchers of the second group (not involving the use of BSC), one can distinguish numerous representatives of the scientific school of economic analysis of the activities of an organization (enterprise), which originated in the Soviet Union and was further developed in a number of post-Soviet states.

The most famous of them are one of the founders of the above-mentioned scientific school A.D. Sheremet (Sheremet, 2005, 2008), as well as V.I. Barilenko (Barilenko, 2016), G.V. Savitskaya (Savitskaya, 2013), S.A. Boronenkova and M.V. Melnik (Boronenkova & Melnik, 2016), N.P. Lyubushin (Lyubushin, 2006).

It should be noted that there are no significant conceptual differences in the interpretations of the economic analysis of the activities of the organization as a whole by the researchers listed above. Analysis of the training and development of its personnel carried out by the organization as a set of processes for retraining and developing the creative abilities of employees, which make it possible to achieve the strategic goals of the organization; expanding the capabilities of information systems to a level that allows employees of the organization to receive the necessary comprehensive information about customers, internal business processes, as well as the financial consequences of their decisions; ensuring the motivation of employees, delegating authority to them and matching personal goals with corporate ones, is not considered in this context at all. Usually they, as part of the analysis of the organization's labor resources (the availability of them and their efficiency of use), consider these aspects in part. In this case, the analysis of the state and use of information systems is usually carried out as part of the analysis of fixed assets (funds).

METHODOLOGICAL BASIS OF THE RESEARCH

The methodological basis of the study, the results of which are presented in this article, were two concepts:

- 1) the concept of a balanced scorecard;
- 2) the concept of applied strategic analysis.

The concept of a balanced scorecard (BSC) as an analytical tool for strategic management was developed by American scientists R. Kaplan and D. Norton in the early 90s of the twentieth century (1992). Later, it was developed in the works of both these (Kaplan & Norton, 1996, 2001, 2003, 2004, 2005, 2006, 2008; Kaplan, Norton & Rugelsjoen, 2010) and a number of

other economic scientists (Brown, 2007; Friedag & Schmidt, 2002; Horvath & Partners, 2004; Maisel, 1992; Niven, 2014; Olve, Roy & Wetter, 2000; Rampersad, 2003) and has been successfully field-tested multiple times. In modern conditions, the BSC is considered as one of the most important and quite effective means of strategic management of the organization.

The main reason for the need to develop the concept of the BSC is the contradiction that arose between the force majeure aimed at creating broad competitive opportunities and the clumsy model of accounting (financial) reporting.

A balanced scorecard as a whole can be characterized as a set of parameters that comprehensively characterize the activities of an organization in a modern market economy. It reflects the balance that must be maintained between short-term and long-term goals, financial and non-financial indicators, main and auxiliary parameters, as well as external and internal factors of activity.

BSC indicators are formed depending on the worldview and strategic goals of each specific organization and therefore are individual for it. They represent a balance between external reporting data for owners (shareholders) and customers and internal characteristics of the most significant business processes, innovation, learning and growth. It is a balance between past performance and future growth. The system itself is a combination of objective, easily quantifiable results and subjective, to some extent, arbitrary parameters of future growth.

The main goal of the BSC – transformation of the corporate strategy into specific, quite tangible goals, indicators and, ultimately, events.

The metrics for the balanced scorecard are chosen so that the attention of managers and employees of the organization is focused on those factors that can lead to major achievements in the competition in the market. At the same time, the BSC should be available in terms of information for employees of the organization at all levels. Frontline employees need to understand the financial implications of their decisions and actions. Top managers must be fully aware of what will lead the company to long-term financial success.

At the heart of building a balanced scorecard are cause-and-effect relationships, factors for achieving results and the relationship with financial performance.

The balanced scorecard includes four main interrelated components: financial, client, internal business processes, as well as staff training and development, viewed through the prism of key issues, strategic goals, indicators and their target values, as well as strategic activities.

At the same time, BSC indicators can comprehensively characterize the activities of not only commercial, but also state and non-profit organizations and are relatively few (as a rule, on average, about 25 performance indicators).

The development of the concept of applied strategic analysis (ASA) was caused by the need to improve the efficiency of strategic management in the difficult conditions of the modern market economy, requiring the improvement of its information and analytical support, thereby predetermining the feasibility of further development of the theory, methodology and methodology for analyzing the strategic aspects of the organization as a whole to the level , at a minimum, financial analysis, which is a fairly effective tool for studying the financial aspects of the organization's business activities based on financial indicators.

ASA, considered as a supporting function of strategic management, involves a comprehensive study of the strategic aspects of the organization's business activities based on a balanced scorecard (Krylov, 2010, 2013a, 2013b, 2014c).

Based on the BSC, which is exclusively individual for each specific organization, the ASA cannot have a standard methodology. His methodology is individual for each specific organization.

The purpose of the applied strategic analysis is the formation of analytical support for the adoption of strategic management decisions.

The most important tasks of the ASA:

1. Comparative assessment of the values of the BSC indicators, which involves comparing their actual and target values, determining the deviations of the actual values from the target values of the BSC indicators and a qualitative assessment of these deviations.
2. Diagnosis of deviations in the values of BSC indicators, during which the factors for achieving results are identified that have had the most significant impact on the deviation of the values of general, or effective, BSC indicators, and its value is determined by the appropriate methods of factor analysis.
3. Forecasting the values of BSC indicators, which is of a target nature and consists in the initial establishment or adjustment (in the presence of objective circumstances) of the target values of the BSC indicators and the determination of specific ways to achieve them, or in the development of measures aimed at eliminating the deviations that have arisen between the actual and target values of the BSC indicators in the future.

At the same time, all of them are closely interconnected, since each subsequent task follows from the previous task: diagnostics are carried out on the basis of the results of a comparative assessment of the values of BSC indicators, and their prediction is made taking into account the results of diagnostics.

There are three interrelated and coordinated aspects of ASA:

- 1) the actual strategic aspect, within the framework of which the final values of the BSC indicators are evaluated, diagnosed and predicted for the period of the strategy being developed, i.e. their strategic importance;
- 2) tactical aspect, within the framework of which intermediate values of BSC indicators are evaluated, diagnosed and predicted at the end of each year, i.e. their tactical implications;
- 3) operational aspect, within the framework of which intermediate values of BSC indicators are evaluated, diagnosed and predicted at the end of each month, i.e. their operating values.

The results of the analysis of the operational values of the BSC indicators affect their tactical values, and the results of the analysis of the tactical values of the BSC indicators influence their strategic values.

The main methodological techniques used by applied strategic analysis include methods of absolute, relative and average values, comparison, grouping, graphical and tabular methods, correlation and regression analysis, factor analysis, cluster analysis and methods of expert assessments.

The ASA is carried out in accordance with the principle of deduction, according to which the values of the most common indicators of the BSC are examined first, and then the values of its more particular indicators. This principle determines the general procedure for conducting applied strategic analysis in the main areas, which are the analysis of financial indicators, the analysis of client indicators, the analysis of indicators of internal business processes, the analysis of indicators of training and development of personnel.

Including more particular components, each of the main areas of applied strategic analysis: financial, client, internal business processes, as well as staff training and development - is presented through the prism of its most important tasks: comparative assessment, diagnostics and forecasting. As a result of this presentation, applied strategic analysis begins with a comparative assessment of the values of financial indicators and ends with a forecast of the values of indicators of training and development of personnel.

The main areas of ASA listed above can be transformed into the following separate types: applied strategic financial analysis, applied strategic client analysis, applied strategic analysis of internal business processes, applied strategic analysis of personnel training and development. At the same time, applied strategic analysis of internal business processes consists of applied strategic analysis of after-sales service, applied strategic operational analysis and applied strategic innovation analysis.

Revealing the content of applied strategic analysis as a rather complex economic category, the author of this article in his previous works considered applied strategic innovation analysis

(ASIA) as a type of ASA that involves a comprehensive, comprehensive study of the strategic aspects of an organization's innovation activity based on the innovative component of its BSC (Krylov, 2014a, 2014b), applied strategic financial analysis (ASFA), aimed at a comprehensive, integrated study of the strategic aspects of the organization's financial activities based on the financial component of its BSC (Krylov, 2015a , 2015b, 2015c), applied strategic client analysis (ASCA), which allows you to comprehensively, comprehensively explore the strategic aspects of the organization's sales activities based on the client component of its BSC (Krylov, 2016a, 2016b), applied strategic operational analysis (ASOA), which allows you to comprehensively, comprehensively explore the strategic aspects of the organization's operating activities based on the operational component its BSC (Krylov, 2017), as well as applied strategic analysis of after-sales service (ASASSA), which allows a comprehensive, integrated study of the strategic aspects of the after-sales service carried out by the organization, based on the after-sales service component of its BSC (Krylov, 2019). In this article, its author proceeds to characterize the next type of applied strategic analysis – applied strategic analysis of personnel training and development.

RESULTS

The concept and essence of applied strategic analysis of personnel training and development

Applied strategic analysis of personnel training and development (ASATPD) is a type of applied strategic analysis and is aimed at a comprehensive, integrated study of the strategic aspects of the organization's activities in the field of personnel training and development based on the personnel training and development component of its balanced scorecard. It can also be considered as a supporting function of the strategic management of personnel training and development.

The subject of the ASATPD is the indicators of the component of personnel training and development (indicators of personnel training and development) of the BSC and the factors that determine them, and its object is the strategic aspects of the organization's activities in the field of training and development of its personnel.

The purpose of the applied strategic analysis of personnel training and development is the formation of analytical support for making strategic decisions in the field of personnel training and development management.

To achieve the above goal of conducting the ASATPD, it is necessary to solve its most important tasks, which include (by analogy with the ASA as a whole) a comparative assessment,

diagnostics of deviations and forecasting of the values of the indicators of the training and development component of the personnel of the balanced scorecard.

The most important tasks of the applied strategic analysis of personnel training and development listed above are closely interconnected, since each subsequent task follows from the previous task: the diagnosis of deviations in the values of the indicators of the training and development component of the BSC personnel is carried out on the basis of the results of their comparative assessment, and the prediction of the values of these indicators carried out taking into account the results of the diagnosis of their deviations.

Comparative assessment of the values of the indicators of the component of training and development of personnel of the BSC involves a comparison of their actual and target values, the determination of absolute and relative (in percent) deviations, a qualitative assessment of these deviations, which largely depends on their magnitude (Table 1).

Table 1. Approximate qualitative assessment of deviations of actual values indicators of the training and development component of the BSC personnel from their target values

The deviation of the actual values of the indicators of the training and development component of the BSC personnel from their target values, %	Qualitative assessment of the deviation of the actual values of the indicators of the training and development component of the BSC personnel from their target values
Up to 1	Insignificant
1 to 5	Essential
5 to 10	Significant
10 to 20	Serious
20 or more	Very serious

Source: developed by the author

Diagnosis of deviations in the values of indicators of the personnel training and development component of the BSC is based on cause-and-effect relationships that combine the indicators of a balanced system, including its component of personnel training and development, into a single whole - a balanced set of effective (general) indicators and their determining factors (factors for achieving results).

In the process of diagnosing deviations in the values of the indicators of the personnel training and development component of the balanced scorecard, the factors for achieving results that have had the most significant impact on the deviation of the general, or effective, indicators of the BSC personnel training and development component are identified, and its value is determined using appropriate methods of factor analysis. Based on the calculation results, the corresponding conclusions are formulated.

The factor model of indicators of training and development of personnel in a balanced system, the block diagram of which is presented in the most general form in fig. 1 includes, as the final (most general) indicators, the performance indicators of the BSC personnel training and development component and one level of factors determining them - factor indicators of the BSC personnel training and development component.



Fig. 1. Block diagram of the factorial model of learning and development indicators BSC personnel in the context of its individual components

Forecasting the values of the indicators of the training and development component of the BSC personnel is of a targeted nature and consists in the initial establishment or adjustment (in the presence of objective circumstances) of the target values of the indicators of training and development of the BSC personnel and the determination of specific ways to achieve them or in the development of measures aimed at eliminating the deviations that have arisen between actual and target values of the indicators of the training and development component of the BSC personnel in the future. At the same time, the values of general (performance) indicators are first predicted, and then, on their basis, the values of the factor indicators of training and development of the BSC personnel.

Aspects of ASATPD as a type of ASA include proper strategic aspect, tactical aspect and operational aspect.

As part of the strategic aspect of the applied strategic analysis of personnel training and development, the final values of the indicators of the personnel training and development component of the BSC are evaluated, diagnosed and predicted for the period of the developed strategy in the field of personnel training and development, i.e. their strategic importance.

As part of the tactical aspect of the applied strategic analysis of personnel training and development, intermediate values of the indicators of the component of training and development of personnel of the BSC are assessed, diagnosed and predicted at the end of each year, i.e. their tactical implications.

As part of the operational aspect of the applied strategic analysis of personnel training and development, intermediate values of the indicators of the BSC personnel training and

development component are assessed, diagnosed and predicted at the end of each month, i.e. their operating values.

At the same time, all the above aspects of the ASATPD are interconnected and coordinated with each other: the results of the analysis of the operational values of the indicators of the training and development component of the BSC personnel affect their tactical values, and the results of the analysis of tactical values affect their strategic values.

The methodological toolkit of the ASATPD includes a set of methods (techniques, methods) that ensure the solution of the most important tasks of the analysis and, accordingly, the achievement of its goal. The main methodological techniques of applied strategic analysis of personnel training and development as a type of applied strategic analysis include methods of absolute, relative and average values, comparison, grouping, graphical and tabular methods, correlation and regression analysis, factor analysis, cluster analysis and methods of expert assessments.

Information base for applied strategic analysis of personnel training and development

The information base for the applied strategic analysis of personnel training and development is a component of personnel training and development of a balanced scorecard, the formation of which includes a number of stages.

1. Determination of the strategic goals of training and development of the organization's personnel

Work on the formation of the personnel training and development component of the balanced scorecard begins with the definition by personnel managers of the main strategic goal of personnel training and development and its components of more specific, specific strategic goals of personnel training and development based on the key problems in this area, which is related to the adopted strategy and consists in the following: what goals regarding the training and development of personnel need to be set to ensure the achievement of the goals of internal business processes, client and financial goals?

Obviously, if an organization has a long-term goal related to achieving outstanding financial results, then first of all it is necessary to train personnel and develop their professional skills in such a way that they are able to organize internal business processes that allow them to produce products and provide services that will be appreciated by the clients.

At the same time, it must be remembered that the very process of developing the personnel training and development component of the balanced scorecard clarifies the strategic goals of personnel training and development and determines the critical parameters for their

achievement, and the strategic goals included in the personnel training and development component of the BSC are largely specific and individual for each organization in specific conditions of place and time, they cannot be replaced by others. They make it possible to translate the personnel training and development component of the general strategy, that is, the personnel training and development strategy, into a set of specific target formulations related to the personnel training and development component of the BSC.

In addition, it is necessary to pay attention to the fact that the strategic goals of personnel training and development and indicators that measure them determine the goals of internal business processes, client and financial goals and indicators that measure them.

An important point in determining the strategic goals of personnel training and development is the understanding of the new management philosophy regarding the contribution of each employee to the development of the organization (Kaplan & Norton, 1996). In modern conditions, the performance of the same work with constant productivity and efficiency can no longer satisfy the organization - it needs continuous improvement and movement forward. In other words, employees who deal directly with customers should not only answer their questions, but also actively offer new products and services, as well as give qualified advice. This requires such retraining of employees so that their creative capabilities are mobilized to achieve the strategic goals of the organization.

Despite the above specificity and individuality of the strategic goals of training and development of personnel for each organization in specific conditions of place and time, as an example of them, we will give a number of strategic goals of training and development of personnel, which are largely universal for all types of organizations, taking into account the allocation in the composition component of the training and development of BSC personnel, as noted earlier, people, information systems and organizational procedures:

- 1) implementation of retraining and development of creative abilities of employees to ensure the achievement of the strategic goals of the organization;
- 2) expanding the capabilities of information systems to a level that allows employees of the organization to receive the necessary comprehensive information about customers, internal business processes, as well as the financial consequences of their decisions;
- 3) ensuring the motivation of employees, delegation of authority to them and compliance of personal goals with corporate ones.

The implementation of retraining and development of the creative abilities of employees, allowing to ensure the achievement of the strategic goals of the organization, is necessary so that the employee can not only respond to the client's request, but anticipate his possible needs

and offer him the entire appropriate set of goods and services produced by the organization. All this implies a change in the roles and responsibilities of workers. Retraining and development of creative abilities of employees is a very important factor in achieving the strategic goals set in the components of internal business processes, client and financial, and should be considered from two positions: its required level and the percentage of employees who need it.

Expanding the capabilities of information systems to a level that allows employees of the organization to receive the necessary comprehensive information about customers, internal business processes, as well as the financial consequences of their decisions, is aimed at continuous improvement of all business organization processes and, first of all, concerns ensuring the achievement of strategic goals the client component and the component of the internal business processes of the BSC. Personnel in direct contact with customers need accurate and timely data on their interaction with the organization and must not only know what market segment each particular client currently occupies, but also have additional information about it to understand and anticipate its emerging needs. Operations workers need fast and accurate feedback on products or services delivered to support improvement programs and systematically work to reduce costs and improve the organization's business performance.

Ensuring the motivation of employees, delegation of authority to them and compliance of personal goals with corporate ones is focused on the internal climate of the organization, which creates conditions for the motivation and initiative of employees. It is obvious that qualified personnel with access to all the necessary information will be able to make a full contribution to the successful operation of the organization only if they are motivated, given freedom to make decisions, and there is also the possibility of bringing personal goals of employees in line with corporate strategic goals. goals.

Summing up this rather brief review of the strategic goals of training and development of personnel of the organization, it should be noted that the achievement of each subsequent strategic goal of training and development of personnel is largely facilitated by the achievement of previous strategic goals of training and development of personnel. In other words, a highly qualified professional who is able to use the information he needs, who is given the required freedom to make decisions, and who is personally interested in obtaining outstanding results as part of the implementation of the corporate strategy, has a real opportunity to get these results.

2. Building a strategic map staff training and development

The strategic goals of personnel training and development are not independent and isolated from each other, on the contrary, as mentioned above, they are closely related to each other and influence each other. Determining and documenting the cause-and-effect relationships between

individual strategic goals of personnel training and development is one of the main elements of the personnel training and development component of the balanced scorecard. The established cause-and-effect relationships reflect the presence of dependencies between individual strategic goals of personnel training and development. In the course of such work, the intuitive ideas of HR managers about the presence of cause-and-effect relationships between individual strategic goals are transformed into explicit ones and are reflected (documented) in strategic maps of personnel training and development.

The strategic map of personnel training and development is a graphic document that reflects the cause-and-effect relationships between individual strategic goals for the training and development of the organization's personnel. It has the form of a flowchart, in which the strategic goals of training and development of personnel are presented in the form of separate blocks, and the cause-and-effect relationships between them are in the form of arrows. The strategic map of personnel training and development is one of the components of the strategic map.

As an example, let's take a strategic map of personnel training and development, which reflects the relationship between the previously formulated three strategic goals of personnel training and development, which are largely universal for all types of organizations (Fig. 2).

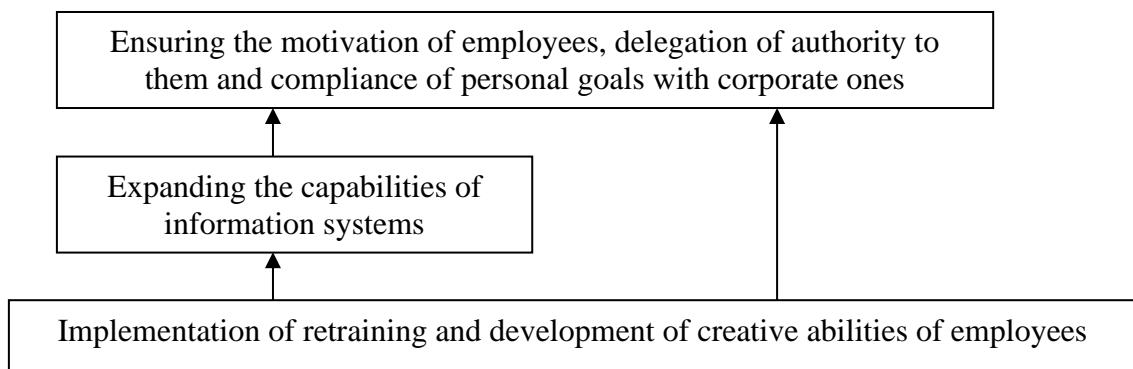


Fig. 2. An example of a strategic map of personnel training and development

The importance of building strategic maps of training and development of personnel for the formation of a component of training and development of personnel of the BSC is that they:

- reflect the interrelationships and dependencies between the individual strategic goals of training and development of the organization's personnel;
- explain the mutual effects arising from the achievement of the strategic goals of training and development of personnel;

- form in managers an understanding of the dependencies and the importance of individual strategic goals of training and development of personnel;
- contribute to a common understanding of the organization's personnel strategy;
- explain the importance of managerial indicators of personnel training and development;
- contribute to a better understanding and better communication of the strategic goals of training and development of the organization's personnel;
- contribute to the establishment of cooperation between the heads of various structural divisions of the organization related to the training and development of its personnel;
- create a model that explains the ways to achieve success in the field of training and development of the organization's personnel.

3. Selection of indicators for training and development of personnel

Completion of the construction of a strategic map of personnel training and development allows us to proceed to the selection of indicators for the component of personnel training and development of a balanced system. Personnel training and development indicators are necessary to clearly and unambiguously express the content of the strategic goals of personnel training and development, as well as to determine the degree of their achievement. By measuring the strategic goals of training and development of personnel, the development of the managed object in the planned personnel direction is ensured. In order to ensure an unambiguous understanding of the achievement of the set strategic goals of personnel training and development, it is recommended to use no more than two (in rare cases - no more than three, and in exceptional cases - no more than four) indicators for each of them.

Consideration of a sufficiently large number of preliminary indicators of training and development of personnel makes it possible to understand at an early stage which indicators should be included in the component of training and development of personnel in the BSC. In order for certain indicators of personnel training and development to be used in the personnel management system, their description (definitions, formulas, parameters) must be available. Existing training and development indicators for personnel should be subjected to a suitability check (eg data sources, frequency of measurements, availability of target values, etc.). As for indicators of training and development of personnel that are not available, the procedure for calculating their values should be worked out in advance.

As an example, we highlight some general indicators of personnel training and development that measure the three strategic goals of personnel training and development listed earlier (retraining and developing the creative abilities of employees to ensure the achievement of the strategic goals of the organization; expanding the capabilities of information systems to a level

that allows employees of the organization to receive the necessary comprehensive information about clients, internal business processes, as well as the financial consequences of their decisions; ensuring the motivation of employees, delegating authority to them and matching personal goals with corporate ones), and we will summarize them for convenience in Table. 2.

Table 2. Some general indicators of the training and development component of the BSC staff

Strategic goal staff training and development	Measuring indicators
Implementation of retraining and development of creative abilities of employees to ensure the achievement of the strategic goals of the organization	The degree of satisfaction of employees with their professional activities. Percentage of staff turnover of key personnel. Percentage of highly skilled workers. Efficiency of employees (labor productivity of employees, value added or profit per employee, salary return).
Expanding the capabilities of information systems to a level that allows employees of the organization to receive the necessary comprehensive information about customers, internal business processes, as well as the financial consequences of their decisions	The speed of receipt of complete and reliable information necessary to assess the position of customers in the market, understand and anticipate their needs. The speed of receipt of information from customers about the products or services provided. Percentage of required data received in real time through customer feedback channels. Percentage of employees who communicate directly with customers who have access to the required information online.
Ensuring the motivation of employees, delegation of authority to them and compliance of personal goals with corporate ones	The average number of accepted and implemented rationalization proposals per employee. The degree of uniformity and constancy of the reduction in the number of defects. The percentage of employees whose personal and goals and objectives are determined on the basis of the corporate BSC and comply with it. The level of interaction between individual employees and structural divisions of the organization among themselves.

Source: developed by the author

4. Determination of target values of personnel training and development indicators

After completing the selection of indicators for the training and development component of the balanced system, it is necessary to determine their target values. The fact is that only after setting the target value of the indicator of training and development of personnel, this or that strategic goal of training and development of personnel is considered to be fully described.

Target values for indicators of personnel training and development should be strict, but quite achievable.

From a methodological point of view, the determination of target values for indicators of training and development of personnel is carried out, as a rule, through preliminary development, followed by discussion and reaching agreement during the meeting. It can be combined with business plan modeling.

Nevertheless, in any case, it is necessary to observe the following principle: the balance of the strategic goals of personnel training and development should be reflected in the balance of the target values of the indicators describing them.

5. Development of strategic measures in the field of personnel training and development

Having determined the target values of indicators for the training and development of personnel in the BSC, one can proceed to the development of strategic measures in the field of training and development of personnel. Strategic activities in the field of personnel training and development are activities that are closely linked to the strategic goals of personnel training and development, which are defined for the personnel training and development component of the balanced scorecard. Strategic activities in the field of personnel training and development allow concretizing the strategic goals of personnel training and development and linking the personnel training and development strategy with the operational tasks of HR managers. Thus, the key idea of the personnel training and development component of the balanced scorecard is implemented - the translation of the personnel training and development strategy into specific actions for working with personnel. Therefore, the component of training and development of the personnel of the BSC of the organization begins to really act only after the implementation of strategic measures in the field of training and development of personnel.

The organization of professional retraining of employees in connection with the development of the production of new types of products or other events that are not related to operational activities in terms of training and development of personnel and require a significant amount of resources may appear as strategic measures in the field of personnel training and development. Such measures include, for example, the development of a long-term program and, on its basis, a set of specific actions for the professional retraining of workers associated with the production of a particular new type of product.

As a result, strategic activities related to personnel training and development become the basis for the allocation of funds as part of the implementation of the personnel training and development strategy. In other words, the definition of strategic activities in the field of training and development of personnel involves a comparison of ideas about the strategic goals of

training and development of personnel with the available resources and opportunities. Thus, the organization once again passes the test for the feasibility of the planned strategic goals of personnel training and development. Such work may entail a revision of the strategic training and development goals that were identified prior to the development of strategic training and development activities.

As a rule, no organization has sufficient resources and capabilities to implement all of the considered strategic activities in the field of training and development of personnel, which inevitably leads to the need for prioritization. In this situation, linking activities related to the training and development of personnel to the strategic system of training and development of personnel allows them to be assessed in terms of their contribution to the implementation of the developed personnel strategy. Such work facilitates consensus building on which strategic training and development activities, in terms of available resources and capacity, should be implemented first and which should be delayed.

It should also be noted that on the basis of the developed strategic measures in the field of personnel training and development, strategic budgets for personnel training and development are formed. Thus, the strategic planning of personnel training and development is linked with operational planning (primarily with budgeting).

The developed component of personnel training and development of the balanced scorecard can be presented in the form of a table (Table 3).

Table 3. The component of training and development of personnel of the organization's BSC

The key problem of the training and development component of the BSC personnel	Strategists the logical goal of staff training and development	Personnel training and development indicator	Target meaning	Strategic event in the field of personnel training and development
What training and development goals need to be set to ensure that internal business process, client and financial goals are achieved?				

Source: developed by the author

Components and procedure for conducting an applied strategic analysis of personnel training and development

Applied strategic analysis of personnel training and development as a type of applied strategic analysis is carried out according to the principle of deduction, which involves first studying the most general indicators of the BSC personnel training and development component, and then more specific ones.

The main components of the ASATPD are:

1. Analysis of the level of motivation of employees, the amount of authority delegated to them and the degree to which their personal goals correspond to corporate goals.
2. Analysis of the extent of expanding the capabilities of information systems.
3. Analysis of the quality of retraining and the level of development of creative abilities of employees.

The general procedure for conducting an applied strategic analysis of personnel training and development is based on the above principle of its implementation and the main components and is specified in the form of a flowchart (Fig. 3).

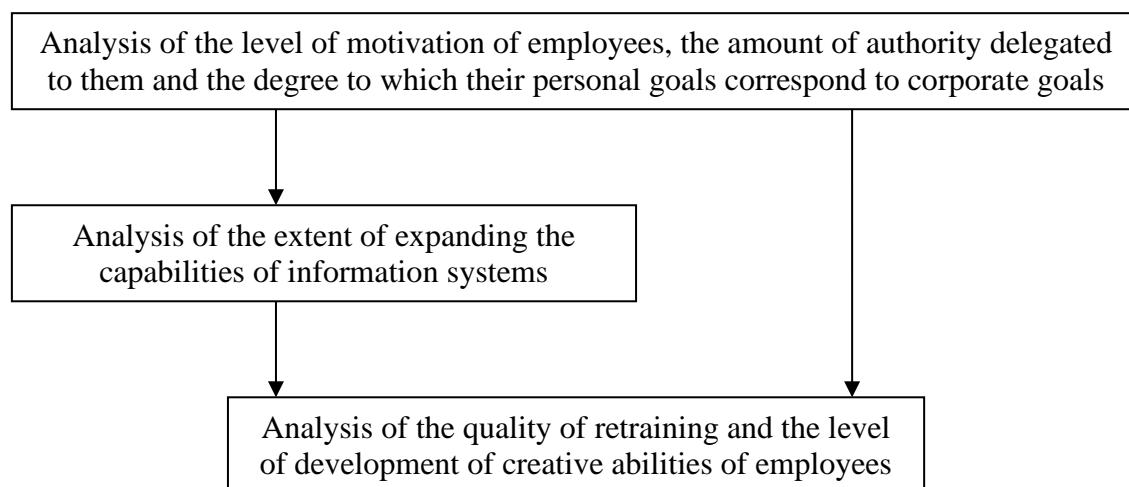


Fig. 3. The procedure for conducting applied strategic analysis of personnel training and development

As shown in fig. 3, the process of conducting an applied strategic analysis of personnel training and development begins with an analysis of the level of motivation of employees of the organization, the amount of authority delegated to them and the degree to which their personal goals correspond to corporate goals. Then the degree of expansion of information systems

capabilities is analyzed. In conclusion, an analysis is made of the quality of retraining and the level of development of the creative abilities of employees.

In more detail, the process of conducting the ASATPD can be reflected by presenting through the prism of its most important tasks: comparative assessment, diagnosing deviations and predicting the values of indicators of the training and development component of the BSC personnel (Fig. 4).

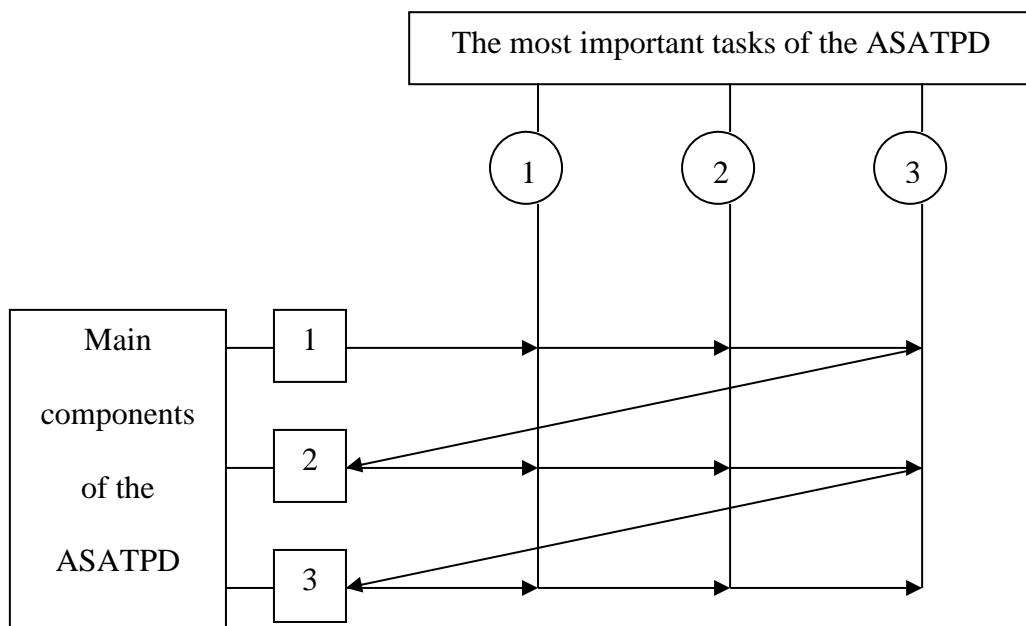


Fig. 4. Flowchart of the process of conducting an applied strategic analysis of personnel training and development

As shown in fig. 4, taking into account the division of the indicators of the BSC personnel training and development component into productive and factorial ones, the applied strategic analysis of personnel training and development begins with a comparative assessment of the values of performance indicators that characterize the level of motivation of employees, the amount of authority delegated to them and the degree of compliance of their personal goals with corporate goals, and ends with forecasting the values of factor indicators of the quality of retraining and the level of development of the creative abilities of employees.

In addition, if we define the “intersections” of the groups of analyzed indicators of the BSC personnel training and development component and the most important tasks of applied

strategic analysis of personnel training and development as a kind of elements, then a matrix can be formed from these elements of the ASATPD (Table 4).

Table 4. Matrix of elements of the ASATPD

Main components ASATPD (i)	Key tasks (j)_		
	Comparative assessment of the values of the indicators of the component of training and development of personnel of the BSC (1)	Diagnosis of deviations in the values of indicators of the component of training and development of personnel BSC (2)	Forecasting the values of indicators of the personnel training and development component SSP (3)
Analysis of the level of motivation of employees, the amount of authority delegated to them and the degree to which their personal goals correspond to corporate goals (1)	Comparative assessment of the values of indicators of the level of motivation of employees, volume delegated to them authority and the degree to which their personal goals are aligned with corporate goals.	Diagnosis of deviations in the values of indicators of the level of motivation of employees, volume delegated to them authority and the degree to which their personal goals are aligned with corporate goals.	Forecasting the values of indicators of the level of motivation of employees, the amount of authority delegated to them and the degree of compliance of their personal goals with corporate goals.
Analysis of the degree of empowerment of information systems (2)	Comparative evaluation of the values of indicators of the degree of expansion of the capabilities of information systems.	Diagnosis of deviations in the values of indicators of the degree of expansion of the capabilities of information systems.	Forecasting the values of indicators of the degree of expansion of the capabilities of information systems.
Analysis of the quality of retraining and the level of development of creative abilities of employees (3)	Comparative assessment of the values of indicators of the quality of retraining and the level of development of the creative abilities of employees.	Diagnosis of deviations in the values of indicators of the quality of retraining and the level of development of the creative abilities of employees.	Forecasting the values of indicators of the quality of retraining and the level of development of the creative abilities of employees.

Source: developed by the author

Denoting the elements of the matrix through s_{ij} ($i = 1, 2, 3; j = 1, 2, 3$), it is possible to mathematically describe the content of the SAORP using the following formula:

$$S = \sum_{i=1}^3 \sum_{j=1}^3 s_{ij} \quad (1)$$

where S is the sum of all elements of the ASATPD;

i – index designation of the main components of ASATPD: 1 – analysis of the level motivation of employees, the amount of authority delegated to them and the degree compliance of their personal goals with corporate goals, 2 – analysis of the degree empowerment of information systems, 3 – quality analysis retraining and the level of development of creative abilities of employees;

j is the index of designation of the most important tasks of the ASATPD: 1 is a comparative assessment of the values indicators of the component of training and development of BSC personnel, 2 – diagnostics deviations in the values of indicators of the personnel training and development component BSC, 3 – predicting the values of indicators of the component of learning and development BSC staff.

According to the point of view of the author of this article, the matrix (Table 4) and formula (1) can be considered, respectively, as a matrix and mathematical model of the ASATPD, illustrating its composition and, accordingly, its economic content in the most visual form.

Examples of the analyzed performance and factor indicators for each of the main components of the applied strategic analysis of personnel training and development are given in Table. 5.

Table 5. Examples of analyzed indicators for the main components of the ASATPD

The main component of the ASATPD	Analyzed indicators	
	Productive	Factorial
1. Analysis of the level of motivation of employees, the amount of authority delegated to them and the degree to which their personal goals correspond to corporate goals	The average number of accepted and implemented rationalization proposals per employee. The degree of uniformity and constancy of the reduction in the number of defects. The level of interaction between individual employees and structural divisions of the organization among themselves.	Amount of workers. The number of accepted and implemented rationalization proposals. The number of defects. The percentage of employees whose personal and goals and objectives are determined on the basis of the corporate BSC and comply with it.
2. Analysis of the degree of expansion of the capabilities of information systems	The speed of receipt of complete and reliable information necessary to assess the position of customers in the market, understand and anticipate their needs. The speed of receipt of information from customers about the products produced.	Percentage of employees who communicate directly with customers who have access to the required information online. Percentage of required data received in real time through customer feedback channels.

3. Analysis of the quality of retraining and the level of development of creative abilities of employees	Percentage of staff turnover of key personnel. The share of highly qualified workers in their total number. Share of labor costs in sales revenue. Labor productivity of workers. Added value per worker. Net income per employee.	The degree of satisfaction of employees with their professional activities. The average time spent on professional retraining and advanced training of one employee.
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Source: developed by the author

DISCUSSION

The scientific results presented in this article related to the development of the concept of applied strategic analysis as a tool for studying the strategic aspects of training and development of personnel carried out by the organization and their management based on the component of training and development of personnel of the BSC, as its author believes, have no analogues and therefore can be considered as fundamentally new knowledge on this issue.

Let's compare the scientific results obtained by the author with the existing developments on the problem considered in the article, described earlier in the section "Previous research (Present-day state of the problem)" and concerning the use of analysis in relation to the balanced scorecard as a whole, that is, without focusing on its component of staff training and development, and in the field of analysis of training and development of personnel, not involving the use of the BSC.

Based on the previously formulated results of summarizing the points of view of the most famous researchers who assume the use of a balanced scorecard in the process of analyzing the organization's activities, it can be seen that they do not have a clear, well-defined concept for conducting analysis in the BSC as a whole, as well as within its individual components, including the component of personnel training and development. There are only certain general contours of the content and order of such an analysis.

The author of this article offers a specific, well-defined conceptual approach to conducting an applied strategic analysis of personnel training and development as a type of applied strategic analysis developed by him earlier (Krylov, 2010, 2013a, 2013b, 2014c), thereby improving the effectiveness of strategic management activities of the organization in terms of training and development of personnel. The article also reflects the main methodological aspects of the applied strategic analysis of personnel training and development developed by the author (its tasks are clearly reflected, recommendations are formulated for assessing the significance of

deviations of the actual values of the BSC indicators characterizing the training and development of personnel from their target values, a graphical model of factor analysis of the arisen deviations, the components are disclosed and a block diagram of the ASATPD is given), as well as examples of the analyzed effective and factor indicators of the BSC personnel training and development component.

According to the author, the construction of the so-called analytical indicators based on the BSC indicators is inappropriate, since the method of calculating them by the weighted average is quite subjective, contributing not to an increase, but rather to a decrease in the accuracy of the results of the analysis.

Summarizing the above arguments, it should be noted that the author's vision and solution of the problem considered in the article is more meaningful, specific, illustrative and thoughtful compared to other researchers identified above, whose opinions were given in this article.

As for the analysis of training and development of personnel, which does not involve the use of a balanced scorecard, then, as noted earlier, as a tool for a comprehensive study of the totality of processes carried out by the organization of training and development of its personnel as a set of processes of retraining and development of creative abilities of employees, allowing to ensure achievement of the strategic goals of the organization; expanding the capabilities of information systems to a level that allows employees of the organization to receive the necessary comprehensive information about customers, internal business processes, as well as the financial consequences of their decisions; to ensure the motivation of employees, the delegation of authority to them and the compliance of personal goals with corporate ones, it is essentially absent. At the same time, the elements of the analysis of personnel training and development are usually considered partially as part of the analysis of the organization's labor resources (the availability of them and their efficiency of use). In this case, the analysis of the state and use of information systems is usually carried out as part of the analysis of fixed assets (funds). As a result, this kind of analysis is limited and uninformative to ensure effective strategic management of staff training and development.

CONCLUSIONS

Having outlined the concept of applied strategic analysis of personnel training and development (ASATPD), the author of this article considers it necessary to formulate the following conclusions:

- applied strategic analysis of personnel training and development, being one of the types of applied strategic analysis, is a new and quite effective tool for studying the strategic aspects

of an organization's activities related to personnel training and development, forming analytical support for its strategic management in terms of personnel training and development;

- the methodological basis of the ASATPD is the concept of a balanced scorecard and the concept of applied strategic analysis;
- applied strategic analysis of training and development of personnel involves a comparative assessment, diagnosis of deviations and forecasting of the values of the indicators of the component of training and development of personnel of the BSC of the organization in the context of their strategic goals;
- ASATPD includes an analysis of the level of motivation of employees, the amount of authority delegated to them and the degree to which their personal goals correspond to corporate goals, an analysis of the degree of expansion of the capabilities of information systems, as well as an analysis of the quality of retraining and the level of development of the creative abilities of employees;
- applied strategic analysis of personnel training and development begins with a comparative assessment of the values of performance indicators that characterize the level of motivation of employees, the amount of authority delegated to them and the degree of compliance of their personal goals with corporate goals, and ends with predicting the values of factor indicators of the quality of retraining and the level of development of creative abilities of employees;
- the results of the ASATPD can be used in the development of long-term, medium-term and short-term management decisions in the field of the organization's activities related to the training and development of its personnel.

DIRECTIONS FOR FURTHER RESEARCH

The conceptual foundations of the applied strategic analysis of personnel training and development considered in this article as a new tool for a comprehensive study of their strategic aspects based on the personnel training and development component of the balanced scorecard determine only some general outlines of the ASATPD as a new direction of scientific research and practical activity, being a kind of theoretical basis for its further development, primarily in terms of practical use.

The priority areas for further development of applied strategic analysis of personnel training and development include:

- detailing and concretization of the ASATPD methodology in relation to the indicators of individual stages and strategic goals of activities related to the training and development of the organization's personnel;
- development of ASATPD methodologies for individual companies belonging to various sectors of the economy;
- extension of the ASATPD to the indicators of current activities related to the training and development of personnel, since they are derived from the indicators of the component of training and development of personnel of the BSC;
- development of economic and mathematical models and computer programs that allow the use of ASATPD in practice in the process of managing the processes of training and development of personnel.

REFERENCES

- Barilenko, V. I. (2016). *Kompleksniy analiz khozyaystvennoy deyatelnosti [Integrated Analysis of Economic Activity]*. Moscow: Yurait Publ.
- Boronenkova, S. A. & Melnik, M. V. (2016). *Kompleksnyi ekonomicheskiy analiz v upravlenii predpiyatiyem [Integrated Economic Analysis in Enterprise Management]*. Moscow: Forum, NITS Infra-M Publ.
- Brown, M. G. (2007). *Beyond the Balanced Scorecard. Improving Business Intelligence with Analytics*. New York: Productivity Press.
- Friedag, H. R. & Schmidt, W. (2002). *Balanced Scorecard: Mehr als ein Kennzahlensystem*. Berlin: Haufe Mediengruppe.
- Horvath & Partners. (2004). *Balanced Scorecard Umsetzen*. Stuttgart: Schaeffer-Poeschel Verlag GmbH.
- Kaplan, R. S. (2005). How the Balanced Scorecard Complements the McKinsey 7-s Model. *Strategy and Leadership*, 33(3), 41-46.
- Kaplan, R. S. & Norton, D. P. (1992). The Balanced Scorecard: Measures That Drive Performance. *Harvard Business Review*, 70(1), 71-79.
- Kaplan, R. S. & Norton, D. P. (1993). Putting the Balanced Scorecard to Work. *Harvard Business Review*, 71(5), 134-142.
- Kaplan, R. S. & Norton, D. P. (1996a). *The Balanced Scorecard: Translating Strategy into Action*. Boston: Harvard Business School Press.
- Kaplan, R. S. & Norton, D. P. (1996b). Using the Balanced Scorecard as a Strategic Management System. *Harvard Business Review*, 74(1), 75-85.

- Kaplan, R. S. & Norton, D. P. (2001). *The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Competitive Environment*. Boston: Harvard Business School Press.
- Kaplan, R. S. & Norton, D. P. (2003). *Strategy Maps*. Boston: Harvard Business School Press.
- Kaplan, R. S. & Norton, D. P. (2004). Measuring the Strategic Readiness of Intangible Assets. *Harvard Business Review*, 82(2), 52-63.
- Kaplan, R. S. & Norton, D. P. (2005). The Office of Strategy Management. *Harvard Business Review*, 83(10), 72-80.
- Kaplan, R. S. & Norton, D. P. (2006). *Alignment. Using the Balanced Scorecard to Create Corporate Sinergies*. Boston: Harvard Business School Press.
- Kaplan, R. S. & Norton, D. P. (2008). *The Execution Premium: Linking Strategy to Operations for Competitive Advantage*. Boston: Harvard Business School Press.
- Kaplan, R. S., Norton, D. P. & Rugelsjoen, B. (2010). Managing Alliances with the Balanced Scorecard. *Harvard Business Review*, 88(1), 114-120.
- Krylov, S. I. (2010). *Razvitiye metodologii analiza v sbalansirovannoi sisteme pokazatelei [Development of analysis's methodology in the Balanced Scorecard]*. Moscow: Finance and statistics.
- Krylov, S. (2013a). Applied Strategic Analysis as a New Instrument of Balanced Scorecard Comprehensive Research of the Organization Economic Activity. *Science Journal of Economics. Volume 2013*. Article ID sje-148, 13 Pages, doi: 10.7237/sje/148.
- Krylov, S. (2013b). Applied Strategic Analysis as Further Balanced Scorecard Concept Development. In *Proceedings of the 11th Eurasia Business and Economics Society (EBES) Conference*, Russian Acad. Sci. Inst. Econ. Ural Branch, Ekaterinburg, Russia, pp. 35-42.
- Krylov, S. (2014a). Applied Strategic Innovative Analysis as a Research Instrument of the Strategic Innovative Organization Activity Aspects. *International Journal of Economics, Finance and Management*, 3(2), 100-114.
- Krylov, S. (2014b). Applied Strategic Innovative Analysis: Theoretical Aspects. *European Journal of Business and Social Sciences*, 3(3), 113-133.
- Krylov, S. (2014c). Theoretical Aspects of Economic Balanced Scorecard Analysis. *Asian Journal of Finance & Accounting*, 6(1), 90-109. <http://dx.doi.org/10.5296/ajfa.v6i1.4821>
- Krylov, S. (2015a). Applied Strategic Analysis Concept Development: Financial Aspect. *European Journal of Accounting, Auditing and Finance Research*, 3(3), 30-54.
- Krylov, S. (2015b). Applied Strategic Financial Analysis within Strategic Management of Organization Finance. *European Journal of Business and Management*, 7(15), 1-16.

- Krylov, S. (2015c). Financial Analysis in Balanced Scorecard. *Journal of Global Economics, Management and Business Research*, 4(1), 1-14.
- Krylov, S. (2016a). Applied Customer Analysis Concept. *International Business Management*, 10(23), 5682-5694.
- Krylov, S. (2016b). Customer Analysis within Balanced Scorecard. *International Journal of Business and Management Review*, 4(10), 35-56.
- Krylov, S. (2017). Concept of the Applied Strategic Operational Analysis. *European Journal of Business and Management*, 9(19), 33-45.
- Krylov, S. (2019). Applied Strategic After-Sale Service Analysis as New Instrument to Research its Strategic Aspects. *European Journal of Business and Management*, 11(24), 54-67.
- Lyubushin, N. P. (2006). *Kompleksniy ekonomicheskiy analiz khozyaystvennoy deyatelnosti* [Integrated Economic Analysis of Economic Activity]. Moscow: UNITI-DANA Publ.
- Maisel, L. S. (1992). Performance Management: The Balanced Scorecard Approach. *Journal of Cost Management*, 6(2), 47-52.
- Niven, P. R. (2014). *Balanced Scorecard Evolution: A Dynamic Approach to Strategy Execution*. Hoboken: John Wiley & Sons, Inc.
- Olve, N.-G., Roy, J. & Wetter, V. (2000). *Performance Drivers: A Practical Guide to Using the Balanced Scorecard*. Chichester: John Wiley & Sons, Ltd.
- Rampersad, H. K. (2003). *Total Performance Scorecard: Redefining Management to Achieve Performance with Integrity*. New York, NY: Butterworth Heinemann.
- Savitskaya, G. V. (2013). *Ekonicheskiy analiz* [Economic Analysis]. Moscow: Infra-M Publ.
- Sheremet, A. D. (2005). *Teoriya ekonomicheskogo analiza* [Theory of Economic Analysis]. Moscow: Infra-M Publ.
- Sheremet, A. D. (2008). *Kompleksniy analiz khozyaystvennoy deyatelnosti* [Integrated Analysis of Economic Activity]. Moscow: Infra-M Publ.