

## APPLYING THE BSC AND RAVE MODELS IN THE MANAGEMENT OF UNIVERSITIES IN BULGARIA

The main purpose of this study is to demonstrate the possibilities of applying a modern tool that allows to measure and evaluate the universities' performance by combining BSC<sup>1</sup> and RAVE models.

The access to knowledge and innovation is a great advantage. The benefits are due to more efficient business transactions, cleverer investment and cost optimization, generation of positive financial results, etc. The higher education institutions, or more precisely entrepreneurial universities, play a significant role in this respect. The degree of entrepreneurship and an understanding of the commercial value of knowledge are considered key factors in coordinating the activities of a university with the requirements of the knowledge-based economy. An entrepreneurial university is not really a commercial university, the word 'entrepreneurial' here is used in the sense of taking risks during the period of innovation development until its putting into operation. Its role can be distinguished in the following aspects: as a source of a spin-off enterprise (creating new enterprises based on the activities carried out so far internally in the corporation); as a prospective partner for the development of innovative ideas; as a source of 'knowledge' for start-up entrepreneurs. Ultimately, a university's key target is to influence society by integrating teaching, researching and raising the living standards of people. An entrepreneurial university aims precisely to do effective teaching and research that will provide a better life for the society. The ability of Bulgarian universities to achieve this aim and role depends on their willingness to invest in the development of offices of technology transfer and to promote an understanding among the academic community about the opportunities of disseminating scientific knowledge and results.

The Balanced Scorecard /BSC/ appeared in the early 90s of the twentieth century. It was developed by American scientists R. S. Kaplan and D. P. Norton<sup>2</sup>. The Balanced Scorecard uses the traditional financial indicators that reflect historically past events. BSC complements the financial parameters of the past period with metrics to measure the key drivers for future development<sup>3</sup>. The system is a combination of objective result indicators, susceptible to quantitative measurement and subjective, more or less relative mechanisms for achieving this result<sup>4</sup>. It allows the management to 'foresee' its business in four projections:

### Financial Perspectives Projection

The financial indicators are present in the BSC, as they are valuable in measuring the economic consequences of past activities. As a rule, the following are included as typical targets within the financial aspect of a university: an effective use of financial resources for achieving the goals set, increasing the revenue and reducing the expenses, and an added value created by human capital.

### Marketing Perspectives Projection

Within the framework of this projection managers identify the key market segments. As a rule, this includes several basic or typical indicators, such as expanding the range of students attracted by the trust in and the reputation of the university.

### Organizational Perspectives Projection

The management includes here the most important internal processes of the activities of business entities in which they have to achieve good results. These are: creating a system of education quality management and focusing on the performance.

### Education and Development Projection

This projection is based on three main sources: personnel, systems and organizational procedures that a business entity must create in order to achieve its long-term goals. The following can be used as indicators: permanently improving the qualification and motivation of the academic community and stimulating the dissemination of scientific knowledge and results.

The BSC concept differs from the other approaches for evaluating and measuring performance. It integrates

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<sup>1</sup>Kasarova, V. first suggested using the balanced scorecard in the management of an entrepreneurial university. *Finansovi inovatsii*. Sofia, NBU, 2007. pp. 295-328. There is no information regarding the combined application of BSC and RAVE.

<sup>2</sup> Kaplan, R.S., Norton, D.P. *The Balanced Scorecard – Measures That Drive Performance*. // *Harvard Business Review*, 1992, Vol.70, № 1, pp. 71-79.

<sup>3</sup>Kaplan, R., Norton, D. *Balansirana sistema ot pokazateli za efektivnost* (Bulg. transl. ed. of 'The Balanced Scorecard') Sofia, 2005, p. 10.

<sup>4</sup>*Ibid.*, p.13.

the financial and non-financial indicators, taking into account the causalities<sup>5</sup> between the performance and the key factors that influence it. BSC practically becomes a system for measuring the effectiveness in a direct-relationship management system<sup>6</sup>. BSC is developed based on the following principles<sup>7</sup>: equality of the financial and non-financial indicators; causalities between the indicators; a relationship between all indicators and the financial performance. The above-stated leads to the conclusion that BSC can be seen as an instrument of strategic management, which enables the opening up of opportunities for measurement, evaluation and control of the strategic and operational management of universities.

When developing and implementing BSC, business entities have to evaluate the opportunities and threats, the strengths and weaknesses, i.e. to carry out a SWOT-analysis.

The disadvantages of BSC to some extent can be overcome by incorporating the RAVE in the structure of the BSC.

The *RAVE<sup>TM</sup>* (Real Added Value Enhancer) concept was developed by Strack and Vilis<sup>8</sup> in the late 1990s. For the first time added value created by human capital was formulated by the Boston Consulting Group<sup>9</sup>. The literature sources studied show that the indicator is designed to assess processes of creating value by the staff. The purpose of the *RAVE<sup>TM</sup>*-based management system is to guide the company to add value. The transformation of cash flow value-added is used to measure the value added generated by human capital. It is expressed by the following formulas:

$$RAVE^{TM} = (VAP - ACP) * P,$$

$$VAP = VA / P,$$

$$VA = T - MC - ED - WACC * I_c,$$

where: VAP is the value added, created per person employed;

ACP – average cost per person employed;

VA – value added;

T – total revenues;

MC – material staff-related costs;

ED – economic depreciations;

WACC – weighted average cost of capital;

I<sub>c</sub> – invested capital;

P – number of employees (personnel).

We believe that the combined use of the BSC and RAVE better measures and expresses the performance – BSC as a major strategic management tool and RAVE – as an operational tool, a financial perspective in the balanced scorecard. The aim of our model is the introduction of a mechanism for measuring a university's performance most comprehensively.

The application of this model involves solving a number of tasks, the basic ones being: identifying all possible factors influencing the activities of universities; developing a system of indicators for measuring and evaluating their performance; providing reliable information sources; analyzing the results; recommendations for maintaining and improving the performance level.

The execution of the tasks will lead to: the presence of a reliable mechanism for measuring and evaluating the performance of universities; an approach for providing information for evaluation and analysis; an analysis of universities' market positions and competitiveness.

Some basic requirements to be complied with when applying this model are: precision in the practical application of the model; accuracy in determining the substantial effects of the model; representativeness and accuracy of the information used in the model.

<sup>5</sup>Kaplan, R.S., Norton, D.P. The Balanced Scorecard: Translating Strategy into Action. Harvard Business School Press, 1996, p.31.

<sup>6</sup> Haas, M., Kleigeld, A. Multilevel design of performance measurement system: enhancing strategic dialogue throughout the organization. // *Management Accounting Research*, 1999, № 10, pp.233-261.

<sup>7</sup>Mayer, M. V. Otsenka effektivnosti biznesa. Moscow, OOO "Vershina", 2004, p. 140.

<sup>8</sup>Strack R., Vilis, U. *RAVE<sup>TM</sup>* : Die nächste Generation im Shareholder Value Management, in: Zeitschrift für Betriebswirtschaft, 2001, pp.67-83.

<sup>9</sup>Exnel K. Controlling in der New Economy, Herausforderungen, Ausgaben, Instrumente, Wien, 2002, p.166.