

Article

Theoretical Aspects of the Analysis of Learning and Growth Based on a Balanced Scorecard

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Abstract:

Research background – Learning and growth is one of the essential tools that companies ought to use in today's market economy in order to ensure their sustainable development in the long-term and, consequently, to achieve their maximum market value.

Purpose – This article is predominantly of theoretical nature and considers the possibility of using the applied strategic analysis technique that was developed by the author to analyze learning and growth in the course of a study of strategic aspects of learning growth. The technique is based on the balanced scorecard system of the same name.

Design/methodology/approach – Methodologically, the study is based on Kaplan and Norton's balanced scorecard concept and the author's concept of applied strategic analysis.

Findings – It is shown that applied strategic analysis of learning and growth envisages comparative evaluation, diagnostics of deviations and predictions of the values of the balanced scorecard metrics of learning and growth in the dimension of strategic objectives. It includes analysis of the level of motivation in employees, the volume of authority delegation and whether their personal goals match company goals; analysis of the expansion capacity of information systems, and analysis of the quality of retraining and the creativity level of employees. The applied strategic analysis of learning and growth with comparative evaluation of the metrics of the level of motivation in employees, the volume of delegation to them and of the match between their personal and corporate goals, and concludes with a prediction of the values of factor measures of the quality of retraining and creativity development in employees.

Originality/value – The author comes to a conclusion that applied strategic analysis of learning and growth is a new and sufficiently effective instrument for studying the strategic aspects of companies' performance that is associated with the training and development of their personnel. The instrument provides analytical support to strategic management as regards personnel training and development in today's conditions. Its results might be useful when working out managerial decisions for the company's short-term, medium-term and long-term plans in the area of learning and growth.

Keywords: applied strategic analysis; balanced scorecard; learning and growth; personnel; management; company

INTRODUCTION

Personnel training and development is an essential tool that ensures companies' sustainable development in the long-term and helps them achieve their maximum market value in today's economy. As a perspective of the balanced scorecard, personnel training and development, or learning and growth, determines the infrastructure that needs to be created for the long-term growth and improvement. The strategic objectives of this perspective are a factor of the implementation of the plans set for the first three perspectives of the balanced scorecard: those of internal processes, customer perspective, and financial.

Learning and growth, including career growth, rests on three pillars: people, IT systems, and organizational procedures. The first three perspectives of the balanced scorecard usually reveal a gap between the current capabilities of people, IT systems and organizational structure, and what is needed for a breakthrough. In order to bridge the gap, the company needs to invest in retraining of its staff, improvement of information systems and technology, and building a link between organizational structures and day-to-day operations (Kaplan & Norton, 1996).

It is also critical to not only assess the degree of implementation of a strategic decision on learning and growth, but also to identify causes for deviations (if they occur) and predict the future trajectory of the situation. This makes it relevant and timely to design and improve the appropriate analytical toolkit.

In this regard, the author considers it worthwhile to look at his earlier developed solution for applied strategic analysis as an analytical support tool for strategic management of learning and growth.

PREVIOUS RESEARCH

Before giving an outline of the author's contribution to solving the problem considered in this article, the current state of the problem that has been reflected in the works by arguably the most notable and authoritative scholars and experts will be discussed in brief. Their views on the problem can be divided into two groups:

- 1) the ones that imply the use of the balanced scorecard (BSC) method;
- 2) the ones that do not involve the use of the balanced scorecard method.

It should be noted though that researches whose views belong to the first group (for example, R.S. Kaplan and D.P. Norton, M.G. Brown, H.K. Rampersad, H.R. Friedag and W. Schmidt, N.-G. Olve, J. Roy and V. Wetter, experts from Horvath & Partners) usually focus on the use of analysis in application the BSC as a whole, including the learning and growth perspective.

Summing up their views (Kaplan & Norton, 1996; Brown, 2007; Rampersad, 2003; Friedag & Schmidt, 2002; Olve, Roy & Wetter, 2000; Horvath & Partners, 2004), we came up with the following observations:

- the purpose of analysis that is based on the balanced scorecard method is to measure the success of the company's strategy and to ensure the alignment between the balanced scorecard and the evolving environment;
- such analysis detects deviations between the actual values of the BSC metrics and their target values, identifies the causes of such deviations and determines the degree of criticality of the deviations for the company's structural units;
- additionally, in the course of analysis it is possible to study so-called analytical (comprehensive) performance indicators, including staff utilization, that are calculated as weighted means on the basis of more specific BSC metrics and are graded on a 100-point scale;
- among the outcomes of balanced scorecard analysis is a plan of actions that need to be implemented to increase the company's productivity or keep it at its present level, and the continuous level of learning that helps the organization to know itself better.

Among the researchers belonging to the second group (those who do not use the balanced scorecard technique) there are many representatives of a scientific school of the economic analysis of company performance that emerged in the Soviet Union and further developed in a number of post-Soviet countries.

The most renowned representatives of the school are one of its founders, A.D. Sheremet (Sheremet, 2005), 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 is worth noting that the researchers mentioned above do not differ much in their conceptual interpretation of economic analysis of company performance. In the context of economic analysis of company performance, no consideration is given at all either to analysis of personnel learning and growth as a combination of processes of personnel retraining and creativity growth in employees that enable the company to reach its strategic goals; or the processes of expanding the capabilities of information systems to a level that would enable employees to get complete essential information about customers, internal business processes and financial implications of their decisions; or motivation and delegation and the alignment between their personal goals and those of the company. Usually these aspects are partially explored as part of the analysis of labor resources in an organization (availability of labor resources and efficiency of utilization). Analysis of the condition and utilization of information systems is usually performed as part of fixed assets analysis.

METHODOLOGY

The methodological framework of the study is built upon two concepts:

- 1) the balanced scorecard, or BSC;
- 2) applied strategic analysis, or ASA.

The balanced scorecard as an analytical instrument for strategic management was developed by American scholars R.S. Kaplan and D.P. Norton in the early 1990s (Kaplan & Norton, 1992). The concept was further elaborated by the original authors (Kaplan & Norton, 1993, 1996, 2001, 2005, 2006, 2008; Kaplan, Norton & Rugelsjoen, 2010) and a number of other economics scholars (Brown, 2007; Friedag & Schmidt, 2002; Horvath & Partners, 2004; Maisel, 1992; Niven, 2014; Olve, Roy & Wetter, 2000; Rampersad, 2003). It has also been successfully tested in practice. Today, the BSC is regarded as one of essential and sufficiently effective means of strategic management in a company.

In general terms, the balanced scorecard can be defined as a composite of parameters that describe a company's performance in today's market economy. The prime objective of the balanced scorecard is to transform corporate strategy into concrete tangible goals, metrics and, eventually, activities. BSC metrics are constructed on the basis of each company's mindset and strategic goals and are, therefore, company-specific. At the foundation of the balanced scorecard are causal relationships, factors of successful outcomes and links with financial metrics. The balanced scorecard covers four key interrelated areas: finances, customer relationships, internal processes, and learning and growth. They are viewed through the lens of key problems, strategic goals, indicators and key values, as well as strategic efforts.

The development of the concept of applied strategic analysis was prompted by the need to increase the efficiency of strategic management amid the challenges of the modern market economy through provision of enhanced information and analytical support. This implies further development of the theory, methodology and methods of analysis of the strategic aspects of corporate performance as a whole, going further to, at least, the level of financial analysis that is a fairly effective instrument for examining the financial aspects of a company's performance on the basis of financial indicators.

Considered as a sustaining function of strategic management, ASA implies a comprehensive study of the strategic aspects of a company's economic performance on the basis of the balanced scorecard metrics (Krylov, 2013, 2014).

The objective of applied strategic analysis is to build a system of analytical support for strategic decision making.

Being based on the BSC that is always company-specific, ASA cannot have a standardized methodology. Its methods, too, are always company-specific.

ASA uses deductive reasoning that starts with the examination of the most general BSC metrics and moves on to its more specific measurements. This principle determines the general sequence of applied strategic analysis in the four key areas: financial indicators, analysis of customer relationships, analysis of business processes indicators, and analysis of personnel learning and growth.

While incorporating more specific actions, each of the areas of applied strategic analysis – financial, customers, internal processes, and learning and growth – is interpreted from the perspective of the key ASA objectives – those of comparative evaluation, diagnostics and prediction. Applied strategic analysis, therefore, starts with a comparative evaluation of financial metrics and ends with a prediction of the values of learning and growth metrics.

The areas of ASA mentioned above can evolve into standalone fields: applied strategic financial analysis, applied strategic analysis of customer relationships, applied strategic analysis of internal processes, applied strategic analysis of learning and growth. At the same time, applied strategic analysis of internal processes will include strategic analysis of after-sales service, applied strategic operational analysis and applied strategic innovation analysis.

When looking into the depth of applied strategic analysis as a fairly complex economic category, the author of the present article considered the above listed fields of ASA in his previous works (Krylov, 2014, 2015, 2016, 2017, 2019), one exception being applied strategic analysis of learning and growth (ASALG), which is the subject of this article.

RESULTS

The concept and essence of applied strategic analysis of learning and growth

Applied strategic analysis of personnel learning and growth is a type of applied strategic analysis that is aimed at conducting a comprehensive study of the strategic aspects of a company's learning and growth activities on the basis of a balanced scorecard for learning and growth. It can also be viewed as a support function for strategic management of staff learning and growth.

The subject of ASALG are learning and growth metrics within the balanced scorecard and factors that determine them; the object of applied strategic analysis of learning and growth are the strategic aspects of the company's activities in the field of staff learning and growth.

Applied strategic analysis of learning and growth is conducted to build up analytical support for strategic decision-making in the field of staff learning and growth.

In order to reach the above goals, the key tasks of applied strategic analysis of learning and growth need to be performed. Similarly to applied strategic analysis as a whole, these are comparative evaluation, diagnostics of BSC metric deviations, and prediction of BSC metric values. The essential tasks of applied strategic analysis of education and growth that are mentioned above are closely intertwined as every task unrolls from the preceding one: diagnostics of BSC indicator variances relies on the results of their comparative evaluation, whereas predictions of metric values are produced with the results of deviation diagnostics taken into account.

The comparative assessment of the values of learning and growth indicators implies that their actual values are compared against their target values, the absolute and relative (percentage) deviation and qualitative assessments of these deviations are obtained. The latter evaluation largely depends on their size (Table 1).

Table 1. An example of qualitative assessment of deviations of actual values of BSC metrics for learning and growth from their target values

Deviation of actual values of BSC metrics for learning and growth from target values, %	Qualitative assessment of deviation of actual BSC metrics for learning and growth from target values
Under 1	Insignificant
From 1 to 5	Significant
From 5 to 10	Substantial
From 10 to 20	Serious
20 and above	Very serious

Source: designed by the author

The diagnostics of the deviations of BSC metric values for learning and growth is based on cause-and-effect relationships that pull together balanced scorecard metrics, including those for learning and growth, forming a balanced mix of general performance indicators and factors that determine them (performance factors).

In the course of the diagnostics of the deviations of learning and growth metrics within the BSC, performance factors are identified that have the biggest impact on general performance indicators of learning and growth, and their values are calculated using appropriate methods of factor analysis. The calculation results are used for drawing relevant results.

A factor model of BSC indicators for learning and growth includes performance indicators for learning and growth as the ultimate (most general indicators and one level of the factors that determine them – the factor indicators of education and growth within the BSC).

Predicting the values of BSC metrics for learning and growth aims to set and adjust (in case of objective circumstances) target values of BSC metrics for learning and growth and to draw specific tracks to reach the targets set, or to devise measures for eliminating the emerging deviations between the actual and target values of the BSC metrics for learning and growth in the future. Predictions are first produced for general (performance) metrics, and then the forecast values are used as the basis for predicting the values of factor indicators of learning and growth.

The aspects of ASALG as a type of applied strategic analysis include this strategic perspective, as well as tactical analysis, and operational analysis.

As part of the strategic aspect of the applied strategic analysis of learning and growth, the ultimate, or strategic values of the learning and growth metrics of the BSC are assessed, diagnosed and predicted for the timeframe of the strategy that is designed for staff learning and growth.

As part of the tactical aspect of ASALG, interim, or tactical values of the learning and growth metrics of the BSC are assessed, diagnosed, and predicted at the end of each year.

Within the framework of the operational aspect of the applied strategic analysis of education and growth, interim, or operational values of the education and growth metrics of the BSC are assessed, diagnosed, and predicted at the end of each month.

All aspects of the applied strategic analysis of learning and growth are interrelated and coordinated: the results of the analysis of the operational values of indicators of learning and growth influence their tactical values, while the results of the analysis of tactical values influence strategic values.

The methodological toolkit of ASALG consists of approaches and methods making it possible to solve the essential tasks of analysis and, therefore, to achieve its objectives. The main methodological tools of the applied strategic analysis of staff learning and growth as a type of applied strategic analysis are the method of absolute, relative and mean values, comparison, grouping, graphical and tabular methods, regression and correlation analysis, factor analysis, cluster analysis, and the expert judgement method.

Information base of applied strategic analysis of learning and growth

The information base of the applied strategic analysis of staff education and growth is the learning and growth perspective of the balance scorecard. It can be presented in a tabular form (Table 2).

Table 2. Learning and growth perspective of a company's BSC

Key problem of learning and growth within BSC	Strategic goal of learning and growth	Learning and growth indicator	Target value	Strategic metric in learning and growth
What goals in learning and growth need to be set to ensure that the objectives of internal processes, as well financial and customer relations objectives are reached?				

Source: compiled by the author

Components and sequence of ASALG

The applied strategic analysis of learning and growth as a type of applied strategic analysis uses the principles of deductive reasoning that imply an examination of general learning and growth indicators first, and then a study of more specific indicators.

The key components of the applied strategic analysis of learning and growth are:

1. Analysis of employee motivation, analysis of how much authority is delegated to employees and how their personal goals match those of the company.
2. Analysis of the degree of the capacity expansion of information systems.
3. Analysis of the quality of retraining and level of the creative development of employees.

The process of the applied strategic analysis of education and growth starts with the analysis of employee motivation, the analysis of the levels of motivation among employees, the amount of authority that is delegated to them and of how their personal goals match the corporate ones. After that, the expansion capacity of information systems is analyzed. Finally, analysis is performed of the quality of retraining and of the level of creativity in employees.

A more detailed presentation of the process of the applied analysis of education and growth is given in Table 3 from the perspective of the key tasks of its main components.

Table 3. Process of applied strategic analysis of learning and growth

Key components of analysis (i)	Essential tasks of analysis (j)		
	Comparative assessment of values of metrics of learning and growth BSC (1)	Diagnostics of deviations of values of metrics of learning and growth BSC (2)	Prediction of values of metrics of learning and growth BSC (3)
Analysis of employee motivation, analysis of how much authority is delegated to employees and how their personal goals match those of the company (1)	Comparative assessment of values of motivation metrics, authority delegation metrics, and indicators of the match between employees' personal and corporate goals	Diagnostics of deviations of values of motivation metrics, authority delegation metrics, and indicators of the match between employees' personal and corporate goals	Forecasting of values of motivation metrics, authority delegation metrics, and indicators of the match between employees' personal and corporate goals
Analysis of the degree of the capacity expansion of information systems (2)	Comparative assessment of values of degrees of capacity expansion of information systems.	Diagnostics of deviations of values of degrees of capacity expansion of information systems	Prediction of values of indicators of capacity expansion of information systems
Analysis of the quality of retraining and level of creativity in employees (3)	Comparative assessment of values of metrics of quality of retraining and creativity in employees	Diagnostics of deviations of values of metrics of quality of retraining and creativity in employees	Forecasting of values of metrics of quality of retraining and creativity in employees.

Source: compiled by the author

Table 3 shows that as the metrics of the learning and growth component of the BSC are divided into general performance metrics and factor metrics, the applied strategic analysis of education and growth starts with the comparative assessment of the values of general performance indicators describing the level of motivation in employees, the amount of authority that is delegated to them and the match between their personal goals and corporate ones. It ends with a forecast of the values of factor indicators of the quality of retraining and of the creativity level in employees.

Moreover, Table 3 can be considered as a matrix in which the points of intersection of the groups of the education and growth indicators within the BSC and the essential tasks of the applied strategic analysis of education and growth are defined as elements.

By labelling the matrix elements with s_{ij} ($i = 1, 2, 3; j = 1, 2, 3$), the following formula can mathematically describe the contents of the ASALG:

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

where S is the sum total of all the elements of analysis;

i indicates the main components of the analysis of learning and growth: 1 – analysis of motivation in employees, amount of delegated authority, and alignment between their personal and corporate goals, 2 is analysis of the degree of capacity expansion in information systems, 3 is analysis of the quality of retraining and level of creativity in employees;

j indicates the essential tasks of the analysis of learning and growth: 1 is comparative evaluation of the values of indicators of the BSC education and growth component; 2 is the diagnostics of the deviations of the values of indicators of the BSC education and growth component, 3 are predictions of the values of the BSC education and growth component.

Examples of the performance metrics and factors being analyzed for each of the key components of the applied strategic analysis of education and growth are summarized in Table 4.

Table 4. Examples of measurements of key components of applied analysis of education and growth

Key components of analysis	Metrics being analyzed	
	Performance metrics	Factors
1. Analysis of employee motivation, analysis of how much authority is delegated to employees and how their personal goals match those of the company	Average number of approved and implemented improvement suggestions per employee. Steady and regular pace of defect reduction. Level of interaction between employees and between structural units of the organization.	Number of employees. Number of approved and implemented improvement suggestions. Number of defects. Percentage of employees whose personal goals and objectives are determined on the basis of the corporate BSC and are aligned with it.
2. Analysis of degree of capacity expansion of information systems	Speed of delivery of full and plausible information for assessing customers' position on the market and for understanding and predicting their needs. Speed of delivery of customer feedback on products.	Share of customer service employees who have interactive access to the required information. Percentage of essential data that is delivered in real time more via customer feedback channels.

3. Analysis of the quality of retraining and level of the creative development of employees	Percentage of key staff turnover. Share of highly skilled employees among all staff. Share of wage costs in sales revenue. Workforce productivity. Added value per worker. Net profit per worker.	Employee satisfaction level. Medium time spent on professional retraining and development per employee.
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Source: compiled by the author

DISCUSSION

We shall compare the author's obtained results with the previous research findings outlined in the «Previous Research» section.

The above summary of other researchers' views that involve the application of the balanced score card method in the analysis of a company's performance shows that they lack a clear and structure concept of conducting BSC analysis as a whole as well as analysis within the framework of the BSC perspectives, including learning and growth. There are only rough guidelines as to the contents and the sequence of such analysis.

By contrast, the author suggests a concrete and structured conceptual approach conducting applied strategic analysis of personnel education and growth as a type of his earlier concept of applied strategic analysis (Krylov, 2013, 2014). It would enable a boost in the efficiency of strategic management in a company in the field of learning and growth. This article also covers the key methodological aspects of the applied strategic analysis of learning and growth and cites examples of performance and factor indicators of the learning and growth perspective of the BSC that can be analyzed. The author considers it inexpedient to construct so-called analytical indicators on the basis of the BSC indicators because the method of calculating them as a weighted average is rather subjective, which reduces rather than improves the accuracy of the analysis results.

As for the types of analysis of learning and growth that use the balanced score card method, the author considers them to be too limited and of little information value for the purposes of efficient strategic management of education and growth.

The author's vision of the problem being considered in this article is, therefore, more meaningful, concrete, descriptive and elaborate than the concepts in the studies referenced to above.

CONCLUSIONS

Having presented a concept of the applied strategic analysis of learning and growth, the author considers it relevant to set out the following conclusions:

- applied strategic analysis of learning and growth, which is a type of applied strategic analysis, is a new and fairly effective instrument for exploring strategic aspects of a company's activity that is associated with personnel

education and growth as it forms an analytical support framework for strategic management in learning and growth;

- the balanced scorecard concept and the concept of applied strategic analysis form the methodological basis of the applied strategic analysis of learning and growth;
- applied strategic analysis of learning and growth entails comparative evaluation, diagnostics of deviations and prediction of the values of metrics of the learning and growth perspective of a company's BSC in terms of their strategic targets;
- applied strategic analysis of learning and growth incorporates analysis of the employee motivation level, the volume of delegation, analysis of the expansion capacity of information systems, and analysis of the quality of retraining and the level of creativity in employees;
- applied strategic analysis of learning and growth starts with the comparative evaluation of the values of performance metrics describing the level of motivation in workers; the volume of authority delegated to them, and the correspondence between their personal and company goals. It finishes with predictions of the values of factor indicators of the quality of retraining and of the level of creativity in employees;
- the results of applied strategic analysis of education and growth can be used when working out managerial decisions of long-term, mid-term and short-term nature in the field of personnel education and growth.

FURTHER RESEARCH

The conceptual framework of the applied strategic analysis of learning and growth that has been considered in this article as a new tool for comprehensive research into the strategic aspects of learning and growth on the basis of the learning and growth perspective of the BSC defines general contours of such analysis as a new trend in research and practice while providing a theoretical base for its further development, especially from the point of view of its practical application.

Among the priority areas of further research in the field of the applied strategic analysis of learning and growth there could be:

- elaboration and clarification of the analysis methodology regarding specific stages and strategic objectives of learning and growth;
- development of analysis methodologies tailored to specific companies in various industries;
- expanding the applied strategic analysis of learning and growth onto indicators of current education and growth activities as they are derived from indications of the education and growth component of the BSC;
- development of mathematical models and software that would facilitate the use of applied strategic analysis in practice when managing learning and growth processes.

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