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Concept of the Applied Strategic Operational Analysis

Sergey Krylov
Academic Department of Accounting, Analysis and Audit, Ural Federal University,
19 Mira Street, Yekaterinburg 620002, Russian Federation

Abstract
The paper treats theoretical aspects of the applied strategic operational analysis based on the balanced scorecard operational element developed by the author and its likely application to research strategic organization operational activity aspects. The methodology of the research is the balanced scorecard concept as well as the author's applied strategic analysis concept. The applied strategic operational analysis is assumed to encompass comparative assessment, variances diagnostics and forecast of the balanced scorecard operational element within the strategic operational goals. Due goods delivery, manufacturing cost and products quality compliance with customer's demand are to be analyzed. The applied strategic operational analysis commences from the comparative assessment of the outcome due goods delivery indicators and is completed with the forecast of the products quality compliance with customers' demand indicators. The results can be applied for long-, middle- and short-term managerial decisions development in the field of an operational organization activity. The applied strategic operational analysis technique comprises methods of absolute, relative and average values, comparison, grouping, graphical and table methods, correlation-regression analysis, factoring analysis, cluster analysis, as well as expert evaluation method. The conclusion is drawn that the applied strategic operational analysis is a new and sufficiently effective tool to research strategic aspects of the organization operational activity and to form an analytical support for the strategic operational management in the present-day economic environment.
Keywords: applied strategic analysis, balanced scorecard, management, operations, organization
JEL codes: L29, M11, M41

1. Introduction

In present-day economic environment every organization (enterprise, firm, and company) acquires a unique set of business processes ensuring value creation for its customers, developing and retaining its customer base within the target market segment as well as satisfying the requirements of its share holders in terms of high financial profitability. Meanwhile, there is a certain value chain model comprising three successive internal business processes: innovative process, operational process and after-sales service (Kaplan & Norton, 1996a).

The author of the paper considers an operational process to be the basic one as it forms the basis of the continuing (core) operations and the organization performance and comprises production of goods and services and their delivery to its customers.

Ensuring high operational process efficiency by decreasing the cost of production, goods and services delivery raising thereby their competitiveness rate is recognized as an essential goal of the continuing (core) operations and overall performance of any organization in the long term.

The goal is certain to be reached within the outcome strategic organization operational process management. In addition, an extent of the strategic decision implementation in the field of the operations management is to be assessed as well as the causes of variances (if any) are to be found, and a further situation development is to be forecast; a development and improvement of the appropriate analytical instrumentation being drivers of future success.

In view of the mentioned above, the author of the paper seeks to consider his applied strategic analysis (ASA) based on the balanced scorecard (BSC) to be employed in the process of the analytical support development for the strategic operational activity management.

2. Previous Research (Present-Day State of the Problem)

Before discussing the author's research into the problem treated in the present paper we would like to cover its present-day statement in the relevant references by well-known scholars falling into two groups: those presuming balanced scorecard practical application and those denying it.

It should be noted, that the scientists of the first group focus, as a rule, on the balanced scorecard analysis as a whole rather than its operational element isolated.

Treating the analysis in terms of BSC as a whole Kaplan R.S. & Norton D.P. , the founders of the balanced scorecard concept, refer to the regular enterprise strategy analysis such mechanisms (instruments) as correlation analysis, scenarios and strategic initiatives analyses, reports with the examples, expert evaluation of independent specialists, and management games as well (Kaplan & Norton, 1996a). They believe that when a company management faces with the discrepancy between the actual BSC scores values and their target ones they ought to look at the company strategy since a well-established system of interrelated BSC scores enables business

strategy evaluation rather informally than statistically. As for operational process research Kaplan R.S. & Norton D.P. emphasize the importance to reduce a production cycle and raise its efficiency, improve product quality and cut production cost.

According to the specialists of Horvath & Partners the analysis exercised by the BSC scores is to cover the following basic elements (Horvath & Partners, 2004):

Evaluation of the strategic goals attainment basing on the actual BSC scores values;

Finding out the reasons of the actual BSC scores values variance from their target ones;

Definition of the variance impact arisen on the target BSC scores values;

Studying current situation in terms of the strategic events implementation;

Stipulation of the events to be likely implemented;

Finding structural enterprise divisions with significant variances from the target BSC scores values;

Determination of the arisen trends impact on the strategy implementation success;

Establishment of the analysis subject in terms of the strategy implementation state (a structural division manager proper or a team of experts).

M.G. Brown considers the analysis to be used for calculation and further research of the analytical BSC indicators, being some kind of "indicators" on the organization management board reporting the managers about their activity effectiveness (Brown, 2007). The analytical indicators differ from the majority organizations' balanced scorecard scores by aligning a certain BSC element (operational element included) and are added from the sub-indicators reflecting a certain organization activity direction. The sub-indicators are considered as lower level indicators that are frequently various variables of different measurement units. Each sub-indicator of the analytical indicator is provided with the weighed value depending on its efficiency, reliability and probability usefulness. The system based on the analytical indicators, under M.G. Brown, enables to evaluate the organization activity effectiveness more completely compared to the system based on the separate individually measured indicators. The analytical indicators are measured by means of the 100-scores scale, 100 scores being the top characteristics. Within the course of analysis based on the analytical indicators calculation results found are causations of their level or effectiveness trend. Emphasized is a reason having caused difficulties or lower effectiveness. Found are factors of good effectiveness and its improvements trends. The analysis outcome results in the plan of actions to be implemented for the effectiveness to be improved or retained at the level attained. Generally, it comprises specific tasks, list of individuals responsible for their fulfillment and deadlines. Obviously, such plans of actions are to be developed basing on the appropriate analytical information. As a rule, it is the manager responsible for the indicator decayed who is to develop the plan of actions.

In line with H.K. Rampersad the analysis is to evaluate what has been accomplished and what has not and to define an extent of the goals attainment (Rampersad, 2003). Depending on the extent of the goals reached and their compliance with the target ones either the balanced scorecard scores implementation process or the BSC itself can be corrected. The analysis is to facilitate the permanent BSC agreement with the changing environment creating a continued learning effect to ensure that the organization comprehends itself better. H.K. Rampersad considers the analysis undertaken at the level of the organization and its certain employees to facilitate an overall process of learning.

H.R. Friedag and W. Schmidt notice that the balanced scorecard analysis is to evaluate the scores with actual values deviating from the target ones. In the course of the analysis it is to be stated if the contingencies are present (or absent), if the employees cope with their commitments, if the plan is correct. It should be noted that the strategy implementation at the enterprise has to be discussed monthly (Friedag & Schmidt, 2002).

N.G. Olve, J. Royand and V. Wetter state obviating the need for continued measurement or analysis of overall BSC scores as an ideal management control comes to a relatively unsophisticated procedure of evaluating or monitoring dynamics of the generalized index strategy implementation (Olve, Royand & Wetter, 2000).

Having generalized the views of the researchers assuming application of balanced scorecard for an organization performance analysis mentioned above, the following items are italicized:

The aims of the analysis exercised by the balanced scorecard is to assess a successfulness of an organization strategy implementation and to match continuously the balanced scorecard with the changing environment;

The analysis is to determine the actual BSC scores values variances from those of the target ones, to find out their causes and to specify the organization divisions exhibiting larger variances;

The optional objective of the analysis is to research so called analytical (generalized) indicators of the organization performance efficiency calculated by weighted average of the particular BSC scores and evaluated by 100-scores scale;

The results of the analysis comprises a plan of the events to raise the organization performance efficiency or to sustain it at the level reached and a permanent effect of learning to ensure that the organization's self-understanding.

The second group of the researchers includes numerous scholars of the economic organization (company) performance analysis emerged in the Soviet Union and further developed in a number of the post-socialist

economics.

The school is represented by one of the founders, living today, A.D. Sheremet (Sheremet, 2005, 2008), 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 the researchers mentioned do not expose any conceptual differences in their approaches in terms of the overall economic organization performance analysis including operational process analysis as integrity of production process, goods and services delivery.

It is an operational process analysis that is treated by the scholars as production analysis and integrity (kind) of economic analysis or a complex analysis of company performance, the BSC application being ignored.

Regarding their view on the matter, the production analysis integrates such basic elements as analysis of organizational-technical level of production, production resources analysis, analysis of overall production and goods sold, as well as production cost analysis. The basic elements of the production analysis are further divided into smaller specific elements. The analysis of organizational-technical level of production, for instance, comprises analysis of production facilities, analysis of production methods, production organization analysis and labor organization analysis. The production resources analysis is divided into a fixed operating assets analysis, inventories analysis and labor analysis. The overall production and goods sold analysis implies a volume and product range analysis, a products lines analysis, a product quality analysis, an analysis of a production pace steadiness, a products dispatch and sales analysis, as well as finding out reserves for production and products sales growth. The production cost analysis comprises an overall production cost analysis, a products cost to sales ratio analysis, an analysis of individual items production cost, an analysis of direct and indirect costs, finding out products cost cut feasibility, and breakeven production analysis. The instrument for the productions analysis is a universal system comprising a few hundreds indicators with small corrections for the company performance industry features but for its strategic goals. For instance, a fixed operating assets effectiveness indicator is understood as sales to average assets cost ratio that of the material resources – material cost to sales ratio, labor – labor productivity.

3. Methodology of Research

The methodology of the research, the results being presented in the paper, is the balanced scorecard (BSC) concept and the applied strategic analysis (ASA) concept.

The balanced scorecard concept as an analytical instrument for strategic management was developed by American scientists Robert Kaplan and David Norton at the beginning of the 90s of the XX century (Kaplan & Norton, 1992, 1993). It evolved further in their works (Kaplan & Norton, 1996a, 1996b, 2001, 2003, 2004, 2005, 2006, 2008; Kaplan, Norton & Rugelsjoen, 2010), and those of other scientists studying economics (Brown, 2007; Friedag & Schmidt, 2002; Horvath & Partners, 2004; Maisel, 1992; Niven, 2014; Olve, Roy & Wetter, 2000; Rampersad, 2003), and was multiply tested. Today BSC is considered to be one of the essential and sufficiently effective facilities for strategic organization management.

It should be noted, that the main reason to develop BSC was a contradiction between contingencies aimed at setting up wider competitive opportunities and immobile accounting (financial accounting) system.

The balanced scorecard as a whole is understood as an aggregate of parameters featuring an overall organization performance in present-day market economy. It reflects a balance to be brought about between short-term and long-term goals, financial and non-financial scores, basic and auxiliary parameters, as well as internal and external factors of the organization economic activity.

The scores of the balanced scorecard are specially formed depending on the individual outlook and strategic goals of any particular organization. They represent a balance between external accounting data for the owners (shareholders), and customers, and internal characteristics of the most significant business processes, innovations, learning, and growth. That is the balance between the results of the organization performance reached and future growth. The system comprises a complex of objective quantitatively evaluated data and subjective somewhat arbitrary parameters of future growth.

The main goal of the balanced scorecard is to transform a company strategy into specific tangible objectives, scores, and end up with events.

The BSC scores are selected so that the organization managers and employees focus on the factors resulting in tremendous achievements of the organization market competitiveness. The BSC should be accessible in terms of information for the employees of all levels. The ‘front-line’ employees are to be well aware of the financial consequences of their decisions and actions. Meanwhile, the top managers must be committed to the long-term financial success.

The balanced scorecard is founded on the cause and effect links, results attain factors and their interrelation with financial scores.

The balanced scorecard encompasses four basic interrelated elements: finance, a customer, internal business processes ones as well as learning and personnel development element considered through the prism of key

problems, strategic goals, scores and their target values and strategic events as well.

The BSC scores enable to characterize comprehensively a performance of both commercial, government, and non-for-profit organizations, the scores being relatively few (about 25 scores in average, as a rule).

The development of the strategic applied analysis concept was caused by the need to enhance strategic management effectiveness in unhealthy conditions of the present-day market economy, to improve its information-analytical support, thereby stipulating an expediency of further evolution of theory, methodology and methods of the overall strategic organization performance aspects to the level of the financial analysis at least being a sufficiently effective research instrument of the financial aspects of the organization performance based on the financial indicators.

ASA, as a strategic management function, assumes an overall research of the strategic organization performance aspects based on the balanced scorecard (Krylov, 2010, 2013a, 2013b, 2014c).

Based on the balanced scorecard ASA, special for any particular organization, is unable to provide any standard methods. Thereby the ASA methods are special as well for any particular organization.

The goal of the applied strategic analysis implementation is to form analytical support for making strategic management decisions.

The essential ASA objectives are the following:

1. Comparative assessment of the BSC scores assumes comparison of their actual and target figures, determination of the balanced scorecard real and target figures variance and qualitative evaluation of the variances.
2. Diagnostics of the BSC scores variances enables to find out the results attaining factors having impact on the general or outcome BSC indicators and determine the variance value by means of the appropriate methods of the factoring analysis.
3. Balanced scorecard forecast of the purposeful nature implies a primordial determination and/or correction of the target BSC scores values and either determination of the specific ways of their attainment or the development of the events aimed at the elimination of the variance emerged between outcome and target BSC scores values in the future.

All the objectives are interrelated as each consecutive objective follows from the previous one: the diagnostics is exercised by the results of the BSC scores comparative assessment while their forecast takes into account the diagnostics results.

Three interrelated and agreed applied strategic analysis aspects stand out:

1) A strategic aspect proper, within the aspect evaluated, diagnosed and forecast are final BSC scores values for the time period of the developed strategy in effect, i.e. their strategic values;
2) A tactical aspect, within the aspect evaluated, diagnosed and forecast are interim BSC scores values by the end of the year, i.e. their tactical values;
3) An operational aspect, within the aspect evaluated, diagnosed and forecast are interim BSC scores values by the end of each month, *i.e.,* their operational values.

The results of the analysis of the on-line BSC scores values impact on their tactical values and the results of the tactical value analysis influence the strategic ones.

The basic ASA technique comprises methods of absolute, relative and average values, comparison, grouping, graphical and table methods, correlation and regression analysis, factoring analysis, cluster analysis, , as well as expert evaluation method.

The applied strategic analysis accomplished by deduction presumes, firstly, a research of the general BSC scores, then specific ones. The approach defines general sequence of the ASA analysis exercise according to the following leads: financial indicators analysis, customer indicators analysis, internal business-processes indicators analysis, training and personnel development indicators analysis.

The basic ASA leads, mentioned, can be transformed into specific ones such as applied strategic financial analysis, applied strategic customer analysis, applied strategic internal business-processes analysis, as well as applied strategic training and personnel development analysis. The applied strategic internal business-processes analysis is composed of the applied strategic after-sales service, applied strategic operational analysis and applied strategic innovative analysis.

When describing the ASA contents as a complex category of economics in his previous works the author assumed the applied strategic innovative analysis (ASIA) to be a kind of ASA presuming overall complex research of the strategic aspects of the organization innovative activity based on the innovative BSC's score (Krylov, 2014a, 2014b), the applied strategic financial analysis (ASFA) implying overall complex research of the organization financial position by the BSC's financial score (Krylov, 2015a, 2015b, 2015c) as well as applied strategic customer analysis (ASCA) enabling to research overall strategic aspects of the organization sales performance by its BSC's customer score (Krylov, 2016a, 2016b). In the present paper the author considers the following kind of ASA – an applied strategic operational analysis.

4. Results

4.1 Concept and Essence of the Applied Strategic Operational Analysis

An applied strategic operational analysis (ASOA), a kind of the applied strategic analysis, assumes a complex, comprehensive research of the strategic organization operational activity aspects basing on the continuing operations element of its balanced scorecard. It can also be taken as a facilitating function of the strategic operations management.

The ASOA subject refers to the BSC's operational element indicators and the factors specifying them while the object is strategic organization operational activity aspects.

The goal of the applied strategic operational analysis is to form an analytical support of making strategic decisions in the field of continuing operations management.

To attain the ASOA goal its most important objectives (analogous to the BSC ones) are to be reached, such as comparative assessment, diagnostics variances, and forecast of the balanced scorecard operational element.

All the objectives of the applied strategic operational analysis are closely interrelated since each subsequent objective follows from the previous one: the diagnostics of the operational BSC element indicators variances is exercised by the results of their comparative assessment and the indicators forecast are derived from their diagnostics variances results.

Comparative assessment of the balanced scorecard operational element implies a comparison of their real and target figures, finding absolute and comparative (in %) variances, their qualitative evaluation that depends largely on their value (Table 1).

Table 1. Exemplary Qualitative Evaluation of the Variance Characteristics of the BSC's Operational Element's Real and Target Figures

Real figure variances values of the BSC's operational element from the target ones, %	Qualitative evaluation of the BSC's operational element real figure from their target ones
Up to 1	Fairly small
From 1 to 5	Essential
From 5 to 10	Significant
From 10 to 20	Large
20 and higher	Very large

The diagnostics of the balanced scorecard operational element indicators variance is based on the cause and effect links combining BSC scores, the operational element included, into the balanced complex of the outcome (general) indicators and their specifying factors (results attaining factors).

In the course of diagnosing the balanced scorecard operational element indicators variances found are results attaining factors, which impact mostly the general or outcome indicators of the BSC operational element, and determined is its value by relevant factoring analysis. The conclusions are drawn by the results obtained.

It should be noted that the outcome operational indicators of more specific BSC elements (innovative element and personnel training and development) could be considered as factors determining factoring indicators variances of more general operational element. So, a factoring model of the BSC operational element indicators, a flowchart in the generalized form is presented in Figure 1 comprises the outcome BSC operational element indicators as final (the most general) ones and five levels of the defining factors:

1-st level factors: factoring BSC operational element indicator;
2-nd level factors: some outcome indicators of the BSC innovative element, personnel development and training;
3-rd level factors: some factoring indicators of the BSC innovative element, personnel training and development;
4-th level factors: some outcome indicators of the BSC personnel training and development;
5-th level factors: some factoring indicators of the BSC personnel training and development.

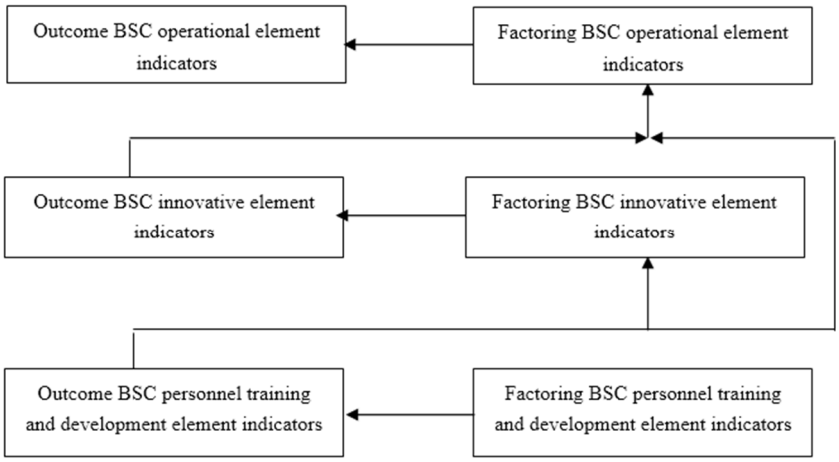

Figure 1. Flowchart of the factoring model of the BSC operational elements indicators in terms of its specific elements

The forecast of the BSC operational element indicators values is of the purposeful nature and implies either primordial establishment or adjustment of the target BSC operational indicators values (in case of the objective conditions) and determination of the specific methods of their attainment or the development of the events aimed at the elimination of the variances emerged between outcome and target values of the BSC operational element indicators in the future. In addition, the forecast commences with the general (outcome) indicators, the factoring ones being derived from them.

The aspects of the ASOA as a kind of ASA refer to a strategic aspect proper, as well as tactical aspect and operational aspect.

Within the scope of the strategic aspect of the applied strategic operational analysis evaluated, diagnosed and forecast are final BSC operational element indicators for the time-period of the developed strategy functioning, *i.e.,* their strategic values.

Within the frame of the tactical aspect of the applied strategic operational analysis evaluated, diagnosed and forecast are interim BSC operational element indicators by the each year end, *i.e.,* their tactical values.

Within the course of the operational aspect applied strategic customer analysis evaluated, diagnosed and forecast are interim BSC operational element indicators by the end of each month, *i.e.,* their operative values.

It should be noted, that all the ASOA aspects mentioned are interrelated and agreed: the results of the BSC operational element indicators values analysis make an impact on their tactical values and the results of the tactical values analysis – on the strategic ones.

The ASOA methodology instruments comprise an aggregate of techniques (ways, methods) to facilitate handling the essential problems of the analysis exercised and, respectively, its goal reached. The basic techniques of the applied strategic operational analysis include methods of absolute, relative and average values, comparison, grouping, graphic and table methods, correlation-regression analysis, factoring analysis, cluster analysis, and expert evaluation methods.

4.2 Information Base of the Applied Strategic Operational Analysis

The information ASOA base is the operational element of BSC formed in three steps:

4.2.1 Definition of the strategic operational goals of the operational process

The operations managers start the formation of the BSC operational element indicators from the definition of the strategic operational process goals and more specific individual aims adding it up.

It is based on the operational key problem agreed with the strategy adopted and implies the following: which goals, in terms of the operational process, should be set in order to reach the goals of after-sales service, customer and financial targets respectively?

Obviously, should a company be set a long-term goal of reaching outstanding financial results it is so to organize operational process as to manufacture goods and services to be appreciated by its customers.

It should be noted, that a process of balanced scorecard operational element development clarifies strategic operational goals and defines critical parameters of their attainment. Meanwhile, strategic aims included into the BSC operational element are special and separate for each organization within specific conditions of time and location and cannot be replaced. They enable to transfer the operational element of the overall strategy, *i.e.,* operational strategy, into a set of specific target definitions referred to the balanced scorecard operational element.

In addition, the strategic operational goals and their indicators measurements, on the one hand, specify those of the after-sales service, customer and financial elements, on the other, they are a basis of the definition of

the goals and measuring indicators of such BSC elements as innovative element and personnel training and development one.

In spite of the strategic operational process goals being special and separate for each organization within specific conditions of time and location we consider, *e. g.,* a number of strategic operational process goals universal in many respects for any type of organization taking into account two stages of the operational process mentioned above:

1. Production of goods and services;
2. Delivery of goods and services to customers.

At the stage of the production of goods and services it is expedient to establish such strategic goals as:
Ensuring quality of products and services in compliance with the customer demand;
Sustaining cost of production of goods and services at the customer affordability level.
The stage of the goods and services delivery to customers presumes one of the strategic goals attainment, *i.e.,* due goods and services delivery to customers within agreed time periods.
Completing an overview of the strategic organization operational process goal (strategic operational goals) we need to emphasize that the operational process is considered to be the second of the business processes, and the attainment of its strategic goals facilitates further internal business process goals to be reached, *i. e.,* the after-sales goals. .

4.2.2 Construction of the strategic operational process map

The strategic goals of the operational process are not irrelevant and isolated from each other, visa versa, as it has been mentioned above; they are interrelated having a strong interactive impact. To define and record the cause and effect links between separate strategic operational goals is one of the basic tasks of the BSC operational element. The cause and effect links defined reflect a strong relevance between separate strategic operational goals. In the course of the process an intuitive operational managers' insight on the cause and effect links between separate strategic goals of the operational process is transformed into actual ones that are reflected (documented) in the strategic map of the operational process.

The strategic operational process map is presented as a flowchart document reflecting the cause and effect links between separate strategic goals of the organization operational process. It is viewed as a flowchart, where the strategic goals of the operational process are presented as separate blocks and the cause and effect links between them as arrows. The strategic operational process map is one of the components of the strategic internal processes map and that of the overall strategic map.

As an example provided is a strategic operational process map reflecting an interrelation of its predefined strategic goals being largely universal for all types of the organizations (Figure 2).

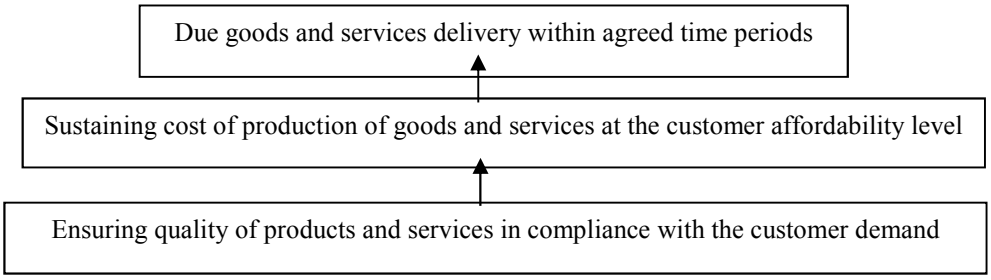

Figure 2. An example of the strategic operational process map

The usefulness of the strategic operational process maps construction to form the BSC operational element is essential as they:
Reflect interrelation and dependence between separate strategic goals of the organization operational process;
Explain reciprocal effects emerging from the strategic operational process goals attained;
Form executives' awareness of the interaction and importance of separate strategic operational process goals;
Facilitate a unified understanding of the organization operational strategy;
Explain the value of the managerial operational process indicators;
Enhance deeper understanding and better links of the strategic goals of the operational process;
Assist in building cooperation between the heads of various organization divisions implementing operational process;
Create a model explaining the ways to reach a success of the organization operational activity.

4.2.3 Selection of the operational process indicators

The construction of the strategic operational process map having been completed enables to select indicators of the BSC operational process element. The operational process indicators are needed to express precisely and unambiguously the content of its strategic goals and the level of their attainment. Measuring strategic goals of the operational process facilitates the development of the object managed in the selected operational direction. To ensure the unified understanding of the predefined strategic operational process goals to be reached each of

them is to comprise as many as two (rarely – three and/or four exclusively) indicators.

The consideration of a larger number of the preliminary operational process indicators enables to understand at an early stage which indicators the BSC operational process element has to encompass. To employ certain operational process indicators within an operations management system their description (in terms of definition, formulae and parameters) is to be available. The existing operational process indicators would have to be assessed in terms of their usefulness (e.g., data sources, indicators measurement frequency, target values availability, etc.) As for unavailable operational process indicators an accounting procedure of their values is to be worked out in advance.

Consider, as an example, certain general operational process indicators measuring their strategic goals mentioned above (ensuring quality of products and services in compliance with the customer demand; sustaining cost of production of goods and services at the customer affordability level; due goods and services delivery within agreed time periods) and bring them together into Table 2.

Table 2. Certain General Indicators of the BSC Operational Element Indicators

Strategic operational process goal	Measuring indicators
Ensuring quality of products and services in compliance with the customer demand	A number of defects per a million of finished goods and services provided. A number of goods returned, claimed warranties and guaranteed repairs. Finished goods. Waste materials.
Sustaining cost of production of goods and services at the customer affordability level	Variance of the standard (target) total cost of production of goods and services. Variance of the standard (target) total cost of production of various goods and services provided.
Due goods and services delivery within agreed time periods	Production cycle length and efficiency. Goods and services delivery error on the high side/on the lower side. A number of undue goods and services deliveries to customers. A share of undue deliveries within total goods and services deliveries to customers.

4.2.4 Definition of target operational process indicator values

As soon as the selection of the BSC operational process indicators has been completed their target values are to be defined. It should be noted that when the target value of every operational process indicator is stated one and another of its strategic goals are considered to be completely described. The target values of the operational process indicators must be rigorous but totally achievable.

The target values of the operational process indicators in terms of methods are determined by means of preliminary development further disputed and agreed at the meetings and combined with building of the business-plan model.

Nevertheless, the following principle has to be followed: a balance of the strategic operational process goals is to be reflected by the balance of the target values describing them.

4.2.5 Development of strategic operational events

Having completed the BSC operational element relevant strategic operational events may be developed. The strategic operational events are assumed as the events relevant to the strategic operational process goals determined for the balanced scorecard operational element. The strategic operational events enable to specify the strategic customer goals and link the operational strategy with operational managers' objectives. Thereby the key idea of the BSC operational element is realized, *i.e.,* a transfer of the operational strategy into specific operational management actions since the BSC operational element commences its performance as soon as the strategic operational events are implemented.

As regards the strategic operational events such operations may encounter as bringing out new product lines, improvement of the production process, or other events irrelevant to the customer operational activity demanding substantial resources.

Thus the strategic operational events result in the basis for the resources allocation within the operational strategy accomplishment. In other words, a definition of the strategic operational events implies a comparison of the anticipated strategic operational goals with the available resources and technical feasibilities. Thereby the organization is being tested for the strategic operational process goals feasibility. The work may entail a revision of the strategic operational process goals defined before the development of the strategic operational events.

As a rule, neither organization owns sufficient resources and capacities to implement all the strategic operational events considered resulting in setting up priorities. In this case a compliance of the operational events with the strategic system of the operational goals enables to assess their contribution in the implementation of the operational strategy developed. The work facilitates to reach a consensus concerning a sequence of the strategic operational events exercise in terms of the resources and capacities available, *i.e.* which are to be firstly

accomplished and which ones should be postponed.

Table 3. BSC Operational Element of Organization Development

Key issue of the BSC operational element	Strategic goals of the operational process	Operational process indicator	Target value	Strategic operational event
What goals concerning operational process are to be set to attain the following after-sales service, customer and financial goals, respectively?				

It should be noted, that strategic operational budgets are drawn up basing on the developed strategic operational events. Thereby the strategic operational planning is linked with the operational planning (first and foremost with budgeting).

The developed BSC operational element is presented by a table comprising key issue of the BSC operational element, strategic goals of the operational process, their indicators, their target values and strategic operational events (Table 3).

4.3 Components and sequence of the applied strategic operational analysis execution

The applied strategic operational analysis as a kind of the applied strategic analysis is carried out in compliance with the principle of deduction encompassing research firstly, general indicators of the balanced scorecard operational element then specific ones.

The basic components of the ASOA are the following:

1. Analysis of products due delivery.
2. Analysis of products manufacturing cost.
3. Analysis of products quality compliance with customer demands.

The overall sequence of the applied strategic operational analysis is built on the principle of the analysis mentioned above and its basic elements are specified as a flowchart (Figure 3).

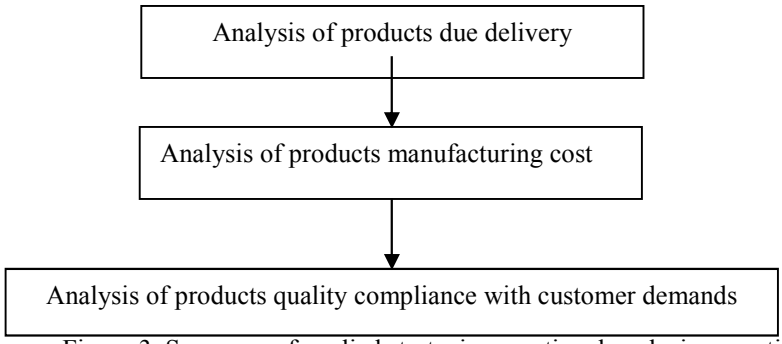

Figure 3. Sequence of applied strategic operational analysis execution

According to Figure 3 the sequence of the applied strategic operational analysis execution procedure is rigorous and commences from the analysis of products due delivery to customers. Then it is followed by the analysis of products manufacturing cost, both of overall cost and that of separate items. The procedure is finalized with the analysis of products quality compliance with customer demands.

A detailed process of the ASOA analysis execution can be presented through the prism of its main objectives, *i.e.,* comparative assessment, diagnostics of the variance and forecast of the BSC operational element (Figure 4).

The Figure 4 shows that considering the operational element indicators to be grouped into the outcome and factoring ones the applied strategic operational analysis starts with the comparative assessment of the outcome indicators characterizing a due products delivery and is completed with the forecast of the factoring indicators of a products quality compliance with customer demands.

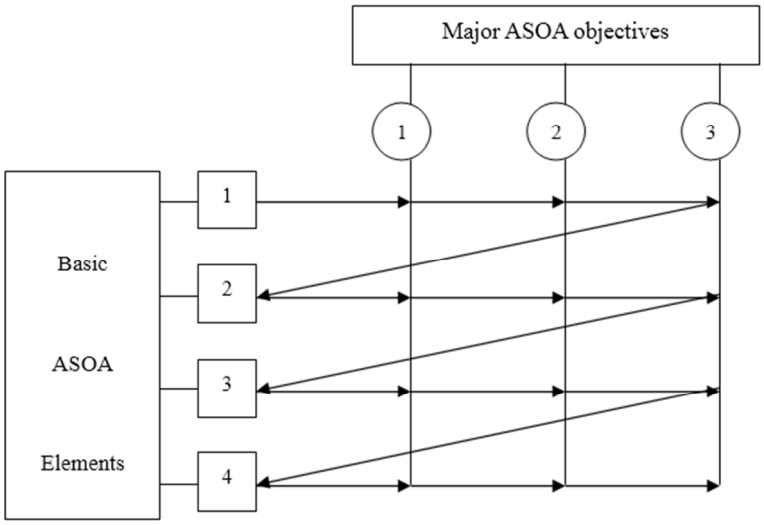

Figure 4. Flowchart of applied strategic operational analysis execution

In addition, assuming "intersection points" of the analyzed BSC operational element indicators and the major objectives of the applied strategic operational analysis, defined as some kind of the ASOA elements, we are able to build a matrix (Table 4).

Table 4. Matrix of the ASOA Elements

Basic ASOA elements (i)	Major ASOA objectives (j)		
	Comparative assessment of the BSC operational element indicator values (1)	Diagnostics of the BSC operational element indicator values variances (2)	Forecast of the BSC operational element indicator values (3)
Analysis of products due delivery (1)	Comparative assessment of the values of the products due delivery indicator.	Diagnostics of the products due delivery indicator values variances.	Forecast of the products due delivery indicator values.
Analysis of products manufacturing cost (2)	Comparative assessment of the values of the products manufacturing cost indicator.	Diagnostics of the products manufacturing cost indicator values variances.	Forecast of the products manufacturing cost indicator values.
Analysis of products quality compliance with customer demands (3)	Comparative assessment of the values of the products quality compliance with customer demands indicator.	Diagnostics of the products quality compliance with customer demands indicator values variances.	Forecast of the products quality compliance with customer demands indicator values.

Denoting elements of the matrix as pp_{ij} (i = 1, 2, 3; j = 1, 2, 3), enables to describe mathematically the ASOA contents by means of the formulae:

$$PP = \sum_{i=1}^{3} \sum_{j=1}^{3} pp_{ij} \qquad (1)$$

where PP is an amount of the ASOA elements;

i is an index of the ASOA elements: 1 is the analysis of products due delivery, 2 is the analysis of products manufacturing cost, 3 is the analysis of products quality compliance with customer demands;

j is an index of major ASOA objectives;: 1 is the comparative assessment of the BSC operational element indicator values; 2 is diagnostics of the BSC operational element indicator values variances; 3 is the forecast of the BSC operational element indicator values.

The matrix (Table 4) and the formulae (1) are considered as a matrix and mathematical model of ASOA, respectively, visualizing their composition and economic contents.

The examples of the outcome and factoring indicators analyzed per every complex ASOA element are presented in Table 5.

Table 5. Examples of Analyzed Outcome and Factoring Indicators per Each ASOA Element

Basic ASOA element	Indicators analyzed	
	Outcome	Factoring
1. Analysis of products due delivery	Production cycle efficiency. Goods and services delivery error on the high side/on the lower side. A share of undue deliveries within total goods and services deliveries to customers.	Production cycle length. Goods and services delivery deadlines. A number of undue goods and services deliveries to customers.
2. Analysis of products manufacturing cost	Variance of the standard (target) total products manufacturing cost values. Variance of the standard (target) different items manufacturing cost values.	The standard (target) total products manufacturing cost values. The actual value of the total products manufacturing cost. The standard (target) value of the different items manufacturing cost. The actual values of the different items manufacturing cost.
3. Analysis of products quality compliance with customer demands.	A number of defects per a million of finished goods. A number of faulty goods per a million of finished goods.	A number of defects per a million of finished goods found during manufacturing process. A number of goods returned, claimed warranties and guaranteed repairs. Wastes and losses caused by faulty goods.

5. Discussion

The author believes the results of the research, undertaken to develop the applied strategic analysis concept as the research instrument of the strategic organization operational activity aspects, based on the balanced scorecard operational element, to carry no analogy and to be considered as new and unique one.

Let us compare the results of the author's research obtained with those of the well-known scientists and specialists in the field discussed above in the section "Previous Research (Present-day state of the problem)". Some of them consider the BSC analysis application as a whole neglect its operational element, while others focus on the operational (performance) analysis obviating the need for the BSC utilization.

Generally speaking, a careful study of the relevant references of the authors assuming balanced scorecard application for an organization performance analysis has revealed an absence of as a clear well-defined BSC analysis exercise concept as a whole as that of its separate elements, an operational one, as well. Presented are some general desires concerning the contents and sequence of the analysis execution.

Meanwhile, the author of the paper proposes a specific well-built conceptual approach to the execution of the applied strategic operational analysis as a kind of the applied strategic analysis developed (Krylov, 2010, 2013a, 2013b, 2014c) thereby raising strategic organization operational performance efficiency. The paper clarifies his methodical aspects of the applied strategic operational analysis (specified are its objectives, formed are recommendations to evaluate significant variances of the outcome BSC operational indicator value from the target ones, presented is a graphic model of the factoring analysis of the variances arisen, described are the elements, and built is the ASOA flowchart), and provides the examples of the outcome and factoring indicators of the BSC operational element analyzed.

The author considers the building of so called analytical indicators by the BSC scores to be inexpedient as a technique of their computations at the weighted average is of the subjective nature and deteriorates the analysis results accuracy rather than improves it.

Generally speaking, the author's vision and solution of the problem treated in the paper is of more complete, detailed, well-thought and visualized character compared with those of other researchers' mentioned above.

The discussed above operational (performance) analysis, neglecting balanced scorecard application, is exercised by a somewhat universal system of a few hundreds indicators with small corrections for the analyzed company's performance industry features, its strategic goals being evaded. Thereby the performance analysis of the kind is considered as low-informational to ensure strategic operational management effectiveness. In addition it is complicated and labor-consuming both for practical application and formation of informational support of operational performance management.

6. Conclusions

On stating the concept of the applied strategic operational analysis (ASOA) the following conclusions are drawn: Applied strategic operational analysis as a kind of the applied strategic analysis is a new and sufficiently

effective instrument to research strategic aspects of the organization operational activity forming analytical support for the strategic operational management;
ASOA methodology is constituted by the concepts of the balanced scorecard and applied strategic analysis;
ASOA presumes comparative assessment, variances diagnostics and forecast of the BSC operational element indicators of the organization within its strategic customer goals;
ASOA comprises analysis of products due delivery; analysis of products manufacturing cost; analysis of products quality compliance with customer demands.
ASOA commences from comparative assessment of outcome indicators, characterizing products due delivery and is completed by factoring indicators forecast of products quality compliance with customer demands;
Results of applied strategic operational analysis may be applied for the development and implementation decisions of long-term, medium-term and short-term character in the field of an organization operational activity.

7. Implications for Future Research

The conceptual base of the applied strategic operational analysis, as a new instrument to research comprehensively strategic aspects of the organization operational activity through the balanced scorecard operational element, discussed above, defines some general contours of new research and performance leads, providing a theoretical basis for further ASOA development in terms of its practical application aspect.
The implications of future applied strategic operational analysis are as follows:
Detailed and specific ASOA methodology development in terms of the indicators of separate stages and strategic operational activity goals;
Development of the ASOA techniques for individual companies in different industries;
ASOA extension onto the continuing operational activity indicators being a derivative of the BSC operational element indicator;
Development of economic-mathematical models and computer programs enabling to apply ASOA for the operational activity management.

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