

DIRECTIONS FOR IMPROVING INFORMATION SUPPORT FOR STRATEGIC MANAGEMENT ACCOUNTING

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Research Article

Directions For Improving Information Support For Strategic Management Accounting

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ABSTRACT

The article develops a set of strategic potential indicators that allow a comprehensive assessment of the effectiveness of the strategic management system. It is substantiated and a model form is proposed to create a strategic forecast balance sheet that assesses the potential of enterprises to achieve their strategic goals. The methods for doing appropriate analytical calculations using the strategic forecast balanced, objective evaluation of the findings, and determining the causes of deviations are demonstrated.

The article proposes to consider the identification of effective ways to achieve the strategic goal through the assessment and analysis of strategic potential. For strategic purposes, it is recommended to establish a strategic development and reproduction link for the effective use of strategic potential.

It is recommended to use the methodology of fuzzy set theory for the integrated assessment of strategic competence, based on the views of economists and study of the practices, as well the characteristics of the industry. In order to establish a logical relationship, the values of the strategic potential of the state enterprise "Navoi Mining and Metallurgical Combine" for 2020-2024 were calculated by applying the process of defazation in the change of numerical and non-financial data in different directions.

Keywords: Strategic Management, Strategic Potential, Specific Indicators, Balance Ability

INTRODUCTION

In the context of global economic integration, special attention is paid to scientific research to improve the methodological base of strategic management accounting in the development and implementation of long-term strategies for enterprise development. These studies determine the algorithm for calculating indicators used in strategic management accounting, the organization of strategic management accounting at enterprises, the creation of its information support, cost accounting, forecasting and modeling. Improved issues such as the theoretical foundations of the organization of strategic management accounting based on the experience and scientific achievements of developed countries, the methodology for assessing the effectiveness of resources in achieving a strategy, the system for providing management with operational information and

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the application of analytical methods in assessing strategic potential. However, these scientific studies do not fully cover the issues of practical organization of strategic management accounting, methods of calculation and analysis of strategic potential have not been improved, its methodological basis does not meet the requirements of the modern competitive environment.

The process of strategic management accounting in enterprises requires the study, assessment and analysis of many internal (micro) and external (macro) environmental indicators that affect their activities. The effective organization and maintenance of strategic management accounting in enterprises depends in many respects on the formation of a system of balanced indicators that form a strongly interconnected system.

Based on the research of foreign and domestic economists in this field, as well as the practical experience of the state enterprise "Navoi Mining and Metallurgical Combine" and JSC "Almalyk Mining and Metallurgical Combine", the formation of a system of planning and analytical indicators at enterprises was critically examined.

Based on the results of the study, the essence of the method of strategic analysis, forecasting and planning, as well as the modeling of the scenario, which fully reflects the needs of the individual enterprise, was widely covered. It was concluded that using this model, it is necessary to compile a strategic management report, which includes important analytical and forecasting indicators (1, 3).

MATERIALS AND METHODS

The main task of strategic management accounting is identification, analysis, rational use of effective ways to achieve the set strategic goals, saving resources and increasing the efficiency of their use.

Based on the results of the scientific research, we propose to expand this task by evaluating and analyzing the strategic potential (1, 3).

For this purpose, we recommend considering and evaluate the two most important aspects of any enterprise, namely the strategic potential to determine the relationship between strategic development and reproduction. This is because the development potential of an enterprise depends on the economic use of available resources, the maximum amount of resources, the strengthening of competitive position, the development of management skills, skills and organizational knowledge. At the same time, it is no longer directly dependent on reproduction, which is an existing condition of the business, but also on innovation and internal change, which are determined by changes in external and internal environmental requirements. Corporate knowledge expansion, innovation, and investment processes are all introduced through the development connection.

In Figure 1, we describe the relationship between these two contours, which reflects the strategic potential of the enterprise, namely production potential (amount of material, labor and financial resources) and development potential (investment, innovation and information potential).

In a strategic management accounting system, the dual nature of strategic competence makes it possible to have a comprehensive understanding of it, creating the conditions for a comprehensive approach to its evaluation. In addition, in the strategic management accounting system, the task of providing accounting and analytical functions such as evaluation, analysis, and a clear idea of the strategic potential is of primary importance.

Our offer-based approach, regardless of the form of ownership and type of activity, provides a real opportunity to effectively organize and maintain a strategic management account in any enterprise.

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We propose to implement this mechanism in practice in the following two stages:

1. Creating a strategic forecast balance sheet, which includes several factors that reflect the strategic potential of the enterprise.
2. Modeling the strategic development of the enterprise.

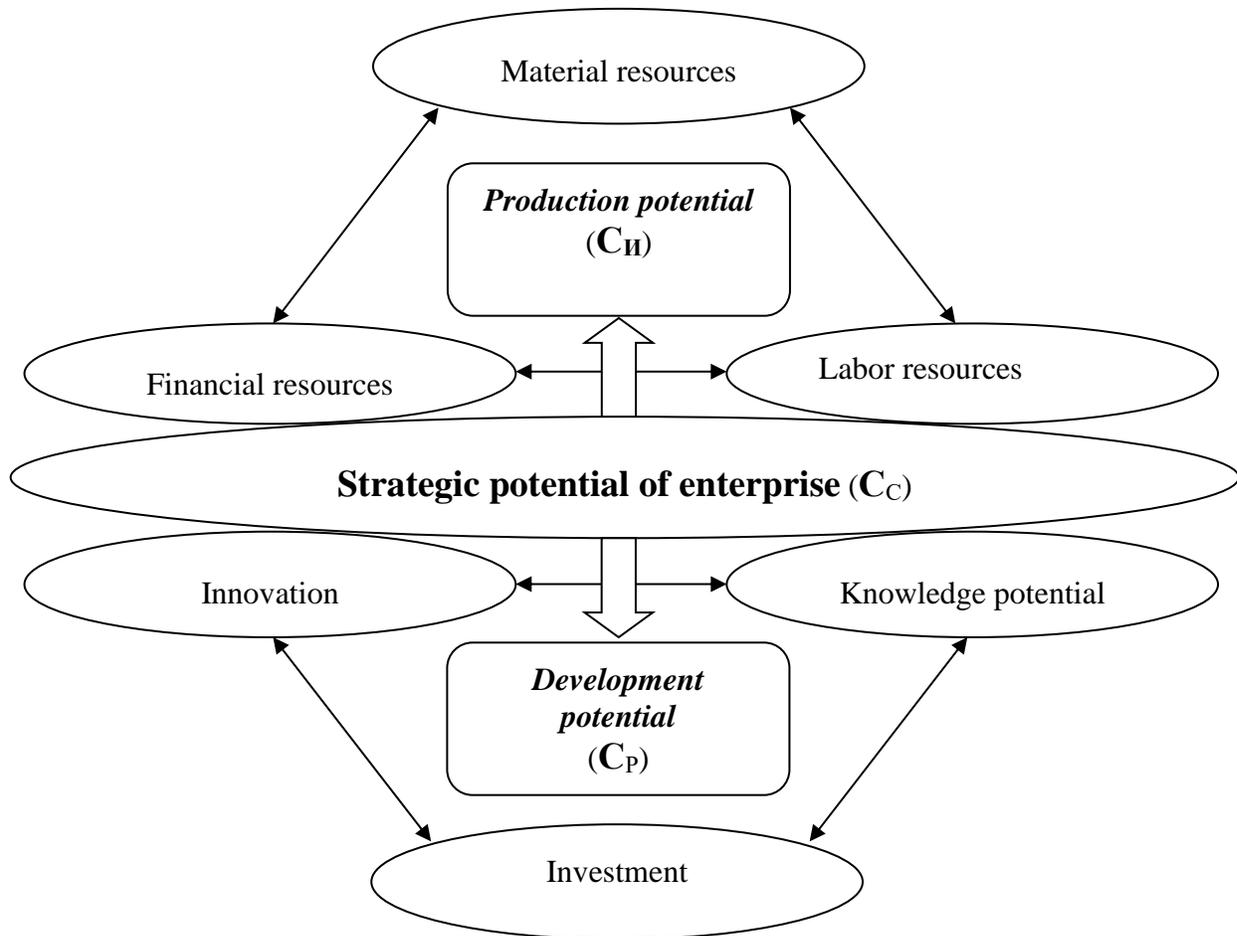


Figure 1. The relationship between two strategic potential links

It is necessary to create a strategic forecast balance sheet, which includes the main sources of financial and economic activity of the enterprise as a source, i.e a form of reporting in the proposed system. The report is compiled in summary and summarizes the analytical indicators that allow assessing the financial and economic performance of the enterprise in the near strategic future.

The strategic forecast balance, chosen as a method of strategic management accounting, allows for the regulation of current operations related to the enterprise's strategy implementation. Such a regulatory process is carried out on the principle of feedback by comparing the planned and actual achieved amounts of control indicators.

Most importantly, in the proposed strategic forecast balance sheet for the organization and maintenance of strategic management accounting in enterprises, as noted above, it is proposed to take into account not only the strategic parameters of financial indicators but also indicators with non-financial characteristics. It, in turn, means that in order to achieve a strategic goal, enterprises

must take into account not only the resource potential (material, financial and labor) but also a set of important factors that enterprises have not yet considered.

Thus, a consistent sequence between the strategic and operational levels of management is maintained and a significant alignment of current operational and strategic forecasts and plans is ensured.

According to the results of the study, the analysis of the strategic forecast balance in the implementation of strategic management identified three functional areas that are inextricably linked with the processes of formation:

- to make strategic decisions and formulate new tasks;
- continuous monitoring of the status of achieving the defined strategy by monitoring the financial and non-financial indicators set in the strategic forecast balance, ie the set of strategic potential indicators (**k_{CCKM}**);
- revision of changes in strategic directions and the chosen strategy.

In our opinion, the implementation of the strategic forecast balance of the identified functional areas depends in practice on the continuity of the three main periods: preparation, formation and forecasting cycles.

RESULTS

An example of a strategic forecast balance sheet that can be formed in an enterprise based on the above proposal is given in Table 1.

The proposed table has a model status, and due to the number of financial and non-financial indicators in enterprises, their items, as well as the significant size of the data of **k_{CCKM}**, information on them is not provided separately.

The strategic forecast balance dramatically increases the necessary integrity of the database and its effectiveness in strategic management decision-making, ensuring the rapid integration of the database with internal organizational knowledge at the expense of strategic management. However, the forecast balance, which is a central element of enterprise strategic management accounting, should not be considered in isolation from other forms of strategic reporting. To be more precise, it is recommended to always form a strategic forecast balance using strategic management reporting forms such as profit forecast, cash flow budget, capital and investment budget, market share growth forecast and similar reporting forms.

The important internal correlation between these recorded reporting forms and the strategic forecast balance is that they detail the structure of key items, changes in their quantities, and several **k_{CCKM}** calculations.

Table 1

Strategic forecast balance of the State Corporation "Navoi Mining and Metallurgical Combine" until 2024

#	Balance indicators	2020 actually	2021	2022	2023	2024
Forecast of financial indicators (billion soums)						
1.	Working capital	3 978,5	5 262,2	4 735,9	6 014,6	8 300,2
2.	Non-circulating assets	14 097,5	18 251,2	16 426,1	20 861,2	28 788,4
3.	Financial resources	3 549,4	6 174,7	5 557,3	7 057,7	9 739,7
4.	Financial investments	12,7	32,6	29,3	37,2	51,4

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#	Balance indicators	2020 actually	2021	2022	2023	2024
5.	Securities and intangible assets	71,8	78,5	70,7	89,7	123,8
	Total assets	21 709,8	29 799,2	26 819,3	34 060,5	47 003,5
6.	Capital and reserves	5 460,3	9 096,7	8 187,0	11 797,5	18 280,6
7.	Undistributed profits	5 243,7	6 252,3	5 627,1	5 746,4	5 830,0
8.	Liabilities	11 005,9	14 450,2	13 005,2	16 516,6	22 792,9
	Total liabilities	21 709,8	29 799,2	26 819,3	34 060,5	47 003,5
	Financial Indicators Index	1,0	1,37	0,90	1,27	1,38
Forecast of non-financial indicators						
1.	Level (index) of innovative activity	1,0	1,20	2,20	2,5	3,0
2.	Level (index) of investment activity	1,0	1,05	1,20	1,25	1,30
3.	Knowledge potential index:					
	3.1. Level of intellectual potential of specialists (index)	1,0	1,50	2,30	2,80	3,30
	3.2. IT technology efficiency (index)	1,0	1,50	2,50	3,0	4,0
	Index of non-financial indicators	1,0	1,3	2,1	2,4	2,9
	Total	2,0	2,7	3,0	3,7	4,3
	Strategic Potential Index (SPI)	1,0	1,3	1,5	1,8	2,1

They, in turn, provide an opportunity to perform appropriate analytical calculations, objectively evaluate the results, to determine the causes of deviations.

It should be noted that experts in the mining and metallurgical industry of the economy have identified the following models for the methodology of developing a strategy for the development of minerals (2):

- indicative planning models;
- prospective planning models;
- strategic planning models.

The strategic forecasting model has a significant advantage over planning models in the following features:

- the forecast depth is much larger than the planning depth;

Unlike planning based on relatively precise details of project decisions, strategic forecasting relies on long-term stable changes in key parameters of socio-economic development, the dynamics of change of indicators play an important role in planning, so the number of such indicators is very high. Forecasting is usually limited to a few control points over some time (after 5-10 years). It is the basis for the formation of forecast models, which are the main factual

and project descriptions of operational and tactical planning of objects, supplemented by forecasts of their change, and the generality of time intervals allows simultaneous development and mutual correction of forecasting and planning models (Figure 3).

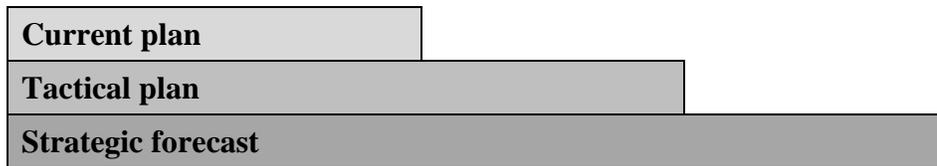


Figure 3. Diagram of common time intervals for forecasting and planning modeling (2).

These listed features of strategic forecasts indicate that the main content of forecasting models consists of expert assessments developed by a group of experts in the field, regional and functional areas, and planning and design specialists supplement these assessments with calculations. Forecasting models also identify the main demand for methodological tools for forecasting regional development, which form the basis of information and institutional models of regions.

Figure 4 below shows three scenarios for the development of a gold mining complex based on the Muruntau deposit.

The pessimistic scenario involves the cessation of resource development at the same time as the end of mining operations in the quarry. At the same time, gold production will end in 2030-2035 and the number of workers will decrease from 21 thousand to 15-17 thousand.

The optimistic scenario involves the development of off-contour areas of the quarry in the open underground method, as well as the selective leaching and development of tailings. In this case, gold production will be reduced by 25 percent, but the mining department will work until 2060-2065 by reducing the number of workers from 21,000 to 12,000-10,000.

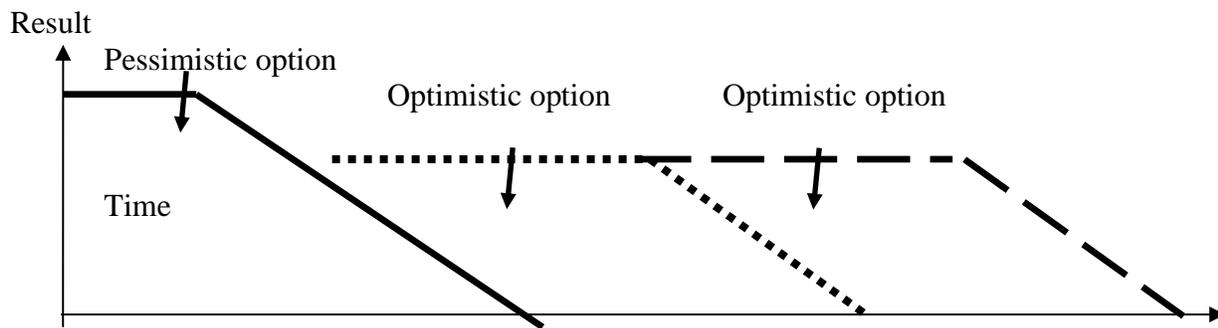


Figure 4. Scheme of scenario variants of development of gold-mining complex based on "Muruntau" reserves (2)

The data of the Navoi Mining and Metallurgical Combine were used as the basis for our proposed modeling.

The study of the strategic potential (C_C) of the Navoi Mining and Metallurgical Combine revealed a synergistic combination of two secondary productions (C_H) and development potentials (C_P), the features of which have been formed in the market of mining and metallurgical products:

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$$C_C = C_H \oplus C_P;$$

The operator \oplus in this equation represents not a simple sum of two potentials, ie the production and development potential of the plant, but a combination of their capabilities.

We recommend the use of a fuzzy set theory methodology for the integrated assessment of strategic potential as well as secondary potential.

The fuzzy set is determined with the sum of C_H ($\mu_{C_P}(k_{CCKM})$, k_{CCKM}) pairs, In this case, $\mu_{C_P}(k_{CCKM})$ is the degree to which the element k_{CCKM} belongs to the carrier k_{CCKM} .

The degree of relevance is 0 to 1 [0.1] at the same time, $k_{CCKM} \in k_{CCKM}$.

The higher the degree of relevance, the more the element of the universal set corresponds to the characteristics of the k_{CCKM} indefinite set.

We define the linguistic variable $\mu_{C_P}(k_{CCKM})$ by the model “Lutfi Zade”

$$k_{CCKM} = \langle k_{CCKM}, T(k_{CCKM}), k_{CCKM}, G, L \rangle,$$

where: k_{CCKM} - the name of a linguistic variable, in our case, k_{CCKM} is an overall strategic indicator of effectiveness;

G - the syntactic rule in forming the name of a variable - k_{CCKM} ;

L- the value of each quantity and the semantic rule for its understanding, linking;

$T(k_{CCKM})$ the set value of a linguistic variable.

By setting intervals in the formation of uncertain rules for determining C_H , we take into account the effect of stochastic components on the reproduction potential, the control of the system and its degree of disorder.

The potential growth trend occurs in the interval expression $\mu_{C_P}(k_{CCKM})$ (0.5), while its high growth rate is when $\mu_{C_P}(k_{CCKM})$ [0,72] (Table 2).

Table 2

The content of the given term-plural elements for C_H

k_{CCKM} content	The value of $\mu_{C_H}(k_{CCKM})$ intervals
Very high	$[0,95] < \mu_{C_H}(k_{CCKM}) < [1]$
High	$[0,72] < \mu_{C_H}(k_{CCKM}) < [0,95]$
Very good	$[0,52] < \mu_{C_H}(k_{CCKM}) < [0,72]$
Good	$[0,5] < \mu_{C_H}(k_{CCKM}) < [0,52]$
Low	$\mu_{C_H}(k_{CCKM}) < [0,5]$

These values are considered as transient values of strategic potential.

The process of analyzing the state of C_H change allowed C_H to be “high” at the time when the efficiency of the initial indicators was highest, as it allowed to take as a basis a high estimate of the potential at the initial time t_0 in 2020, by taking the quantitative values of the interval equal to [0.72], we can determine all the linguistic coefficients.

Thus, the first row forms the initial matrix of the classification functions of the linguistic variables, clearly filled with the actual index. K_i is a condition of an indeterminate set of values of a multidimensional membership function, which is determined by the membership function values ($C_H(k_{CCKM})$, k_{CCKM}) of the reproduction potential value:

$$(\mu_{C_{II}}(\mathbf{k}_{CCKM}), \mathbf{k}_{CCKM}) = \{(\mu_{C_{II}}(k1), K1), (\mu_{C_{II}}(k2), K2), (\mu_{C_{II}}(k3), K3), (\mu_{C_{II}}(k4), K4), (\mu_{C_{II}}(k5), K5)\}$$

Of course, here, as a basis for determining the reproduction capacity, the following indicators of operational efficiency were selected (Table 3):

Table 3

A set of indicators (coefficients) for calculating the reproduction potential (CI) of the state-owned enterprise "Navoi Mining and Metallurgical Combine".

<i>k1</i>	current assets / short-term liabilities
<i>k2</i>	return on equity – ROE
<i>k3</i>	profit / (debt + equity)
<i>k4</i>	Net profit / Cost
<i>k5</i>	sales volume / average annual value of receivables

After the change in the linear quantitative value [0,1] in the interval value and the determination of the objective correspondence to each coefficient based on the rule given by the indefinite sets, the evaluation of the current values of [0,1] and C_C is carried out.

According to Table 4, based on the actual indicators *k1*, *k2*, *k3*, *k4*, *k5*, we determine the state mining enterprise "Navoi Mining and Metallurgical Combine" ($\mu_{C_{II}}(\mathbf{k}_{CCKM}), \mathbf{k}_{CCKM}$) selected for us in 2020-2024.

Table 4

Correlation values of C_{II} function for the state enterprise "Navoi Mining and Metallurgical Combine"

Indicators	2020	2021	2022	2023	2024
<i>k5</i>	45,28	25,60	18,42	15,97	15,22
$\mu_{C_P}(k5)$	0,72	0,407	0,293	0,254	0,242
<i>k4</i>	0,025	0,035	0,007	0,012	0,020
$\mu_{C_P}(k4)$	0,72	0,988	0,190	0,011	0,575
<i>k3</i>	0,303	0,365	0,092	0,003	0,228
$\mu_{C_P}(k3)$	0,72	0,867	0,219	0,008	0,542
<i>k2</i>	88,80	81,50	27,90	2,45	93,17
$\mu_{C_P}(k2)$	0,72	0,661	0,226	0,020	0,755
<i>k1</i>	1,44	1,71	1,39	1,02	1,20
$\mu_{C_P}(k1)$	0,72	0,854	0,692	0,508	0,599
C_{II}	0,72 high	0,988 very high	0,692 very good	0,508 good	0,755 high

The identification of indicators for 2020 allows the initial rule of an ambiguous conclusion to be clearly and reliably formulated.

If $\mu_{C_{II}}(k1)=[0,72]$ and $\mu_{C_{II}}(k2)=[0,72]$, and $\mu_{C_{II}}(k3)=[0,72]$, and $\mu_{C_{II}}(k4)=[0,72]$, and $\mu_{C_{II}}(k5)=[0,72]$, then C_{II} - high.

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In the research work, the second contour of C_C - the assessment of developmental potential - was also carried out. An analogue algorithm was used because its evaluation logic matched the evaluation logic of C_H .

According to the results of planning the number of enterprises in the network, the level of the factor determining the development potential of the state enterprise "Navoi Mining and Metallurgical Combine" with the acquisition of numerical interval values and the formation of term sets of linguistic variables $T(m_j)$, linguistic and intermediate (interval)) was accepted as the final stage level. C_P is determined by the sum of the pairs of indefinite set states ($C_{P(M)}, M$). Table 5 shows the values of ($C_{P(M)}, M$), where $C_{P(M)}$ is the ratio of the membership level of the m-element to the M carrier.

Table 5

Analysis of the strategic potential (C_C) of the Navoi Mining and Metallurgical Combine.

	$\mu_{C_H}(CCKM)$	$\mu_{C_H}(m)$	C_C
2020	[0,72] high	[0,72] high	[0,72], high
2021	[0,988] very high	[1] very high	[0,988], very high
2022	[0,692] very high	[1] very high	[0,692], very good
2023	[0,508] good	[1] very high	[0,508], good
2024	[0,755] high	[1] very high	[0,755], high

It is possible to determine the values of strategic potential for 2020-2024 by applying the process of defasification in the change of numerical (numerical) indicators and non-financial data in different directions to build a logical relationship. The question arises as to how the lost parts should be taken into account in the analysis of strategic potential in cases where there is evidence of system failures due to unforeseen circumstances, court decisions, accidents and incidents, production and sales interruptions. It is proposed to interpret the last part as the loss of strategic potential, and this is defined by the term as proctor of strategic potential (C_P).

In our view, C_P should be distinguished from an unapplied portion of the developmental potential that is generally assumed to be completely lost.

It is impossible to create a system of strategic management accounting without a clear and timely assessment of the strategic capabilities of the enterprise. At the Navoi Mining and Metallurgical Combine, the tools proposed in this research to build a modern strategic management accounting system and provide the necessary theoretical and methodological basis will help to eliminate methodological gaps.

CONCLUSION

1. The formation and implementation of strategic management accounting in the enterprise based on the new concept of "Knowledge Potential" is based on the existing system of collective discipline and traditions, the intellectual capacity of the employee and specialist, as well as opportunities, risks and obvious and uncertain resources.

The concept of knowledge management, on the other hand, involves the formation of internal management processes, implemented through targeted interaction with the existing internal corporate knowledge system. The internal organizational knowledge system participates in this as an object of strategic management.

2. It is expedient to create a form of "strategic forecast balance", which comprehensively combines the indicators of the strategic potential of enterprises. It summarizes the analytical indicators that allow assessing the financial and economic performance of the enterprise in the near strategic future.

This form of strategic forecast balance ensures the integrity of the database and its activation, leading to the rapid integration of the strategic management database into the internal organizational knowledge system.

The assessment and analysis of strategic competencies demonstrate the identification of effective ways to achieve a defined strategic goal. In order to effectively use strategic potential for strategic purposes, it is necessary to define two important aspects of the business – strategic development and reproduction.

3. It is advisable to use a set of strategic capacity indicators (CCKM), which allows a comprehensive assessment of the effectiveness of the strategic management system.

To this end, the proposed CCKM is a complex feature of the set of indicators, in which for the first time the financial and non-financial indicators are closely interrelated. The essence of the CCKM system, its dynamism and flexibility. Its nature means that in the process of implementing the chosen strategy, corrections and changes can be made to the pre-defined strategic goals and objectives, and the composition of the CCKM blocks to which they belong can also be reconsidered as a feature of the relationship between them.

The implementation of scientific proposals and practical recommendations developed in scientific research help to effectively organize strategic management accounting in enterprises and increase the effectiveness of strategic management decision-making.

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