Innovative approaches to the modification of BSC model

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Abstract

Balanced Scorecard, used as a strategic evaluation tool, suggests that performance of any organizations should be evaluated not only by using financial indicators but also simultaneously considering non-financial indicators. The concept of the BSC has been widely adopted and used in the business sector and less in the education sector, although institutes of higher education are also focusing on ways to render high quality education to their educators and have a better performance. Despite the fact, that Balanced Scorecard is very sophisticated and in terms of implementation very successful performance measurement system, some authors have identified a number of shortcomings and have proposed the innovative approaches to the modification of the traditional model with related performance indicators.

1. Introduction

The current environment of globalization and economic turbulence has increased the challenges managers face and, therefore, various organizations try to find the right tools to meet these challenges with appropriate tools for performance and quality measuring. One the most successful performance measurement system is Balanced Scorecard. It builds a balance between financial and non-financial, organizational and non-organizational performance measures, and hence, suggests a more thorough evaluation methodology. It translates an organization’s strategic objectives into a set of performance measures distributed among four perspectives: financial, customer, internal business processes, and learning and growth. But, in the review of relevant literature has been revealed, that despite the satisfying levels achieved in conceptual and theoretical dimension of Balanced Scorecard the method has

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some deficiencies in terms of implementation on a quantitative basis and that there remain some problems to be resolved. And therefore, the article focuses attention on some authors that have proposed significant changes of traditional perspectives and indicators (applied by the authors Kaplan and Norton), or prefer to use the original perspectives combined with other methods.

2. Balanced Scorecard Knowledge-based System (BSCKBS)

BSC has proven a powerful tool for strategic planning and communicating strategy that assists in strategy implementation. Successful strategy implementation is based on effective strategic planning. Owing to the strategic planning being a virtual necessity in business, this work (Huang, H., 2009) proposes an integrated approach for the BSC and knowledge-based system (KBS) using the analytic hierarchy process (AHP) method, and then develops an intellectual BSCKBS (Huang, H., 2009).

The main objective of this work is to fill the gap in the research by combining the BSC, KBS and AHP techniques to produce in improved approach to strategy planning and decision – making.

BSCKBS comprises three main components of DSSs (Decision Support Systems) including DBMS (Database management system - primarily comprises a relation database managed by a software program), MBMS (Model-base management system – includes the AHP model that enables the system to determine specific strategy weights), DGMS (Dialog generation and management system – supports a friendly environment for communicating). The fourth component is knowledge acquisition subsystem that suggests alternatives or actions to decision makers. BSCKBS database includes current or historical data, financial or non – financial information, and expert questionnaires from multiple applications or units.

3. A proactive BSC methodology (PBCSM)
According to authors Kaplan and Norton (2004), successful execution of a strategy (Breakthrough Results) requires two components: \[\text{Breakthrough Results} = \text{Describe the Strategy} + \text{Manage the Strategy}\]

Later, these authors deal with the issue of strategic maps, which should describe the visualization and strategy and rewrite the original equation as follows:

\[\text{Breakthrough Results} = \text{Strategy Maps} \rightarrow \text{describe} + \text{Balanced Scorecard} \rightarrow \text{measure} + \text{Strategy - focused company} \rightarrow \text{manage}\] 

According to Proactive BSC methodology, both equations are missing an important component - simulation strategy.

\[\text{Breakthrough Results} = \text{FCMs} \rightarrow \text{simulate} + \text{FCMs} \rightarrow \text{describe} + \text{Balanced Scorecard} \rightarrow \text{measure} + \text{Strategy - focused company} \rightarrow \text{manage}\] 

In order to use this new component, it is recommended using fuzzy cognitive maps (FCM). By using FCMs, the proposed methodology generates a dynamic network of interconnected key performance indicators (KPIs), simulates each KPI with imprecise relationships and quantifies the impact of each KPI to other KPIs in order to adjust targets of performance. FCMs are illustrated as causal-loop diagrams.

![Diagram of PBSCM](source: Chytas, P. et al. (2011))

In the above “equation”, in the first phase (simulate), we use the simulation characteristics of the FCMs theory. The FCM approach involves forward-chaining (what-if analysis). In the second instance (describe), we utilize the representation capabilities of the FCMs theory, which is very suitable for studying interactions between KPIs. The main objective of this research is to propose a methodology (not a new performance measurement framework) that will support existing measurement framework during the process of performance measurement systems’ design, implementation and use, and to advance the decision-making process (Chytas, P. et al., 2011).

4. **Lean BSC**

During the past few decades, many companies in the world have been forced to adopt new Lean production strategies. So in this research, BSC approach has been implemented for selecting the leaness criteria. For determining the lean performance measurement through the company’s lean strategy map, a set of objectives should
be driven based on the BSC concept. The main objective of this system is to reduce costs, as well as other successes, such as quality control and human aspects.

![Diagram of Lean BSC model](image)

This model was considered the importance of objective selection within five perspectives - financial, customer, processes, people and suppliers (Seyedhosseini, S. et al., 2011).

5. **Balanced IT Scorecard (BITS)**

Implementation of a BSC requires IT support. The BITS methodology proposed monitor KPIs within five perspectives: financial, customer, internal processes, learning and growth, infrastructure and innovation.

![Diagram of BITS methodology](image)

Automation of BSC is essential in order to manage the vast amount of information related to a company’s mission and vision, strategic goals, objectives, perspectives, measures, causal relationships, and initiatives. It consists of an analysis of user requirements and software features and choosing the most effective software that will process the information about the performance of business processes.

6. **BSC – ANP model**

Despite the high number of studies carried out on BSC framework, authors Yüksel and Dagdeviren (2010)
underlined several quantitative weaknesses of the original BSC method, the lack of studies on how to correctly implement the BSC framework and tried to modernize it. In the light of this observation, they suggested a model aimed at integration of ANP (Analytic Network Process) and BSC methods (Yuksel, I. & Dagdeviren, M., 2010).

![Diagram of the decision-making process of BSC-ANP model.]

Proposed model has shown that KPIs included in BSC approach can be consolidated with the help of fuzzy ANP technique. According to this model, total performance score was calculated by multiplying the global weights and scale values of performance indicators and then by summing the resulting performance levels.

7. **COBIT - BSC**

The purpose of proposed model is to explore the integrated use of Control Objectives for Information Technology (COBIT) and Balanced Scorecard (BSC) frameworks for strategic Information Security Management (ISM). The goal is to investigate the strengths, weaknesses, implementation techniques, and potential benefits of such an integrated framework. This integration is achieved by “bridging” the gaps or mitigating the weaknesses that
are recognized within one framework, using the methodology prescribed by the second framework. Thus, integration of COBIT and BSC can provide a more comprehensive mechanism for strategic information security management – one that is fully aligned with business, IT and information security strategies (Ahuja, S. & Goldman, J., 2009).

References


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