

## **INNOVATIVE ORGANIZATION ACTIVITY ANALYSIS BY MEANS OF THE BALANCED SCORECARD**

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### **Abstract**

The paper considers basic aspects of the applied strategic innovative analysis based on the innovative balanced scorecard element to be applied in the research process of the strategic innovative organization activity aspects. The methodology of the research is the balanced scorecard (BSC) concept introduced by R. Kaplan and D. Norton as well as the concept of the applied strategic analysis having been developed by one of the paper's authors. The applied strategic innovative analysis is depicted to encompass comparative assessment, variances diagnostics and indicators forecast of the innovative BSC element within the steps and strategic goals of the innovative process. The basic applied strategic innovative analysis method may include methods of absolute, relative and average values, comparison, grouping, graphical and table methods, correlation and regression analysis, cluster analysis, factoring, as well as expert evaluation method. The authors draw a conclusion that the applied strategic innovative analysis is a sufficiently effective instrument to research strategic aspects of the innovative organization activity in present-day economic environment.

**Key words:** innovative activity, organization, balanced scorecard, applied strategic innovative analysis

**JEL Code:** L29, M19, M49

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### **Introduction**

A high level of the economic achievements of the developed economies is ensured by such conditions as accumulated scientific, technical, industrial and investment potential; institutional factors of technological advancement and government support of innovative transformations.

To form and foster competitive advantage of any entity (an enterprise, a firm, a company, a business unit) is one of the basic objectives for the entity to survive and prosper in

the present-day fast transforming economic environment. The objective fruition is defined by its level of innovative activity and efficiency achieved. A competition causes organizations to build reserves of economic strength both owing to a more efficient utilization of the production and financial reserves available and investment attraction for the business update and expansion. This is preceded by the innovative activity to develop alternatives of capital investment aimed at the competitive advantages determination and support. Such advantages are featured by lower risks, higher investment return compared with similar ones within a specific economic niche. The market niche may be found within a certain activity forming customer values or regional aspects, however, in any case, the anticipated business offers should have sufficient innovative justification based on the relevant information base and convincing analytical calculations.

An improvement of the analytical support of the innovative economic organization activity management is a high-priority task in the present-day environment especially in terms of its strategic aspect, as the innovative activity, in wider meaning, implies a long-term process of the investment and marketing activity.

In view of the mentioned above the authors of the article seek to consider the applied strategic analysis to be employed as the analytical support of the strategic innovative organization activity.

## **1 Previous Research**

To enhance strategic management efficiency in difficult conditions of the present-day market economy we have developed the applied strategic analysis (ASA) to improve its information-analytical support, to evolve theory, methodology and methods of the overall strategic economic activity aspects to the level of the financial analysis being an efficient research instrument of the financial aspects of the organization economic activity based on the financial indicators and described experience.

ASA, as a strategic management function, assumes an overall research of the strategic economic organization activity aspects based on the BSC (Krylov, 2013, 2014).

The balanced scorecard concept as an analytical instrument applied in the field of strategic management was developed by American scientists Robert Kaplan and David Norton (1992) at the beginning of the 90s of the XX century, evolving both in their works (Kaplan & Norton, 1993, 1996, 2001, 2006, 2010) and those of other scientists studying economics (Friedag & Schmidt, 2002; Horvath & Partners, 2004; Maisel, 1992; Olve, Roy &

Wetter, 2000; Rampersad, 2003), and was multiply tested. At present BSC is considered to be one of the essential instruments of the organization management system.

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

The scores of the balanced system are formed depending on the outlook and strategic goals of any particular organization and have individual features. They represent a balance between external accounting data for the owners (shareholders) and internal characteristics of the most significant business processes, innovations, training and growth that is the balance between the results of the organization performance and future growth. The system comprises a combination of objective quantity estimated 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, indicators and end up with events.

The balanced scorecard is founded on the cause and effect; results attain factors and their interrelation with financial data.

The balanced scorecard encompasses four basic interrelated elements: finance, a customer, internal business processes ones as well as training and personnel development element. The BSC scores enable to characterize comprehensively an activity of commercial, government and non-for-profit organizations, the scores being relatively few (about 25 scores in average, as a rule).

It should be taken into consideration that basing on the balanced scorecard system special for any particular organization the applied strategic analysis lacks any standard methods. Hence, 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 taking strategic management decisions.

The ASA accomplishment principle, a deduction principle presumes, firstly, an investigation of the general BSC indicators, then specific indicators. The principle defines general sequence of the ASA analysis according to the following leads:

1. Analysis of financial indicators.
2. Analysis of customer indicators.

3. Analysis of internal business-processes (process of after-sales service, operational process and innovative process) indicators.

4. Analysis of training and personnel development indicators.

The ASA commences from the comparative evaluation of the financial indicators and is completed by the forecast of training and personnel development.

## **2 Results**

### **2.1 Concept and essence of the applied strategic innovative analysis**

An applied strategic innovative analysis (ASIA), a kind of the applied strategic analysis, assumes a complex, comprehensive research of the strategic innovative organization activity aspects basing on the innovative element of balanced scorecard. It can also be considered as a facilitating function of the strategic innovative management.

ASIA subject is the innovative BSC element indicators and the factors specifying them.

ASIA object is strategic organization innovative activity aspects.

The aim of the applied strategic innovative analysis is to form an analytical support of taking strategic decisions in the field of innovative activity management.

The ASIA objectives are as follows:

1. Comparative assessment of the innovative BSC element indicators.
2. Diagnostics of the BSC innovative BSC element indicators variances.
3. Forecast of the innovative BSC element indicators.

Notice, that all the objectives are closely interrelated as each subsequent objective follows from the previous one. So the diagnostics is effected by the results of the comparative evaluation of the innovative BSC element indicators and their forecast considers the diagnostics results.

Comparative assessment of the innovative balanced scorecard element implies a comparison of their real and target figures, finding a variance of the real innovative balanced scorecard element figures from the target ones and their qualitative variance characteristics. The qualitative characteristics of the innovative BSC element are real and target figures variance depends on their value (Table 1).

**Tab. 1: Estimation of qualitative variance characteristics of the innovative BSC element's real and target figures**

Variance value, %	Qualitative variance characteristics
Up to $\pm 1\%$	Fairly small
From $\pm 1\%$ to $\pm 5\%$	Essential
From $\pm 5\%$ to $\pm 10\%$	Significant
From $\pm 10\%$ to $\pm 20\%$	Large
$\pm 20\%$ and higher	Very large

Source: (Krylov, 2014)

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

While diagnosing the innovative BSC element indicators variance found are the results attaining factors, which are mostly impacting on the general or final indicators of the innovative balanced scorecard element, and determined is its value.

The innovative BSC element indicators forecast are of the purposeful nature. In case of the objective conditions the values of the innovative BSC element indicators forecast is targeted at the primordial determination and/or correction of the target values of the innovative BSC element indicators 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 values of the innovative BSC element indicators in the future. Notice, that the forecast commences with the general (outcome) indicators, the factoring ones being derived from them.

The ASIA aspects imply proper strategic aspects, tactical aspects and operational aspects. Within a strategic aspect of the applied strategic innovative analysis evaluated, diagnosed and forecast are final values of the innovative BSC element indicators for the period of the developed strategy in effect, i.e. their strategic values. Within a tactical aspect of the applied strategic innovative analysis evaluated, diagnosed and forecast are interim values of the innovative BSC element indicators at the year end, i.e. their tactical values. Within an operational aspect of the applied strategic innovative analysis evaluated, diagnosed and forecast are interim values of the innovative BSC element indicators at the end of each month, i.e. their operational values. All the ASIA aspects mentioned are interrelated and agreed: the results of the analysis of the operational innovative BSC element indicators values impact on their tactical values and the results of the tactical value analysis impact on the strategic ones.

The instruments of the ASIA methods encompass an aggregate of methods ensuring that the analysis is carried out and its goals are attained. The basic ASIA method may include

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

## 2.2 Information base of the applied strategic innovative analysis

The ASIA information base is the innovative BSC element (Table 2), the formation comprising a number of steps:

1. Definition of the strategic innovative process goal.
2. Construction of the strategic innovative process map
3. Selection of the innovative process indicators
4. Definition of the target innovation process indicators values
5. Development of the strategic innovative events

**Tab. 2: Innovative balanced scorecard element of the organization development**

Key problem of the innovative balanced scorecard element	Strategic goal of the Innovative process	Innovative process indicator	Target value	Strategic innovative event
Which goals concerning innovative process should be set to attain the aims of the succeeding operations process and after-sales services and their customers' and financial aims respectively?				

Source: the table was developed by the authors

## 2.3 Sequence of the Applied Strategic Innovative Analysis Implementation

The applied strategic innovative 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 innovative BSC element then specific ones.

The complex elements of the ASIA are the following:

1. Analysis of the new products development expediency.
2. Analysis of the applied research and development expediency and production of the next generation product feasibility study by means of the conventional technologies.
3. Analysis of the in-depth scientific research expediency of innovative products.

4. Analysis of the feasibility study of the cutting-edge innovative products development acceptable to customers and overcoming likely rivals.
5. Analysis of the customer demand acceptable in terms of new products development as customer future value.

The process of the ASIA analysis exercise can be presented by means of considering its main objectives i.e. diagnostics of the variance and the forecast of the innovative BSC element (Table 3).

**Tab. 3: Matrix of the ASIA fragments**

Complex ASIA element	Main ASIA objectives		
	Comparative evaluation of the innovative BSC element indicators (1)	Diagnostics of the innovative BSC element indicators variances (2)	Forecast of the innovative BSC element indicators (3)
Analysis of the new products development expediency (1)	Comparative evaluation of the new products development expediency indicators	Diagnostics of the new products development expediency indicators variances	Forecast of the new products development expediency indicators
Analysis of the applied research and development expediency and production of the next generation product feasibility study by means of conventional technological processes (2)	Comparative evaluation of the indicators of the applied research and development expediency and production of the next generation product feasibility study by means of conventional technologies	Diagnostics of the indicators variances of the applied research and development expediency and production of the next generation product feasibility study by means of conventional technologies	Forecast of the indicators of the applied research and development expediency and production of the next generation product feasibility study by means of conventional technologies
Analysis of the in-depth scientific research expediency of innovative products (3)	Comparative evaluation of the in-depth scientific research expediency of innovative products indicator	Diagnostics of the in-depth scientific research expediency of innovative product indicators variances	Forecast of the in-depth scientific research expediency of innovative product indicators
Analysis of the feasibility study of the cutting-edge innovative products development acceptable to customers and overcoming likely rivals (4)	Comparative evaluation of the indicators of the feasibility study of the cutting-edge innovative products development acceptable to customers and overcoming likely rivals	Diagnostics of the indicators variances of the feasibility study of the cutting-edge innovative product development acceptable to customers and overcoming likely rivals	Forecast of the indicators of the feasibility study of the cutting-edge innovative product development acceptable to customers and overcoming likely rivals
Analysis of the customer demand acceptable in terms of new products development as customer future value	Comparative evaluation of the indicators of the customer demand acceptable in terms of new products development as customer	Diagnostics of the indicators variance of the customer demand acceptable in terms of new products development as customer	Forecast of the indicators of the customer demand acceptable in terms of new products development as

(5)	future value	future value	customer future value
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Source: the table was developed by the authors

Examples of the outcome and factoring indicators analyzed per every complex ASIA element are provided in Table 4.

**Tab. 4: Examples of the analyzed outcome and factoring indicators per every complex ASIA element**

Complex element of the applied strategic innovative analysis	Indicators analyzed	
	Outcome	Factoring
1. Analysis of the new products development expediency	Proportion of new products immediately meeting customer demand; Sales losses from undue marketing caused by initial design adjustments	New products promotion rate; Break-even time-period
2. Analysis of the applied research and development expediency and production of the next generation product feasibility study by means of conventional technological processes	Number of the feasible next generation products manufacturing by means of conventional technological processes	Feasibility of production process
3. Analysis of the in-depth scientific research expediency of innovative products	Number of innovative products; Proportion of innovative products within sales volume; New products introduction opposite to planned rival product	In-depth research and development feasibility
4. Analysis of the feasibility study of the cutting-edge innovative products development acceptable to customers and overcoming likely rivals	Time taken for the innovative product development; Extent of ferreted out customer preferences in terms of innovative products	Number of innovative products prototypes before the launch
5. Analysis of the customer demand acceptable in terms of new products development as customer future value	Approximate sales of anticipated new products manufactured; Approximate profit from anticipated new products sales	Types of customer preferences acceptable in connection with new products production feasibility; Rating of each type of customer preferences acceptable in connection with new products production feasibility; Pro-forma prices for anticipated new products

Source: the table was developed by the authors

## Conclusion



To complete the treatment of the applied strategic innovative analysis concept we draw the following conclusions:

applied strategic innovative analysis as a kind of the applied strategic analysis may be considered as a sufficiently effective instrument to research strategic aspects of the innovative organization activity in present-day environment entailing innovative BSC element indicators' comparative assessment, variances diagnostics and their forecast within the steps and strategic goals of the innovative process implemented;

ASIA encompasses an analysis of the new products development expediency indicators; analysis of the indicators of the applied research and development expediency and production of the next generation product feasibility study by means of conventional technological processes; analysis of the indicators of the in-depth scientific research expediency of innovative products; analysis of the feasibility study indicators of the cutting-edge innovative products development acceptable to customers and overcoming likely rivals; analysis of the indicators of the customer demand acceptable in terms of new products development as customer future value.

ASIA analysis commences with comparative evaluation of the of the new products development expediency outcome indicators and is finalized with factoring indicators forecast for the customer demand acceptable in terms of new products development as customer future value;

ASIA results in ability to be employed for the long-term, medium and short-term management decisions in the field of the innovative organization activity.

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