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METHODOLOGICAL ASPECTS OF MAKING THE STRATEGY MAP BSC IN FORWARDING COMPANY

Setting the problem. Economic growth in Ukraine in the context of globalization of economic relations can be achieved only in the presence of a competitive and reliable functioning transport sector as a key element of providing material production and social infrastructure. In Ukraine's economic development a stage when the transport complex must pass from normative state support and infrastructure upgrades to its development through innovation and technological breakthroughs has come. Functioning of freight forwarding business in highly competitive conditions not only in domestic market but also in foreign economic activities has defined objective need for reorientation of management system to provide customer-oriented development strategy and identify critical success factors in creating future cost of the business.

The analysis of recent research and publications. The issues of developing enterprise economic management methods are highlighted in the works of such scientists as M.G. Bilopolskyi, N.V. Barker, V.M. Kolossok, N.A. Kulikova, O.I. Lysachenko, T.G. Logutova, N.P. Lyubushyn, V.O. Metz, O.I. Momot, E.V. Nyehashev, V.P. Poluyanov, F.Yu. Poklonskiy, G.D. Potopa, G.V. Savitskaya, R.S. Sayfulin, A.D. Sheremet, A.V. Cherep. However, the issue of selection of indicators that would be able to evaluate the efficiency of the entire company activity, according to its functional and competent role needs further refinement.

Setting the objective. The aim of the paper is to study the scientific and methodological aspects of the strategy map formation of forwarding company. As the research objectives we have identified: rationale of strategic prospects of the enterprise, the formation of value-oriented balanced scorecard of the enterprise.

The main material of research. A central task in the system of justification of the entity development strategy is to identify its current financial situation and determine the level of using potential opportunities based on economic analysis of the efficiency of the enterprise activity as a whole and its individual components. For domestic freight forwarding companies the task of evaluating the efficient activity and determination of the company market value indicators become very important. In the 90s of XX century, one of the most promising tools for improving the efficiency of the firms abroad and in domestic commercial and industrial holdings was the methodology of Balanced Scorecard formation (Balanced Scorecard) developed in the USA by R. Kaplan and D. Norton. The implementation of the balanced scorecard (BSC) in planning and controlling business processes provided ultimately the growth of business capitalization.

One of the latest methodological concepts of strategic enterprise management, which is directly related to its implementation in practice of the system of performance indicators, is the methodology of making "strategy maps" of the company development. Using this methodology allows providing the implementation of the proposed system of indicators for assessing management effectiveness of both the design and implementation of the overall business strategy [5, p. 249].

A strategy map created at any level of the hierarchy of the forwarding company is a logical description of the strategy implementation model and illustrate cause-and-effect relationships between individual goals, integrated by four "perspectives" of the balanced scorecard.

The algorithm for making value-oriented strategy map should include the consistent implementation of a number of stages:

1. strategic analysis of the company;
2. making a model of forming the target value indicators of the balanced scorecard (BSC);
3. decomposition of the company strategy into strategic objectives that are shared by five "perspectives";
4. ranking of the sub-targets for the degree of influence on the "levers of value creation";
5. formation and analysis of causal and consequence relationships.

Stage 1. The purpose of strategic analysis is to determine the "bottlenecks" of the forwarding company (holding company), the assessment of trends, opportunities and risks in their development, the comparison of the company work results with the activities of competitors in the market of forwarding business as well as the accumulation of corporate knowledge.

The strategic analysis of the operation of the forwarding organization as a means of converting a database derived from the analysis of the potential and the environment in the strategic plan of the company can be divided into two main phases:

– the comparison of the guidelines outlined by the company and real opportunities offered by the environment, the analysis of the differences between them;

– the analysis of the possible versions of the future organization development, the identification of strategic alternatives.

The integrated database for strategic analysis of the forwarding organization should be formed in the process of analyzing the macroenvironment, analyzing the nearest external environment, doing management analysis, portfolio analysis, competitive analysis, marketing, financial and investment analysis.

Stage 2. The proposed design methodology of value-oriented balanced scorecard (BSC) provides as a criterion for strategic planning the forwarding company – maximizing market value of the business. Considering the advantages of the EVA indicators, a target indicator "market value of the company's business" as the value of net company assets plus the total economic value added for the billing (forecast) period of activity, reduced to the present point of time is proposed to calculate (1):

$$PV = NA_{t=0} + \sum_{t=0}^{T} \frac{EVA_t}{(1+d)^t} \qquad (1)$$

where: PV - the market value of the company at the end of the billing period (Present value of business);

$NA_{n=0}$ - net assets (Net Assets) at the beginning of the period;

EVA_t - economic value added in this or that year, t = 1, ... T;

d - the discount rate;

The indicator PV reflects the cumulative value of the company with regard to the planned performance for the billing period and can be used by owners as exemplary evaluation of the business in case of its sale (takeover or merger).

It should be noted that the forwarding companies (FC) can relate to the capital-intensive and staff-dependent companies according to the type of businesses orientation [1].

In the "capital intensive" companies that have their own fleet of vehicles, storage and terminal areas, repair shops, lifting and transport and diagnostic equipment, etc., the market value of a business is determined, first of all, by the effectiveness of the invested capital.

In the "staff-dependent" companies, which economic policy is based on the attraction (outsourcing) to implementing the forwarding service contractors (carriers, warehouses, terminals, etc.), that possess the aforementioned assets; the effectiveness of functioning depends on the qualifications of the personnel and motivation of increasing their productivity. Costs on motivation, recruitment, training and staff retention are the costs of the intellectual resource of the company. To determine the mechanism of value creation, FC with high overall personnel costs that far exceed the capital should use those criteria for evaluating their productivity, which from a financial point of view would be no less accurate than measuring the economic value added (EVA), but at the same time they would reflect the productivity of the staff, but not the capital.

Consider one of the options for calculating the EVA indicators [4; 6; 10]:

$$EVA = NOPAT - Capital \qquad (2)$$

where: $NOPAT$ (Net operating profit adjusted taxes) – net operating profit of the company from core activities; $Capital$ (Cost Of Capital) – cost of the company's capital (equity and debt).

NOPAT reflects the results of the company activities without the cost of capital attracted.

$$NOPAT = EBIT + \text{Pr\_}D + \text{Pr\_}leas + Am\_Goodw + \Delta LIFO - [T - \Delta Det\_tax + \\ + (\Delta Def\_tax + \text{Pr\_}leas)*n] \qquad (3)$$

where: $EBIT$ – Profit before interest and income tax; $\text{Pr\_}D$ – interest income; $\text{Pr\_}leas$ – interest on lease payments; Am_Goodw – depreciation on goodwill of the reporting period; $\Delta LIFO$ – increase of the reserve account LIFO; T – payments of income tax; ΔDef_tax – increase in deferred taxes; n – tax rate of tax.

$$EBIT = OI + \text{Pr\_}rec + \text{Pr\_}pay + Out\_G - Out\_E \qquad (4)$$

where: OI – operating income; $\text{Pr\_}rec$ – interest receivable; $\text{Pr\_}pay$ – interest payable; Out_G – non-operating gains; Out_E – non-operating expenses.

$$OI = GM + OG - OE \qquad (5)$$

where: GM – Gross margin; OG – Operating income; OE – Operating expenses.

$$GM = \sum_{i=t}^{k} S_i - Cost_i \qquad (6)$$

where S_i – revenues from sales of another type of service; $Cost_i$ – cost price of another type of service.

Further details of estimated indicators may be necessary.

$$Capital = WASS * CE \qquad (7)$$

where CE (Capital Employed) – invested capital – volume of investments in operating activities; $WACC$ (Weight Average Cost Of Capital) – weight average costs of capital,%

$$CE = TA - NP \tag{8}$$

where: TA (Total Assets) – total assets; NP (Non Percent Liabilities) – interest-free current liabilities, i.e. accounts payable to suppliers, budget, other payables, advances received and other accrued charges.

$$TA = WC + N\_FA + N\_\Pr TA \tag{9}$$

where: WC – working capital (current assets net of short-term liabilities); N_FA; net fixed assets (net of accumulated depreciation) $N\_\Pr TA$ – net other assets (net of accumulated depreciation on goodwill).

WACC can act as a discount rate (is the temporary value of money), by which the present value of the cash flows of the company is calculated. Index WACC is the cost of all sources of long-term business financing.

$$WACC = Ks * Ws + Kd * Wd(1-T) \tag{10}$$

where: Ks – Investor required rate of return (on equity),%;

Ws – share of equity,%.

Equity includes all common stocks, preferred stocks and minority ownership interests in consolidated units and quasi equity capital – reserves to smooth earnings dynamics, which in accounting are classified as liabilities; Kd – cost of debt, i.e. interest rate on loans, borrowings, payables (to suppliers, employees with payroll, budget and extra-budgetary funds, other payables), % ; Wd - share of debt, % , T - income tax rate,%.

Analysis of the algorithm of forming the economic value added of capital intensive forwarding company indicates the significance of the cost of capital indicator, its share in the total liabilities of the company and risks. Managing the increasing cost of capital intensive FC (Holding) is based on the use of three "levers":
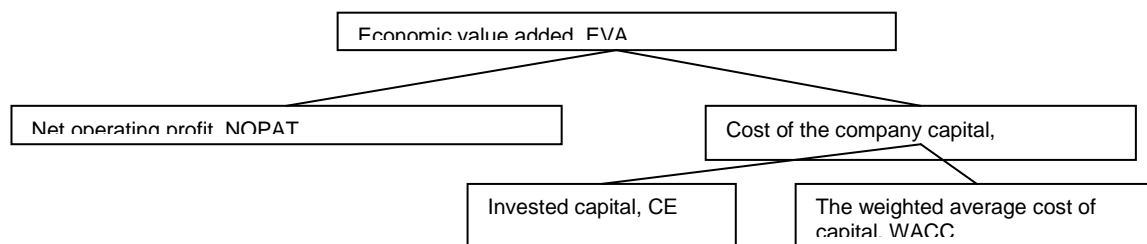

Figure. 1. Scheme of forming the EVA of forwarding company
Source: Developed by the author

– increase of profitability (NOPAT) – cost reduction, revenue growth, productivity growth of resource return of the forwarding organizations infrastructure, increase of the intellectual capital cost;
– effective financial activities (WACC) – managing the liquidity and solvency, financial leverage (total assets / equity) risks;
– effective use of invested capital (IC) – increase the turnover of the capital (inventory management, accounts receivable, withdraw unused assets from business) increase profitability of investments into core activity, in innovations, in the brand.

If you select the variant of strategy development of FC (holding), identifying key performance indicators of each "perspective" BSC and then the in establishing target values KPI it is proposed to use the results of determining the degree of impact of cost factors that form the target index EVA, that are derived from the application of multivariate correlation and regression analysis.

When modeling the target index EVA it is required to use retrospective information on financial performance, functioning of the forwarding company for several years (based on the data "Report on profit and loss account", "Report on Cash Flows" and "Balance").

Function Y, approximately expresses the dependence of EVA from key value drivers. This function is represented in the regression equation:

$$Y = f(X1,X2, ... Xk) \tag{11}$$

Determination of regression begins with F-test "Do the *X*-values explain significant proportion of variation index EVA», one of the methods of which is to compare the estimated value of the coefficient of determination R^2 with the values in the table of critical values (table is formed by the number of observations and the number of *X*-variables).

If the regression is a significant (the calculated value of R is above critical), so the relationship exists and you can start for it studies, so-called, t-test for individual regression coefficients.

In this case for exclusion of "ordinary" information, which the integrated cost parameters are carried, entrance *X*-variables for the multiple regression are adopted the initial parameters of the lower levels of the

hierarchy "tree" EVA, which, in turn, checked for multicollinearity by the analysis of two-dimensional correlations for each pair of variables.

The high correlation (in absolute value is more than 0.8) indicates on the significant correlation between the two X-variables and suggests that these variables measure very similar characteristics that bring into the analysis the "ordinary" information. In this case, the main statistical result is a growth of standard errors of some or all of the regression coefficients.

To exclude the cost parameters that duplicate the identical information, you can combine them into a single index, using their average value, or override some of them so that each X-variable perform distinct role, inherent only it alone in the determining Y.

For the representation of the group informatively "ordinary" factors it is necessary to form the index, or take one of them and introduce others as relative indicators (value per unit of the other indicator), constructed from this cost indicators.

The pair correlation analysis of new X-variables should show a statistically insignificant correlation between X-parameters. By excluding multicollinearity of X-variables, t-test shows how significant is the impact of a cost figure on the value of the indicator EVA, provided that all other X-parameters remain unchanged.

As a result of analysis of the significance coefficients of the regression equation using the Student's criterion [9] may prove that not all the coefficients are significant. So respectively, it is necessary simplify the model EVA by dropping out the factors that have the least impact on the target indicator.

It is recommended to analyze the dispersion diagrams that are constructed for each possible pair of variables (functional and arguments) in cases of non-linearity regression equation, unequal variability of values Y, sharply rejected values of the X-parameters.

Identify the major factors that form the target indicator EVA is also possible with methods of deterministic factorial analysis, expert evaluation, or by applying the formula elasticity – the differentiation of index EVA for each of the factors ($Eyx = dY/dX*X/Y$), where Eyx - elasticity of indicator Y (by the indicator X), suggesting the influence of changing factor on 1% only on the resultant indicator without the horizontal effect on other factors.

Possible scenarios of the development of the forwarding company show a positive or negative value of final indicator EVA. On this basis it is possible to form strategic options of the company and to track the impact of specific strategies on the growth of its value.

Indicators of value added, profitability of the capital on cash flow, cash value added are based on the data report on profit and loss (report on the cash flows) and the balance sheet of the company. The calculation of value growth of the company is based on the calculation of the expenses on the capital with the value of profit.

These methods are based on the market assessment of financial statements. The indicators of financial statements will be much closer to reality in comparison with the figures of tax when using the International Financial Reporting Standards - IAS / IFRS or US GAAP.

There is the increase in value of the company, in the case where the value of the company's revenue exceeds the full amount of the costs, including the amount of expenditure on capital. Arithmetically increase in value is calculated by the less costs on the own and borrowed capital with the value of the company's profits [8].

Ensuring the process of implementation of growth of company's value at the operational level is based on the identification of the factors of value creation.

The final indicator of value growth is associated with the other costly and invaluable indicators. This approach provides a transparent value-oriented management.

With the help of sensitivity analysis and modeling can identify the most important factors of the creation of value of the company. We can draw conclusions about the chances and risks of future development of the company based on this factor. Different scenarios of the development of the company show a positive or negative value of the final index value. On this basis, we can form the options of strategy development of the company and track the impact of specific strategies to increase company value.

3 stage. It is necessary to implement a decomposition of company strategy into specific strategic objectives at the next step. These objectives in detail reflect the various strategic aspects and related to one of the "perspectives" of the balanced scorecard.

The concept of governance based on the joint use of the balanced scorecard and orientation to increasing the market value, the strategic objectives "perspectives" of the model BSC of logical-causal are related to the factors of the creation of the company value.

Achieving the target value of the indicator of growth of market value depends on the implementation of three aforementioned "levers" that belong to the perspective "Finance": strategic objectives that are related to increasing profitability, due to the growth of the potential of the company, profitability of used capital, profitability of invested capital.

Strategic objectives that are related to the prospects of "Clients", "Supplier", "Business processes" and "Intellectual potential" become link in the system of cause and effect relationships, which ensure the implementation of financial goals.

The process of defining the strategic objectives of the BSC is associated with the choice of a limited number of targets with a sufficiently large set of primary formulations. The internal critical factors of success

FC define the semantics. During this process the strategy of companies is concretized and strategic objectives of the upper level of the hierarchy on some "prospects" are distributed.

4 stage. We propose to conduct the expert evaluation of objectives for construction of the "tree of objectives" of transport and forwarding company (holding) during the discussion on the corporate seminar FC one of the methods of expert surveys (questionnaires and interviews, brainstorming, discussion, meeting).

Experts rank objectives by the degree of significance in accordance with the strategic concept of the company and the impact on the cost parameters that form the target index of EVA [2, 3, 7].

As a result of expert evaluation from the list of proposed objectives for discussion are selected 25-35 critical to achieve success (5 for "perspective") that meets five requirements:

– relationship with business processes of considered business unit and / or the structural unit;

– significance, which does not lead to an underestimation of the basic objectives, the achievement of which provides the current economic activity of transport and forwarding company;

– balancing – holistic (cost and invaluable) and the difference in time (short and medium term) the nature of effectiveness;

– interconnectedness – the decisions of previous objectives should create a basis for further action and simultaneously objectives should enhance the effect of each other;

– in the process of implementation of the strategy, the range of the considered objectives narrows, maximum approaching to the expected result.

Thus, the manager of the process is assigned for every purpose to avoid the "fragmented" responsibility for the implementation of narrow-purpose.

For transport and forwarding holding where business units have goals that are associated with the specifics of the activity in cascading BSC some strategic maps are composed.

At the same time strategic maps of business units should include objectives that are directed to achieving the objectives of the parent company, requiring the participation of other companies (subdivisions) that belong exclusively to this business unit.

5 stage. We consider the algorithm of formation of causal relationships in constructing strategy maps, which provides the union of two approaches: at the first financial goals are combined with each other, starting with the primary financial target of "top level" (chart "leverages" of the cost that is used within the concept of value and oriented management), then – all targets remaining perspectives ("bottom-up").

On the one hand, this method is based on the deductive principle, according to which objectives of output prospects "Finance" are decomposed into the separate components, and if one of the objectives of "lower levels" – one of those components, so it is associated by the causal chain with the purpose "top level", thus you can check the completeness of the system of the developed objectives.

On the other hand, the perspective "The intellectual potential" is provided the role of the base strategy: the general orientation of the system of objectives to the perspective "Finance" is observed; it is conducted the analysis of paired relations objectives within and between components of perspectives "The intellectual potential" ("human capital", "information capital" and "organizational capital"), and then – with the objectives of other perspectives.

So the principle of conformity the goals and objectives is complied. This principle is conducted in the organization "top down" to the real possibilities of improving the activity of "bottom up".

Previously for each combination of strategic objectives with the help of the matrix "cause-effect" (Table 1) expertly checked the direction and intensity of the relationships between them (from "0" to "3").

Table 1

The matrix "cause-effect"

Perspective	Finance			Clients			Business processes			Intellectual potential		
Objectives	F_1	...	F_f	K_1	...	K_k	B_1	...	B_b	I_1	...	I_r
Intellectual potential												
I_1	0	...	0	2	...	3	3	...	1	0	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...
I_r	2	...	3	3	...	2	3	...	1	3	...	0
Business processes												
B_1	0	...	2	2	...	3	2	...	2	0	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...
B_b	1	...	0	2	...	3	1	...	2	1	...	3
Clients												
...	...	...	...	...	...	...	...	...	...	...	...	...
Finance												
...	...	...	...	...	...	...	...	...	...	...	...	...

where: F_1 ... F_f, K_1 ... K_k, B_1 ... B_b, I_1 ... I_r – objectives of prospects "Finance", "Clients", "Business processes" and "Intellectual potential" appropriately.

The objectives where causal relationships are determined strategically significant (intensity of interaction "3" and "2" points) are displayed on the projected strategic map of objectives.

It is possible adjustments previously formulated strategy of transport forwarding company based on the analysis of the relationship objectives and developed of the causal and effective chain.

The developed model of cost and oriented system of indicators is recommended for use as a mechanism for management of the cost of transport forwarding enterprise. Cost and oriented system of indicators is a combination of institutions, forms and methods of influence on the business processes that are used for management market value of the enterprise and its maximization.

Implementation of strategy with the use of cost and oriented system of indicators is performed in a continuous cycle that includes planning, fulfillment of the plans, analysis of performance and making adjustments to the plans according to the results of the conducted analysis (Fig. 2).
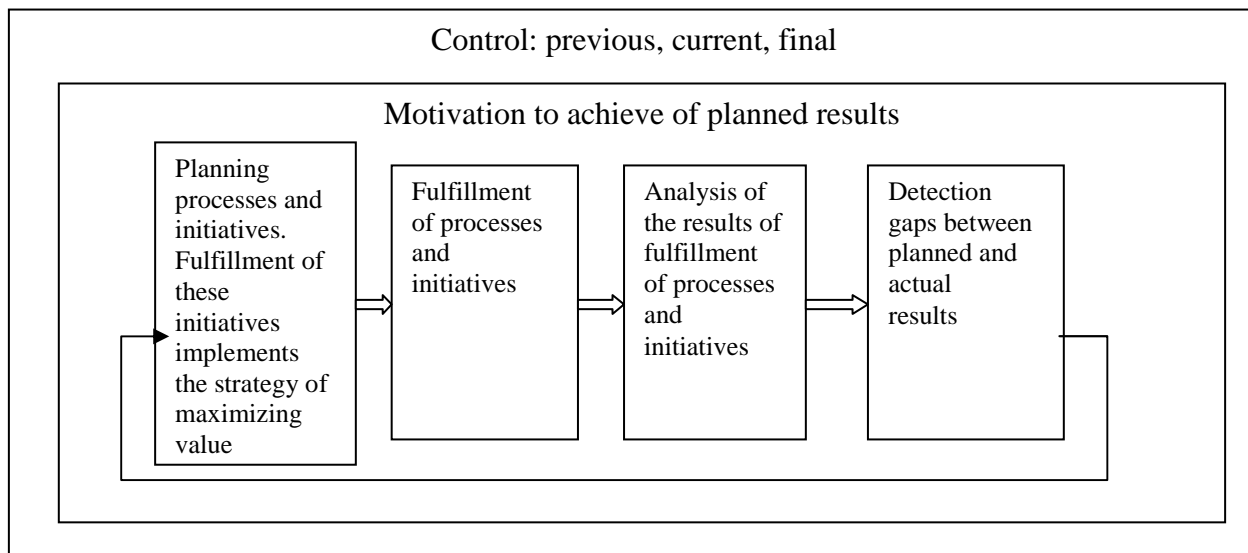

Figure 2. Functions of the mechanism for implementing the strategy of using cost and oriented system of indicators

Source: Developed by the author

Planning processes and initiatives, the implementation of which realizes a strategy to maximize value are implemented in a format of strategy map – a system of interrelated objectives, selected according to the cost of the proposed template of cost and oriented system of indicators, system of indicators that are appointed to measure the degree of achievement of strategic objectives and strategic initiatives – measures and projects that are designed to achieve target values of indicators of cost and oriented system of indicators.

Implementation of planned indicators by using of cost and oriented system of processes and initiatives is the realization of a strategy to maximize value.

Conclusions and further research. In the process of research it has been substantiated developed and adapted to the conditions of functioning of the transport business methodical approach to constructing the strategy map of enterprise. The application of the strategy map provides formation of the active behavioral position for all levels of government and control over the achievement of the strategic objectives of all structural divisions of the enterprise.

It has been determined the composition of the methodical approach to evaluating the effectiveness activity of structural subdivisions of transport and forwarding company; it has been singled out stages and procedures for evaluation activity; it has been proposed components and indicators of systems KPI for each subject of evaluation.

The further researches will be focused on finding the most optimal ways of forming the strategic business card of entities of the internal market of transport and forwarding services in the context of the identified features of the development of its segments.

References

1. Barber, F., Shtrak, R. (2005), "Amazing economics staffy-dependent business", *Harvard Business Review*, no. 7, pp. 29-37.

2. Gershun, A.A., Nefedyeva, Yu.S. (2005), *Razrabotka sbalansirovannoy sistemy pokazateley* [Development Balanced Scorecard], practical guide with examples, ZAO «Olimp Bussines», Moscow, Russia, 128 p.

3. Markova, V.D. (1996), *Marketing uslug* [Marketing of the services], Finansy i statistika, Moscow, Russia, 128 p.

4. Rasskazov, S.V. and Rasskazova, A.N. (2002), "Cost methods of evaluating the effectiveness of the company's management", *Finansovyy menedzhment*, no. 3-4, available at: http://dis.ru/library/fm/archive/2002/3/631.html

5. Pokanevych, Yu.V. (2009), "Methodology and basic concepts of development "strategy map" of the company", *Torhivlia i rynok Ukrainy,* Iss. 28, no. 2, pp. 247-252.

6. Samoylovich, V.G. (2006), *Tekhnologiya otsenki avtotransportnogo biznesa* [The Technology of estimation vehicle business], Publish. Centre «Akademia», Moscow, Russia, 199 p.

7. Shinkarenko, V.G. and Bondarenko, A.S. (2003), *Upravleniye konkurentosposobnostyu predpriyatiya* [Management competitiveness of the enterprise], KhNADU, Kharkiv, Ukraine, 186 p.

8. Scherbakova, O.N. (2003), "Application of modern technologies of business valuation", *Finansovyy menedzhment*, no.1, available at: http://dis.ru/library/detail.php?ID=23374.

9. Student criterion, available at: http://ru.wikipedia.org/wiki/Т-критерий_Стьюдента

10. Kaplan, R.S. and Norton, D.P. (1992), "The Balanced Scorecard - Measures then drive Performance", *Harvard Business Review,* vol. 70, no. 1, pp. 71-79.

Kobal I.O. METHODOLOGICAL ASPECTS OF MAKING THE STRATEGY MAP BSC IN FORWARDING COMPANY

Purpose. Justification of strategic perspectives of the enterprise, the formation of value-oriented system of the company balanced scorecard.

Methodology of research. The paper used general scientific and special methods that allowed solving the problematic issues of the selected research. Methodological foundations of research are a systematic approach to the analysis of economic phenomena and processes, basic tenets of modern economic theory, management and theory of enterprise management strategy. The study was conducted with the following research methods: a theoretical generalization and comparison (determining the nature of the concepts of "system of strategic enterprise management", "value - oriented management", "Balanced Scorecard"); comparison; statistical analysis and synthesis, methods of economic and mathematical modeling.

Findings.. The process of formation and use of strategy maps has been investigated; the stages of making strategy maps to implement the goals of strategic enterprise management have been highlighted. The order of calculation the strategic indicators and peculiarities of their use in the workplace have been determined. The rationale for the choice of strategic objectives in a balanced scorecard model, the algorithm of value - oriented strategy map, the algorithm for determining target values of key performance indicators and possible adjustments caused by risks that accompany Forwarding business has been done.

Originality. New approaches to making enterprise strategy map and identifying targets of value-oriented balanced scorecard have been offered. The key performance indicators for each "perspective" of balanced scorecard and in setting target values have been defined.

Practical value. The methodology of making the strategy map of forwarding company and the method for determining the estimated performance of forwarding activities that can be used in developing business strategies for the short and long term have been formed.

Key words. strategy maps, efficiency, forwarding companies.