

# **BARIÉRY ZAVÁDZANIA A VYUŽÍVANIA SYSTÉMU BSC V ORGANIZÁCIÁCH VEREJNÉHO A SÚKROMNÉHO SEKTORA**

## **BARRIERS OF INTRODUCTION AND USAGE OF BSC SYSTEM IN PUBLIC AND PRIVATE SECTOR ORGANIZATIONS**

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### **Abstrakt:**

Balanced Scorecard - BSC je metódou strategického riadenia organizácie, v ktorej stratégia je súhrnom hypotéz o príčine a dôsledku. Aby bolo možné tieto vzťahy overiť, mal by ich manažérsky systém vo všetkých perspektívach explicitne vyjadrovať tak, aby dával pohľad na stratégiu podnikateľskej jednotky. V zmysle uvedeného by každý cieľ a každé meradlo malo byť súčasťou strategickej trajektórie, t. j. reťazca príčin a následkov, smerujúcich k naplneniu stratégie, od ktorej boli odvodené. Konštrukcia reťazcov príčin a následkov patrí k najdôležitejším fázam celého procesu BSC. Stanovenie vzájomných súvislostí často zlyháva na mnohotvárnosti vzťahov medzi cieľmi. Neprehľadné a často príliš komplexné zobrazenie reťazcov príčin a následkov rýchlo stráca vypovedaciu hodnotu. Príspevok poukazuje na vybrané problematické aspekty zavádzania a využívania systému BSC v slovenských organizáciách verejného a súkromného sektora a odhaľuje niektoré súvislosti a vzniknuté problémy, s ktorými sa musia organizácie vysporiadať.

### **Abstract:**

Balanced Scorecard - BSC is a method of organization strategic management where strategy is a summary of hypotheses about cause and effect. In order to verify these relations, should their management system in all perspectives be explicitly formulated to give a view on the business unit strategy. In that sense, every goal and every measure should be part of the strategic trajectory, i.e. e. chain of causes and effects in order to achieve the strategy, from which they were derived. Construction of chains of cause and effect is one of the most important phases of the BSC process. Determination of interdependencies often fails to multifaceted relations between goals. Unclear and often too complex view of cause and effect chains quickly loses explanatory power. This contribution points on selected and problematic aspects of the introduction and usage of BSC for Slovak public and private sectors and reveals some of the context and the problems with which organizations must deal with.

### **Kľúčová slova:**

Balanced Scorecard, strategické mapy, vzťahy príčin a následkov, problematické oblasti BSC

### **Key words:**

Balanced Scorecard, strategic maps, causes and effects relations, the BSC problematic areas

**JEL: M19, M29**

## 1 Introduction

Strategic Balanced Scorecard (hereinafter BSC) is a new approach to measuring and managing organizational performance, as well as the implementation of the strategy because it allows decomposition of the organizational strategy into measurable objectives and their subsequent connection to performance indicators. BSC emphasizes on the drivers of success in the four perspectives: financial, customer, internal processes and organizational learning and growth. With quantifiable (financial) and non-quantifiable (financial) performance indicators captures the complex organization economic activity. Slovak managers have a very little experience with system BSC [5]. It is also conditioned with the level of strategic management in organizations, which often remains in the view of established ways of thinking. It is not important to handle only the technical aspects of strategic management, but also to manager an organizational culture change, change the pay scheme, set up new evaluation systems and etc.

## 2 BSC implementation aspects

As presented by Horváth & Partners [8] distinction from the complex of causal analysis has the following aspects:

- *Abstracting from external factors*

The cause and effect relations are abstracted from the influence of external factors. During designing strategy maps the external factors and their influences are not taken into consideration. External factors are not explicitly a part of the cause and effect relations, strategic trajectories shown in the strategic maps. The impact of external factors in the BSC translated as the output format of external strategic analysis and early warning systems, as well as through strategy revisions, upon which all components of the BSC are dependent.

- *Logical nature of causal links within the BSC*

BSC strategic model does not have to include all existing and potential causalities. In the terms of clarity is important to focus attention only on the strategically important cause and effects relations.

- *The credibility of the identified cause and effect relationship* is based on intuition and experience of management. To verify the accuracy of hypotheses set about causal relationships in the term of the strategic model can be used appropriate statistical and mathematical methods (in cases where it allows the character and quality of data). Cause and effect relations in BSC system is a significant reduction of complex causal analysis. Therefore, the identification, definition, verification of cause and effect relations between the individual components of the BSC (strategic perspectives, strategic goals, measures, their targets and strategic initiatives) are important factors affecting the overall functionality of the BSC and the quality of performance information.

- In the *complex causal analysis* is important to distinguish between two approaches to recognize the causes of the investigated phenomena: a statistical analysis and the substantive analysis [20]. Statistical analysis using mainly regression and correlation analysis. Today, increasingly are used for this purpose the artificial neural networks, which are methods of artificial intelligence, in many cases also perform well as a classification system. Their major advantage is the ability to detect non-linear relation in the data (linear discriminator function can not do it) and the ability to "learn". Mathematical and statistical methods are therefore advised to verify the cause and effect relations in the BSC strategic model, which we identified through substantive analysis. Explorative phase allows the identification of as many potential causes for some result. The aim of the assessment phase is the evaluation of potential causes and their selection based on an assessment of their adequacy and etc.

### *The issue of drafting strategic maps*

The literature states a variety proven in practice recommendations for identifying causal linkages within the BSC strategic map. The most popular methodologies include<sup>27</sup>:

- a) the application of Enterprise Value Map (hereinafter EVM),
- b) derivation of the cause and effect chains based on the strategic objectives of learning and growth,
- c) derivation of the cause and effect chains based on the strategic objectives of the financial perspective - deductive process,
- d) the derivation of the cause and effect chains based on the strategic objectives of the financial perspective - inductive process,
- e) the derivation of the cause and effect chains based on the strategic objectives of the customer's perspective, application of cause and effect matrixes showing the relation between strategic goals.

Brainstorming needs to be realized by a group of experts drawn from various fields: e.g. academic field, business practices and the alike based on the own empirical experience with the BSC method. Sometimes it is recommended to have a deputy from general public to evoke different levels of thinking. This possibility should be considered according to specificity of the BSC system.

The scope of application and the popularity of brainstorming methodology in practice depend on the type of problem solving. Brainstorming does not pose a whole problem solving process, it will be only help tool for preparatory phases in the process of applying AHP and MICMAC, where the usage of group methods is recommended directly by the makers of the methods [3] [15]. In our case the effective usage of brainstorming will take an advantage in these three problem areas:

- to create as many variations of subcriteria (to the principles of BSC),
- to determine the weights of the individual criteria and subcriteria in the application of AHP,
- to determine the impact weights (evaluation) and dependency of individual factors of BSC functionality (when MICMAC is applied).

Globalization and increasing dynamics of capital markets exposes the organization to new profitable and risky opportunities. Organizations have to be in time in analyzing of new opportunities and possible risks for the organization, which can influence the achievement of the stated objectives. Each business has to settle a business plan, i.e. to define the process, possible difficulties and answer the question "how to do it". Business plan is a result of business planning. Actual business plan prior to organization evaluation and preparation of feasibility studies [10] [11]. Risk management should be integrated into existing planning and management tools of organization. This greatly increases the reliability of planning and increases transparency with regard to the capital market. In addition to the BSC strategic objectives, BSC can provide many more incentives for risk identification. It is needed to understand BSC as helpful tool for risk management, but it is not sufficient for identification of operational risks, which are very significant for the success and existence of organizations [8].

### **3 BSC Implementation in Slovakia**

In Slovakia the BSC system is not very well known and in demand. The functional system of strategic management is a condition for the implementation of BSC in practice and that is what is missing in our organizations. Also, management theories based on the latest knowledge constantly come across barriers of established way of thinking in organizations. The role of managers is to deal not

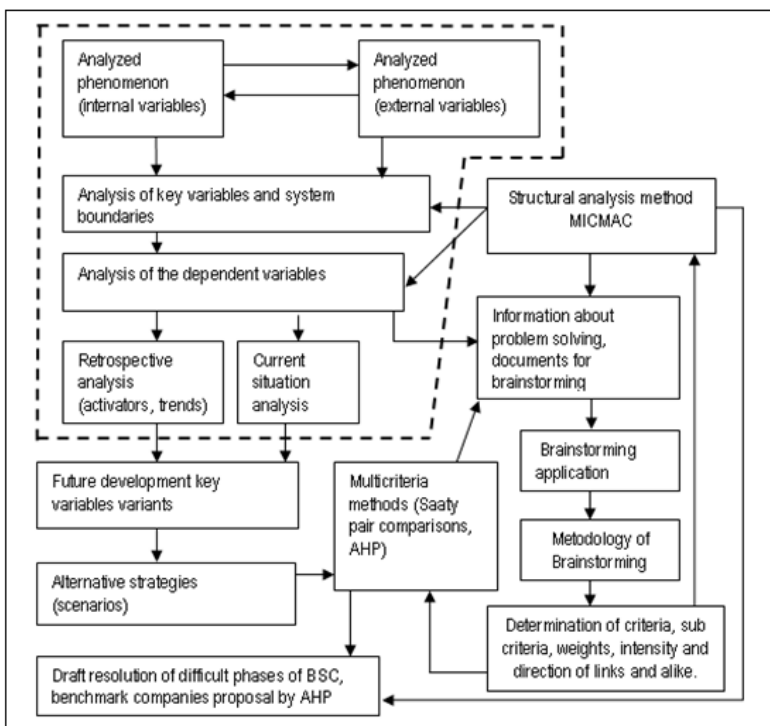
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<sup>27</sup> The contribution presents the most popular methodologies: a) EVM by Deloitte [4], b) c) d) e) f) of Horváth & Partners [8].

only with technical aspect of strategic management, but also with the management of organizational culture change, employee compensation systems, evaluation systems and etc. Although the measurement of performance in the organizations is currently rapidly increasing in the form of new concepts, managers experience difficulties in their implementation and further usage. The unfavorable situation occurs in those organizations where there is a tendency for the persistence of traditional performance measurement systems, poorly effective and not supporting continuous improvement. Most of these systems for performance measuring in organizations contains many areas of measurement, as well as many indicators, where only part of them is usable (sometimes it is up to thousands of variables). For managers, it is much easier to track costs and profits which also allow them, if necessary, to misinterpret the results and thereby mitigate the responsibilities impact of concrete managers.

The links between the identified problematic phase of BSC system in Slovak republic [19], as well as proposed supporting methodologies to individual problem areas in interaction with each principles of the BSC show the Figure 1.

Figure 1: Interconnection of the AHP and MICMAC methods using creative work methods (Brainstorming)



Source: authors

As shown in Fig. 1, the connecting bridge between methods AHP and MICMAC is brainstorming. Brainstorming as the best known and most widely used expert method for searching for new ideas is also often used by our managers [17]. The problem with the correct application is to

understand its methodology. In its application should bear in mind the fact that it has to solve mainly specific, not general problem and its solution requires new ideas. When selecting the most important statements - sub-criteria for each criterion – principles, we consider BSC we consider the application of this method to be very effective. It's also a fact that is used for brainstorming and group work to encourage free association, eliminating boundaries to address the problem [12].

The current business environment is characterized by continuous performance monitoring and efficiency of organizations. Except real achieved results is measurement and evaluation of performance significantly influenced by the methods that are implemented. One of the successful systems for measurement and management performance, as well as strategy implementation in the world is Balanced Scorecard (BSC). Its nature is to reconcile and implementation of strategy relating to long-term planning and orientation to the future, and it is translated into specific targets and indicators across the organization. BSC provides a balanced set of indicators, making it a valuable starting point for complex strategic benchmarking. BSC rating system itself is crucial to ensure that the system provides unbiased and relevant information and is beneficial for strategic management.

The BSC is characterized by its variability, complexity and individuality; therefore it provides sufficient opportunities for analysis and usage of multicriteria methods. Multicriteria methods are currently very popular tool in decision making and assessments in different areas. These include the Analytical hierarchy process (AHP), which provides a framework for effective decisions preparation. The method of decomposition of complex unstructured situation into simpler components creates a hierarchical system of problem solving. For this reason, we suggested AHP method for solving problem areas in BSC. As a basis for its application we propose to choose the principles of BSC, based on fundamental principles of performance, comparison of traditional and modern systems of performance measurement, as well as knowledge of our own scientific activities. These principles are also benchmarks for brainstorming as a group problem solving method. The group method is recommended by the creators of the methodology of another method MICMAC that is suitable for implementing the structural analysis of BSC functionality factors. Despite the qualitative nature of the analyzed BSC principles (in the form of criteria and sub criteria in the application of AHP) it is possible through creative management methods to determine their optimal weights and use these principles, respectively evaluation criteria in developing of strategic benchmarking model for which the BSC is an excellent platform.

#### **4 Methods and research sample**

The research in advisory and consulting companies in Slovakia was realized, where we surveyed the current approaches to the implementation and the use of the BSC system in Slovakia and identified the most important criteria and barriers to the implementation of the BSC system in practice. Our clarifications of the BSC implementation methodology, as well as the methodology of strategic maps are useful contributions in this area. In the survey, the organizations were asked to participate by completing the semi-structured questionnaire. The form of semi-structured questionnaire was chosen intentionally, or as open questions. Two ways of delivering a questionnaire were used. First one was contacting in personal form, written and electronic questioning. Second one was using post office sending 20 letters containing questionnaire, cover letter and stamped envelope. Since on-line surveys are recommended because of significantly reduced costs and time, as well as a significant proportion of absented data, we used this form of questioning in our survey sample, where link on survey was stated in email and respondents could choose which form is suitable for them. In order to obtain high return score, organizations were again asked by email to complete a questionnaire. Companies that have expressed interest to introduce with BSC system were personally visited for the reason of structured interview. Based on the references about BSC implementation we obtained our research sample for further research.

#### 4.1 Research sample

Due to the nature of the advising and consulting enterprises and consulting services and businesses in the area of information systems and information technology (IS/IT), we obtained information about companies implementing BSC in Slovakia through the websites. The most visited web sites were searched according to the number of unique visitors entering keywords relating to the researched issue. We specified companies implementing BSC in Slovakia and on this base 40 companies were found declaring the implementation of the BSC. After verification only 20 organizations really implement the BSC. These companies were asked and the interest to cooperate was shown by 16 respondents. The return rate was 80 % from companies which really implement BSC system. The first sample consisted of research and consulting companies (total 16) as companies which implement the BSC (BSC implementers). The sample consists of organizations which had history from 3 to 19 years on the market and most of them were represented by organizations that have 12 years from its establishment (37.5 %). The sample consists of organizations established for the relatively long time. The largest spectrum of enterprises are those employing up to 10 employees (62.5 %), significantly less number of small businesses employing up to 50 employees (25 %) and medium-sized enterprises employing up to 250 employees (12.5 %). The second sample (BSC users - total 16) was represented businesses from 8 to 14 years since their establishment, largely represented businesses established in the industry for 70 years (37.5 %). The BSC system was mostly implemented in the business and industrial companies (71 %), in small extent in healthcare (29 %).

#### 5 Paper results

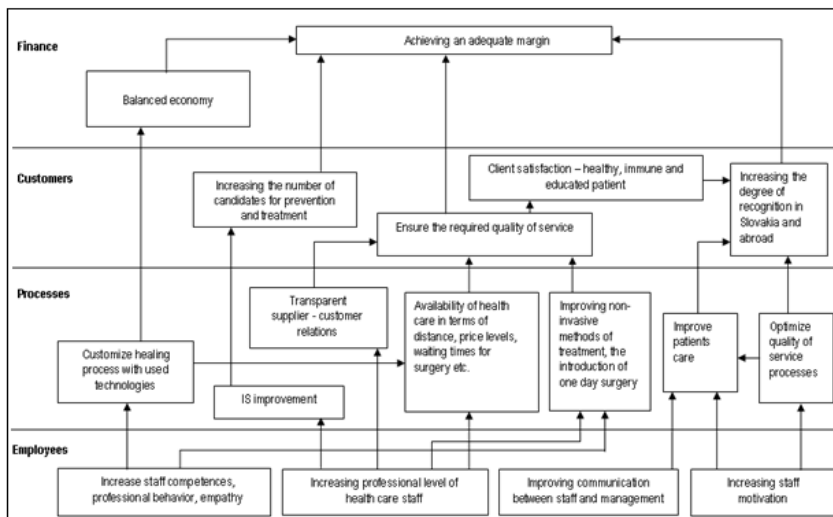
At present, managements are focusing their attention more to teamwork and organizational creativity. We have tried to capture these aspects and highlight their importance in the processes of application AHP methods (Analytical hierarchy process) [15] and structural analysis using the method MICMAC (French: Matrice d'Impacts Croises Multiplication. Appliqué a un Classement, English: Cross-Impact Matrix), we propose to solve difficult phases of the BSC implementation. AHP is a technique that helps in structuring complex decision-making problems and is based on knowledge of mathematics and psychology. It provides a conceptual framework to identify and quantify key elements, linking them to the objectives of decision-making and evaluation of alternatives. The process is created on decomposing the decision problem on simple sub problems that can be evaluated separately. After determining the hierarchy the decider evaluates individual elements based on their progressive mutual comparison. The basis for this assessment could be specific data about an individual elements which are available, or judgments about the relative importance of these elements.

The results of this evaluation process have quantitative form. In the final phase of the process derived priorities for each considered alternative are stated in the numbered form that determines the relative ability to achieve the objective. For these reasons we believe that AHP is a right supporting tool for constructing BSC strategic maps. Application of structural analysis using method MICMAC [3] allows to draft a model of potential malfunctioning causes of BSC and classifies analyzed variables according to their level of influence and dependence to the specific categories. In examining the matrix of structural analysis we can see which variables have the greatest impact on the BSC system. Among the variables there are more complex relationships - causal relationships (indirect relationships), who's activity can be as strong as impact of the direct links. Early and correct identification of these links in the BSC system can reveal significant deficiencies in the system functioning and thus ensure its continuous development to fulfill its function as an effective strategic management system of the company. BSC method is not directed to the conception of strategic causal models.

Managers of organizations with an implemented BSC system has been asked in the structured interview about strategic targets and benchmarks, for various BSC perspectives. As the strategic map of organizations was classified, the data allowed us to build strategic proposal map of organizations operating in different sectors. The strategic maps can be used in organizations as a model, how to

identify and present relationships between the objectives. Example of a strategic map of the organizations providing healthcare states Figure 2.

Figure 2: An example of strategic map – Healthcare



Source: authors

Recent research studies in Slovakia confirm that only a negligible part of Slovak managers is familiar with the BSC, and therefore its practical application encounters many barriers. The most important reasons include the lack of information about this system and inadequate managers' beliefs about its needs. The importance of these issues also demonstrates the fact that comprehensive study devoted to problems of implementation of the BSC as a system for implementing corporate strategy has not yet been done in the Slovak Republic. Also, there is relatively little empirical evidence on how many enterprises, which ones and how exactly implement the BSC system in Slovakia. Thus, the purpose of the thesis is to systematize, examine and evaluate selected attributes of the BSC system application in the process of the strategy implementation in the analyzed companies, and to identify problematic areas of the BSC implementation in these companies and to propose options to address them.

## 6 Discussion

This chapter summarizes problematic areas of BSC system in the surveyed Slovak organizations. Our ambition was to verify authenticity of the BSC system principles (a compliance of the implemented principles with the theoretical ones), as well as to characterize a platform of the BSC system from the organizational and the technical aspects. Based on our research results, we focused in particular on the difficult phase of the BSC system implementation in the surveyed companies. Special attention was paid to the process of strategic map. On the basis of realized research we identified the insufficient use of analytical methods, what can significantly impair the quality of the BSC system implementation or to make the BSC "unusable" for a further operation of enterprise. Based on

research realized in Slovakia in 2008 - 2010 oriented to implementation the BSC system were determined three approaches in the implementation of BSC: *basic, project and model approach*.

The *basic approach* is characterized by strong definition of the vision and mission and their subsequent connection with the strategic map, from which the metric is developed. It is an integral part of the cyclic control and evaluation. Its complexity is close to the model Nine Steps to Success from the Balanced Scorecard Institute (Washington, 1998 to 2008). From the reported approaches it is precisely clear that this approach is the most linked with the process of strategy formulation in the strategic management – from the defining vision and mission, to the targets setting in strategic maps. This close link provides timely updating of the strategy, and subsequently reviews of the BSC system. This is an elementary condition to ensure the functionality of the system - a link between the formulation of strategy and the tool for its implementation. The lack in this linkage could lead to the wrong effort to achieve the objectives which are different from actual objectives. It could result to the changed business conditions and have fatal consequences on organization. Many times it is not easy to determine the causes of strategic objectives achievement failure, i.e. to identify whether the failure was in the phase of strategy formulation or implementation.

The *project approach* has a significant aspect of project management and begins with planning phase, then updates the strategy and in the creation of the BSC focuses on key performance indicators and decomposition of the system. Planning phase of the BSC project implementation consists of the following steps:

1. determination of basic and partial objectives of the project, their detailed specification,
2. determination of the project leader, which should be a member of the strategic business unit (SBU) team, for which the scorecard is defined,
3. determining the persons involved and responsible for BSC project,
4. determine for which SPJ will be BSC generated (in a small organization is BSC implemented throughout the organization, in the big sized organization several control units are determined),
5. solving questions of the standard of project planning, budgeting, risk analysis,
6. solving questions information-technical system development (hardware and software solutions), responsibilities for IT system.

The *model approach* is markedly different from the approaches in management theory, mainly because of its focus on technical solutions and integration into existing system structures. Its characteristic feature is a strong link to external support tool - a software solution in which the methodology is largely predefined. Implementation of the BSC takes place in these phases (some of them can run in parallel)<sup>28</sup>:

1. model synthesis (strategic synthesis and synthesis of metrics),
2. technical implementation,
3. organizational integration,
4. technical integration,
5. common operation.

By connection of the objective financial measures with subjective non-financial measures became metrics a complex issue, requiring an individualized approach. The subject of expert discussions is not only the measures and defining their content, structure and number, but also the links between them and their mutual balance. Methodological problems are linked to the setting of targets

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<sup>28</sup> Source: Guidelines for implementing Balanced scorecard [7].



and critical values of the individual measurements. The most common causes of system failure are weak, ambiguous or too complex measures, their insufficient number, which does not cover all necessary areas. The problem is the redundancy of measures, which generates a lot of irrelevant data. Regarding the definition of measures, the BSC methodology not clearly defines them and it is a difficult task especially in customer perspective, employee's perspective and the perspective of learning and growth [19]. As results from our research, in our organizations clearly absents a methodology that would also be guidance in the process of determining appropriate measures to the set of strategic objectives. Our organizations are characterized by the use of a large number of diagnostic and strategic measures, the BSC system considers the optimal number of 2 to 4 parameters for one strategic objective). In our organizations, many of the strategic objectives are set too vague, resulting in ambiguous interpretation of results. Measures have often too operative character (they do not measure strategic performance), or the targeted values are set wrongly (underestimated or overestimated). The problem is the lack of data for measurement, or the lack of transparency and inconsistency. The inappropriate ratio of leading indicators and delayed indicators causes the problem with system balance.

Causality is another critical aspect of the functionality of the BSC. Causal relationships between strategic objectives and measuring tools are set out in the strategic maps. The problem is the mismanagement of our organizations in their drafting methods. As the most important barriers we can assume:

- lack of knowledge of techniques and methodologies for the planning,
- misunderstanding of the graphical representation of relationship of causes and effects,
- effort to analyze all conceivable relations between the goals towards to aggregation of all relationships, and ultimately to the formation of overly complex and opaque matrix,
- attempt to find logic in the algorithmic chain of causes and effects and suppression of intuition, experiences,
- prevailing tendency to apply the correlation analysis in checking the strategy in the chains of causes and effects.

As conclusion we would like to draw the attention on the following areas. Some results may be the result of a various reasons. Problematic part is the identification of all major causes affecting the results and their subsequent differentiation according to importance. *Ceteris paribus* assumption can not be set as a basic assumption of the causal analysis of the organizational performance factors and implementation of its strategy. Each result can be a cause of another effect and complementarity between cause and effect relations can create long chains of cause and effect relations. Problematic behavior can occur if the performance is judged only on the base of analysis and assessment of certain parts of the chains of cause and effect, without trying to find other important components, which may ultimately lead to the identification of false causalities in chains of causes and effects.

The aspect of time delay is another important issue. The decisions of a strategic nature have long term consequences on results; the problematic aspect is the estimation of the delay effect of the organizational activities. For this reason the incorrect identification of cause and effect relations leading to the false belief that it is due to some reasons, which in fact did not cause it. The reciprocal relations (one object acts on the second and at the same time it is also affected) may not occur with the same intensity, even at the same time period. Examination of the causes of certain phenomena is one of the key areas of causal analysis. The behavior of the people may not be deterministic, i.e. repeated exposure to a particular phenomenon is not always well provided for maintaining *ceteris paribus* with the same response.

The BSC system reacted to the increasingly criticized explanatory ability of the value criteria for measuring the performance of an enterprise to consider the success of its survival in the future. The main reason for the introduction of the BSC was to transfer a strategy into the normal practice. The change, which was brought by this concept, was the extension and linking of performance measurements of purely financial indicators to indicators from other perspectives of enterprise's activity.

The BSC considers the value criteria to be unfungible because of their objectivity and syntheticity. Its aim is, however, to remove the value criteria distortion due to their pursuit of short-term. Properly set up the BSC should appropriately combine the outputs (the late indicators) and the motors of performance (indicators advancer), thus enabling it to find causation for the success in the future. Careful analysis of the output variables can create not only a comprehensive system for performance measures, but also the entire strategic management system.

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