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**ASSESSMENT OF THE EFFECTIVENESS
OF MANAGEMENT OF OIL REFINERIES
IN CONDITIONS OF UNCERTAINTY**

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INTRODUCTION. For domestic oil refineries, it is important to generalize world experience and develop on its basis a methodological approach to targeted assessment of the effectiveness of management of oil refineries, which involves substantiating the criteria for effectiveness and a set of levers of influence on the process of achieving results.

THE PURPOSE OF THE STUDY IS to substantiate the assessment of the effectiveness of management of oil refineries in conditions of uncertainty.

THE HYPOTHESIS OF THE STUDY is to investigate the organizational and economic set of criteria for the effectiveness of management of the analyzed enterprises in conditions of uncertainty.

RESEARCH METHODS: analysis and synthesis, generalization, abstraction, observation, comparison.

CONCLUSIONS. The assessment of the effectiveness of management of oil refineries is formed in three areas:

main performance indicators, productivity indicators and key performance indicators. The assessment process covers all levels of management and monitors the efficiency of oil refining enterprises from the workplace and the work of divisions to administrative management and owners, issuing only general information about the results of activities to the external environment.

To implement a theoretical and methodological approach to assessing the efficiency of managing the development of oil refining enterprises in conditions of uncertainty, it is necessary to take into account the state's European integration course and the security situation, implement organizational proposals related to the possibilities of using regional aspects, this will ensure the sustainability and innovativeness of the development of the industry, region and economy.

KEYWORDS: efficiency; innovation; investment assessment; organizational and economic tools; oil refining enterprises; uncertainty.

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**ОЦІНЮВАННЯ ЕФЕКТИВНОСТІ
УПРАВЛІННЯ НАФТОПЕРЕРОБНИХ
ПІДПРИЄМСТВ В УМОВАХ
НЕВИЗНАЧЕНОСТІ**

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ВСТУП. Для вітчизняних нафтопереробних підприємств стає важливим узагальнення світового досвіду та розробка на його базі методичного підходу щодо цілеспрямованого оцінювання ефективності управління нафтопереробними підприємствами, який передбачає обґрунтування критеріїв ефективності та комплексу важелів впливу на процес досягнення результатів.

МЕТА ДОСЛІДЖЕННЯ полягає в обґрунтуванні оцінювання ефективності управління нафтопереробними підприємствами в умовах невизначеності.

ГІПОТЕЗА ДОСЛІДЖЕННЯ: дослідити організаційно-економічні набір критерії ефективності управління аналізованих підприємств в умовах невизначеності.

Методи дослідження аналізу і синтезу, узагальнення, абстрагування, спостереження, порівняння.

ВИСНОВКИ. Оцінка ефективності управління нафтопереробними підприємствами сформована за трьома напрямками: основні показники результативності,

показники продуктивності і ключові індикатори ефективності. Процес оцінювання охоплює всі рівні управління і проводить моніторинг ефективності нафтопереробних підприємств від робочого місця і роботи підрозділів до адміністративного управління та власників, видаючи в зовнішнє середовище лише загальну інформацію щодо результатів діяльності. Для реалізації теоретико-методичного підходу щодо оцінювання ефективності управління розвитком нафтопереробних підприємств в умовах невизначеності, необхідним є врахування державного євроінтеграційного курсу та безпекової ситуації, впровадження організаційних пропозицій, пов'язаних зі можливостями використання регіональних аспектів, це дозволить забезпечити стійкість і інноваційність розвитку галузі, регіону і економіки.

КЛЮЧОВІ СЛОВА: ефективність; інновації; інвестиційна оцінка; організаційно-економічний інструментарій; нафтопереробні підприємства; невизначеність.

Task statement. Analysis of methods for assessing management effectiveness in conditions of uncertainty, based on the cost approach, which allows us to identify the main difficulties in calculating indicators and barriers to their implementation in the management system of oil refineries:

- at oil refineries, the evaluation methods that are traditionally used do not reflect the real value of enterprises, and therefore cannot be applied without adjustments (Oleksiuk, 2008);

- the formation of the market value of capital takes into account the principles of corporate governance and a developed stock market, which is in the development stage;

- under the influence of martial law, unstable economic situation, dependence on external financing, in particular active inflationary processes, indicators do not allow us to reliably assess the results of past activities in conditions of uncertainty;

- the low level of formation, processing and public provision of information on the profitability of oil refineries does not allow determining average industry indices, risk-free interest rates and other compensation for risks, which complicates the process of determining a reasonable discount rate and assessing the cost of capital expenditures.

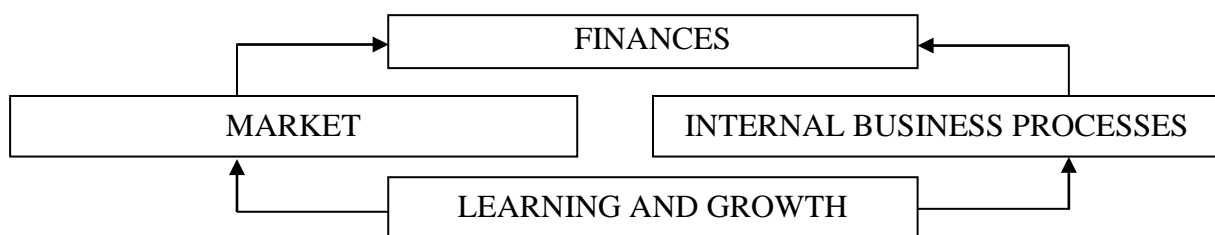
Presentation of the main material. Generalization of the advantages and barriers to the implementation of the studied methods allows us to highlight the direction of development of the approach to assessing the effectiveness of management of oil refineries. The modern direction in the formation of methods for assessing the effectiveness of management of oil refineries is associated with the need to use a system of indicators, which allows us to cover the main aspects of the analyzed activity in conditions of uncertainty.

In world practice, various systems of indicators are used, designed to assess the effectiveness of the activities of oil refineries. The study of their characteristics allowed us to highlight the main differences associated with the principles of forming a system of assessment and management by indicators, namely:

1. Indicator systems differ in the objects of study, the choice of critical areas of development and assessment. In the Norton and Kaplan balanced scorecard system, four aspects of the enterprise's activities are highlighted: 1 – training and development, 2 – internal business processes, 3 – relations with consumers (market) and 4 – financial activities (Fig. 1).

The assessment of the effectiveness of oil refining enterprises development management over a long period of time is carried out using a set of standard elements of the system that provide a holistic picture of the current strategy of enterprises and its dynamics. A balanced system should include measurement indicators in at least four areas:

- financial direction, which considers the effectiveness of oil refining enterprises in terms of return on invested capital;
- evaluation of goods and services of oil refining enterprises in terms of their usefulness for end consumers and investors;
- at the level of business processes, the main processes are assessed, their improvement is carried out in order to form competitive advantages of oil refining enterprises;
- learning and growth, that is, the ability of the organization to perceive new ideas, improve personnel qualifications, implement innovative alternative technologies and organizational procedures of oil refining enterprises.

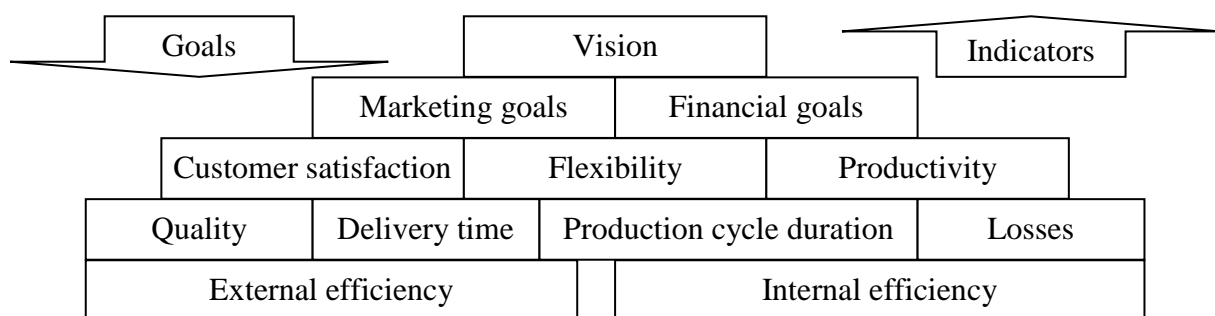


Source: (Savchuk, 2018).

Fig. 1. Norton and Kaplan Balanced Scorecard

Meisel's BSC model also defines four perspectives, but instead of the perspective of learning and growth, it uses the perspective of human capital, the formation of corporate culture of oil refining enterprises (Shvydanenko & Shevchuk, 2007).

The model for assessing the effectiveness of development management "Pyramid of Company Activity" by K. McNair, R. Lynch and K. Cross (1990) is focused on identifying and measuring consumer needs (Fig. 2).



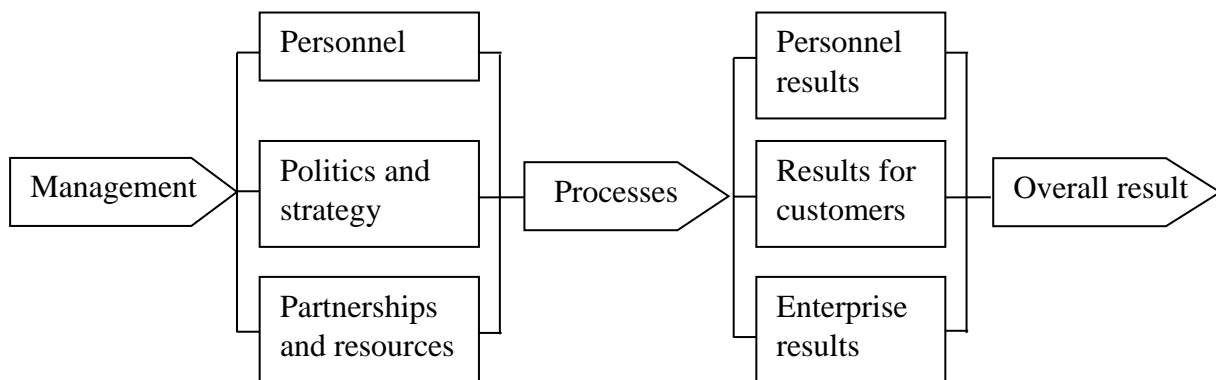
Source: (Shcherbak, 2009).

Fig. 2. Model for assessing the effectiveness of development management "Company Activity Pyramid"

A distinctive feature of this model is the formation of indicators of external and internal efficiency, as well as four levels of the organizational structure of oil refineries: at the highest level, managers form the mission of enterprises, at the second level they determine the goals of divisions, the third level is a

connecting link between the upper levels and the lower, associated with the assessment of the operational activities of oil refineries. That is, the system of indicators is formed so that the operational tasks of the lower level are linked to financial indicators at the upper level through the assessment of external interaction with consumers and the effectiveness of internal operations of oil refineries.

The European Foundation for Quality Management (EFQM) model is built on the assessment of two areas: opportunities and results, as can be seen from Fig. 3 (Armin, 1998).



Source: (Armin, 1998).

Fig. 3. Model of the European Fund for Quality Management of Business Activities of Oil Refineries

The model is aimed at assessing the process of achieving results related to business activities as a whole, its main features include continuous improvement of operational efficiency, elimination of shortcomings.

2. Indicator systems have different goals and objectives. It has been established that the main goal of the Balanced Scorecard model is to ensure the implementation of the mission and strategy of the enterprise through operational tasks. The model for assessing the effectiveness of management of the development of oil refineries "Pyramid of Company Activities" is based on the concept of total quality management, it assumes active growth of internal efficiency by accounting for costs by types of activities in the chain of activities. The European Quality Management Foundation model is a self-assessment and analysis tool, on the basis of which a conclusion is drawn about the progress and results of the activities of oil refineries within the framework of total management

According to the results of the study, it was found that the distinctive properties of the considered models are as follows: the models take into account the role of financial and non-financial indicators, tangible and intangible capital, which allows a more complete assessment of the direction of the enterprise's development and factors affecting performance; the systems allow for the

identification of critically important indicators at each level of management and facilitate the understanding of the tasks set for each employee. When developing a scientifically sound methodological approach to the effectiveness of management of the development of oil refining enterprises by indicators, it is necessary to take into account that Western concepts were created in a market environment with a high level of application of information and management technologies, as well as a developed market for intellectual capital (Zaichenko, 2019). Therefore, the formation and implementation of a system of indicators of the effectiveness of management of the development of oil refining enterprises should be accompanied by some adjustments (Nifatova, 2017): the use of three projections (1 – finance, 2 – market, 3 – internal business processes: product, process) will allow the system to manage oil refining enterprises more flexibly; the introduction of an innovation and investment direction in each projection will allow oil refining enterprises to keep up with scientific and technological progress and promptly monitor the level of qualitative development.

Including indicators of added value assessment in the structure of the scorecard will eliminate one of the system's shortcomings: the EVA indicator can be a financial indicator of the quality of management decision-making, in turn, the scorecard will allow us not to consider financial indicators only in the short term.

According to the results of the study, it is worth highlighting a number of problems associated with the use of scorecards as a mechanism for assessing and managing efficiency (Bahancov & Erohina, 2019): the complexity of determining key indicators and the relationship between them, which can lead to a multiplicity of goals; it is difficult to establish cause-and-effect relationships between strategic goals; it is difficult to create an effective incentive system aimed at maximizing the potential of personnel in achieving the overall goal.

The justification for choosing a scorecard according to three projections depends on the economic situation in the market space and at the enterprise. Solving the tasks involves obtaining an effective result through the use of new approaches and technologies.

Market projection is aimed at organizing effective interaction of oil refineries with other representatives of the market environment, such as consumers and suppliers. It determines the competitive position of the enterprise in the market, forms market policy and provides external information, on the basis of which the choice of the path of development of internal business processes of oil refineries is made.

We emphasize that the effectiveness of the functioning of the market projection affects not only the relationship between oil refining enterprises and the consumer with the subsequent formation of the enterprise's profitability, but also the determination of the enterprise's internal policy regarding production

and organizational processes. The financial projection of the improved system of indicators reflects the results of the activities of oil refining enterprises, the functioning of all components of the system that are characterized by efficiency. At the same time, the creation of a methodological approach to assessing the effectiveness of management of oil refining enterprises should be carried out taking into account the concept of economic added value management and the levers of cost accumulation associated with development (Shvydanenko & Shevchuk, 2007).

Conclusions and prospects of research. Based on the results of the analysis of world experience in forming an effective management system, the following levels of development have been substantiated and determined:

- management of internal capabilities of oil refining enterprises;
- management of the enterprise as an open system;
- management based on the search for new competitive opportunities.

The results of the study confirm that the management system that has developed at Ukrainian oil refineries is developing within the framework of the general evolutionary management system and corresponds to levels 1–2. The lag behind global trends is associated with insufficient experience in operating in market conditions, the lack of theoretical methods, which led to gradual development.

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