Managing major components of market value of enterprise in assessment of economic efficiency

Elena Anatolievna Iakovleva

St.-Petersburg State Polytechnical University, Polytechnicheskay str., 29, St-Petersburg, Russian Federation

Abstract: The article introduces a control model of company's market value factors on the basis of infrastructural representation of an innovative enterprise. In this model, factors are compared to indices that are used in strategic development decision-making. Infrastructural representation of the control object of an enterprise's innovative activities (EIA) is implemented with the value maximization concept. It ensures that the company's resources are distributed efficiently, which involves all elements of EIA management process. The problem of managing economic efficiency of company performance is important due to the fact that economic management mechanisms (methods and models) get developed and improved and, thus, all the variety of production communications and business situations are embraced.

Introduction

Today's economic conditions ask for dynamic models and mechanisms that can consider future advantages and capacities of investments in new technology, science and engineering when modernizing production, their multiplicative and emergent effects, that take into account uncertainties and risks of the company's development. Lack of complex economic approaches generates subjectivism in building up the company's development strategy, in choosing systematic production innovations, their implementation and structure of funding. This entails economic inefficiency of decision-making when modernizing production, unbalanced economic development of Russian industrial sector and instability in economic growth rates and proportions of enterprises.

Literature review is used to define an evaluation of Economic Efficiency of Companies and to apply the management system to the company. The article research served both the interest of the organization performance, which was to measure how profitable the company was, and the interest of science, namely to produce knowledge about new ways of looking into performance measurement. Many authors (e.g., Stewart (1991); Young and O'Bryne, 2001; O'Bryne, 1996; Biddle, Bowen, and Wallace, 1997 and 1999; Martin and Petty, 2000; Feltham et al., 2004; D.J.Obrycki, R. Resendes 2000, Holler, 2009) have described the EVA® for explaining the value of a enterprises. EVA® estimates by major firms, e.g., Goldman Sachs, First Boston, and Stern Stewart (Weaver, 2003), Delloitte.

Managing major components of market value of enterprise in assessment of economic efficiency

When evaluating how new products influence economic development of the enterprise, a comparative analysis of basic economic indices in the fields of R&D, marketing, finance, production, and personnel should be done before and after innovative activities have been implemented. The distinction of this approach lies in the fact that it helps research EIA so as to establish interrelations between economic effects resulting from innovations. Comparative analysis is designed to answer the following question: how will the ratios of basic efficiency indices of the enterprise's business activities change when new products are introduced? This makes evaluation and choice of innovative development line more reasonable, especially from the strategic point of view. The system of parameters that are used to assess cause-and-effect influence of EIA on the company's performance is based on a group of indices that determine economic growth by general functional lines of business. They include dynamics analysis of the company's market value, evaluation of intangible and capital assets efficiency, economic profit, sales and production analysis. Then, corresponding interrelations are established between relevant indices of increment, which reflect how modernization and innovation influence the enterprise performance after improvements. [1]

When analyzing how new technology affects economics of the company, the basis for comparison can be economic data, taken as a whole, before the modernization project. In order to assess the improving technology it is reasonable to make a comparative analysis through calculations and comparison of indices by separate production operations and business processes. If the analysis has to be made for a new enterprise, the data obtained will be not comparative but absolute.
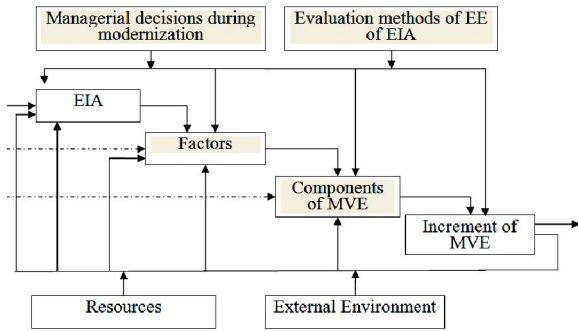
Fig.1. Managing scheme for the main components of market value of enterprise (MVE) when evaluating EE

Complex representation of control object of EIA

Complex representation of the control object of EIA is a model of Enterprise Resource Planning in the modernization process, which reflects its hierarchical structure and feedbacks; accounts for many properties (conditions) of its elements and variability of modernization and innovation process itself. It is presented in Fig.2, which shows components of MVE needed for stable efficiency of EIA [2].
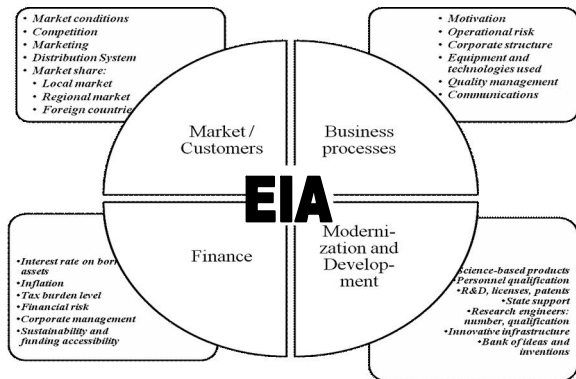

Fig.2. Factors, influencing constituencies of EIA during modernization

The value factor is determined as any variable that influences MVE – these include key competitive advantages of the enterprise, which help it advance in the market, and amounts that affect components of value, whereas components of value are major elements and value constituents. To use components and associated factors, their priority, hierarchy, interdependence, significance, and influence on a certain economic parameter have to be determined. The major problem with this is the need for accounting and varying key factors, risk and uncertainty assessment, determination of the best capital structure when funding EIA. Key principles of

value factors formation (Fig. 2), which provide increment of economic value added, are connected with goals, differentiated strategy, distribution of resources, etc.

Model of managing MVE factors on the basis of infrastructural representation of control object

Let us present the approaches to forming components of MVE: traditional one– investments, use of assets and profits. New approaches include optimizing capital structure, tax effect, disinvestment, research and development, intellectual capital (intangible assets and intellectual property), restructuring assets, modernization, innovations and development. The paper presents a model to manage MVE factors on the basis of infrastructural representation of the control object of EIA (Fig. 3) so as to make each factor match up the indices which are used in decision-making at different levels of company's management.
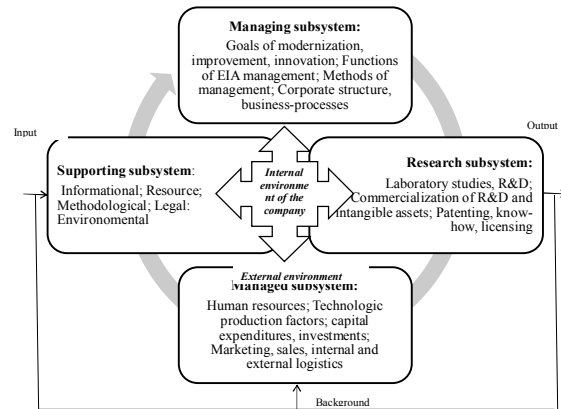
Fig.3. Infrastructural representation of the control object of EIA

Infrastructural representation of the control object of EIA is implemented in terms of value maximization (Fig. 3) and ensures efficient distribution of the enterprise's resources, which are seen as all processes of the EIA management. Infrastructural representation of the control object of EIA presence of information in managerial and supporting subsystem (goals, functions, methods, structures, etc.); availability of methodological tools of EE of EIA and methods of complex evaluation of the enterprise's innovative development efficiency including time factor and risk through mathematic modeling of stages and processes, ability to apply alternative methods of projection which enable introducing probability parameters of evaluation and allow for key factors of change in EE of EIA [3].

External environme

So, main components and factors of MVE can be divided into external and internal ones. Management has to "protect" the value from negative change of external factors through forecast or projection, i.e. minimize negative effects, and, to the contrary, maximize benefits and competitive advantages in favorable market conditions. Combination of external factors of MVE is a system of analytical indices of operational, financial, investment activities of the enterprise and its divisions. EE of EIA in terms of value approach depends on the balance between internal and external EE of required return on investment, as a rule. Moreover, if internal return is only defined by parameters of EIA and depends primarily on the balance of expenses and results, the required return relies on a number of external factors, including operational risk and selected funding structure. So, the mechanism of EE management refers to organizational management systems ensuring that a team of people work so as to reach certain goals about the company's modernization and secure increment of its market value. The control object of the mechanism (or managed system) is an organization or group of people whose activities are consciously coordinated to achieve a shared goal (maximization of value) or goals of modernization and innovative development. The essence of management is constant influence and feedback between managed and managing subsystems aimed at effective achievement of this goal.

Methods of evaluating influence of managerial decisions on innovation on enterprise's economics

In order to select the best option for modernization and innovative development and take the final decision about attractiveness of new products, one has to go by dynamics analysis of these indices and do calculations by Albakh model of synchronous investment and financial planning [4].

Maximization of return on capital employed as a criterion of the enterprise's efficiency has been rejected because the use of profit as the enterprise's performance index has a number of disadvantages:

1. Profit is a short-term index and its use as a criterion does not allow considering the long-term aspect.

2. Profit index in the explicit form does not consider the required price for the use of capital and it is difficult to compare indices in different time periods, for example, examining the system of time preferences of the investor.

3. Profit index (especially calculated in accordance with modern accounting guidelines) weakly reflects the actual volume and time when cash flows have appeared.

In the authors' opinion, the objective of value maximization (the goal is increment of economic profit or economic value added) has clear managerial advantages: it is simple to calculate, information is transparent (especially, when using multipliers of the stock market); decomposition on factors, separate business units is easy, the same as analysis of interrelation between financial decisions and profits. This statement is supported in the research paper by V.V. Kovalev [5], where he expresses the following opinion: "none of the existing criteria – profit, profitability, production volume, etc. can be seen as a round-up criterion of efficiency for the decisions made. The criterion has to be based on forecast of company's owners' profits, be well-grounded, clear and exact, be acceptable for all aspects of managerial decision-making process, including search for funding, non-borrowed investment, income distribution. The criterion of equity capital maximization (i.e. market value of a company's common shares) is believed to be such a criterion" [6].

Maximization of shareholder value (the goal is to have the biggest market value of a common share) has advantages: it accentuates long-term run; calculates risks and uncertainty; accounts for time lag in profit getting; considers profits of shareholders. It is worth mentioning one of the disadvantages of this criterion: interrelation between financial decisions and stock share rate is not considered, which can result in complications and frustration of managerial plans.

In practice, in order to assess efficiency, the following indices are applied: net profit, economic profit, profit margin, return on invested capital (ROI), return on equity (ROE), earnings per share (EPS), and proportion of cost recovery. For strategic development goals of the company such indices as net present value (NPV), economic value added (EVA), internal rate of return (IRR), profitability investment index (PI) are used. Lately, these strategic indices of managerial efficiency have included market value of the enterprise (MVE) [7].

The criterion of investment in a company's innovation program will increase (decrease) the company's market value:

$$\Delta V_m - PVI_m = \frac{p_m \times \sum_{i=1}^{N}\left(P_i \times X_i \times \left(1 - \frac{1}{k_{im}}\right)\right)}{WACC \times (1 + WACC)^{T_m - 1}} - PVI_m > 0$$

where ΔV_m is gains of a company through m-alternative development increase (decrease) of the company's market value; PVI_m-present value of investment in a company's innovation program according to m-alternative development; p_m-probability of successful completion of an innovative

program according to m-alternative development; P_i , X_i - price and volume i-the kind of productive resource to busy production;

Tab. 1. DCF and EVA model for JSC «Baltica»

Indicators	2012	2013
Earning befor interests, taxation, EBIT, 1000RUR	23 894 324	23 420 133
@Tax, %	20%	20%
NOPAT-net operating profit after taxes, NOPAT=EBIT(1-T), 1000RUR	19115459	18736106
Invested capital, IC, 1000RUR	38641750	45094052
WACC - weighted average cost of capital , %	16%	16%
EVA= NOPAT-WACC*IC, 1000RUR		**11 587 678**
Growth, g, %		30,2%
SPREAD (ROI-WACC), %	33,8%	25,7%
Value of enterprise, V according to EVA, 1000RUR		**56 681 730**
(adjusted) Net profit, NPadj, 1000RUR	18 734 202	
Annual amortization and depreciation, Am, 1000RUR	5 404 707	
change in net working capital, ±ΔNWC, 1000RUR	-8 000 310	
change in ±Δ D, 1000RUR	105 478	
change in ±ΔCapEx, 1000RUR	1 548 008	
FCF, 1000RUR	**17 792 086**	**22 952 076...**
Rate of economic growth, SG, в %	29%	
Net profit at the end of the forecast period after 2013, 1000RUR	127 318 328	
Discount rate i=WACC, %	16%	16%
Company value V according to DCF, 1000RUR		**84 227 690**

$k_i = q_{i1} / q_{i0}$ efficiency gains from the sale of m-the company's innovation program on the level of

effectiveness of i-type of productive resource; q_i - level of effectiveness of i-the type of resource, i = 1 ÷ N; Tm-time implementation of m-technology in the production system; WACC-weighted average cost of capital [8].

Conclusion

The proposed instrument should provide for effective asset management system, generating, and ensure that management decisions aimed at maximizing the market value of enterprises, in terms of resource capabilities, high uncertainty of the innovation process and the probabilistic nature of the forecast parameters. VBM approach transforms traditional views on the effectiveness, cost effectiveness indicators, economic activity of the enterprise: from relative performance (productivity, profitability) to market valuation. Realization of VBM approach requires the development and rationale underlying the principle of the market value of the enterprise: «converting business result in value enterprises», i.e. «result-formation or gains enterprises»[9].

Analysis of contemporary approaches, techniques and indices of industrial enterprises' performance makes it possible to conclude there is no single criterion, being universal from the management standpoint, so a complex approach should be used when analyzing EE [10]. Some indices can be used as local criteria either at separate stages of industrial innovation introduction, or when tackling different individual tasks.

EIA has to be managed with a structured system of indices, which allows managing goals and approving them at different levels of management and centers of responsibility plus according to stages of the company's life cycle. Such an approach justifies the necessity to build up a consistent structure of goals and develop procedures for decision-making to help provide well-directed management of EE of EIA from the positions of the general strategy that has been worked out (focus has to be on controlled parameters of EIA). This comes into agreement with the principles of purpose approach to the company's efficiency management.

Corresponding Author:
Dr.Iakovleva Elena Anatolievna
St.-Petersburg State Polytechnical University
Polytechnicheskay str., 29, St-Petersburg, Russian Federation

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