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SYSTEMATIC SUPPORT FOR THE PROCESS OF EVALUATING THE EFFICIENCY OF USING BIG DATA IN COMPANIES AND ITS IMPACT ON THE ECONOMIC PERFORMANCE OF COMPANIES

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Abstract

This research presents a new mechanism for the development of the organizational process in the use of big data. The aim of this mechanism is to provide analysis and evaluation of economic efficiency because of the optimal use of big data, in addition to presenting the most important methods used in the evaluation process in companies, whether long or short term. The study concluded that the evaluation process carried out by the company is necessary. The article provides methodological support for the development of the regulatory and economic mechanism for the utilization of big data. The primary objective of this methodological support is to assess the economic efficiency of utilizing big data within an enterprise. It includes the features of methods for evaluating the economic efficiency of using big data in both short-term and long-term planning for the organization's utilization of big data. Furthermore, it must encompass all the activities and events of the company that have separate structures, such as units or departments.

Keywords: Big Data, Evaluating, Methodological Support, Economic Efficiency, Planning, Activities, Events.

INTRODUCTION

The organizational and economic mechanism for the use of big data is a framework that comprises a network of organizations and individuals whose activities involve the creation (collection), storage, processing, analysis of big data, and the application of the insights gained from big data analysis in production. The development of this organizational and economic mechanism is driven by medium and large organizations engaged in economic activities (enterprises), which necessitates the development of methodological support based on assessing the activities of such organizations (enterprises) in utilizing big data. The use of big data entails incorporating analyzed data into production processes (including its various stages) to enhance manageability, modeling, and forecasting.

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Technologically, the use of big data encompasses the stages of data collection (creation), storage, processing, analysis, and implementation [1].

Trends in assessing the activities of enterprises are increasingly determined by the content of the concept of K. Schwab's "capitalism for all stakeholders." This scholar emphasizes, "Companies not only optimize short-term profits for shareholders but also strive to create long-term value, taking into account the needs of all their stakeholders and society as a whole." The content of the concept of "capitalism for all stakeholders" proposed by K. Schwab implies that while assessing the activities of an enterprise, including when the owner decides on the use of new resources, it is necessary to be guided by the following. First, the decision by the owner of an enterprise to use new resources, including such a digital resource as big data, cannot depend solely on the values of the economic efficiency of such an application. Secondly, the modern assessment of the activity of an enterprise focuses on obtaining information about the results of this activity - economic performance. Thirdly, the assessment of the enterprise's activities should include indicators that can affect the development of society, including those that demonstrate the level of its innovativeness, the change of which requires a long period [2].

Evaluation of the economic performance of the use of big data within the company using semantic support:

The phrase is grammatically correct and there are no spelling errors. However, I would suggest a slight modification for clarity and readability:

"When selecting indicators to assess the economic performance of utilizing big data in an enterprise, we consider the characteristics of both short-term (tactical) and long-term (strategic) planning. Tactical planning goals in an enterprise often revolve around achieving financial results, which are manifested in increased sales revenue, reduced net losses, and improved cost effectiveness. On the other hand, strategic goals aim to enhance the enterprise's sustainability by fostering innovation and strengthening its financial stability."

The use of big data in an enterprise is aimed at improving its competitive position, contributing to the development of new markets, and enhancing its position in traditional ones, which is reflected in the growth of the company's revenue. The revenue of the enterprise shows the level of business activity of the enterprise and its investment attractiveness, and it demonstrates, through the amounts of taxes received from it, the impact on the formation of the state budget. The amount of revenue received by the enterprise demonstrates the financial result of the completion of its activities for a certain period, both due to the implementation of short-term and long-term planning goals [3].

As an indicator that demonstrates the effectiveness of the use of big data in the interests of the owner of the enterprise in short-term and long-term planning, the amount of net profit is: “for the owners of the enterprise, the final financial result is important - net profit, which they can withdraw in the form of dividends or reinvest in order to expand activities

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and strengthening their market positions" [4]. The financial result of the enterprise's activity can also be a reduction in the resulting loss because of the use of big data.

Since profit is an absolute indicator, and cannot comprehensively reflect the performance of the enterprise, it is required to correlate the value of profit with the costs incurred to obtain it. We will make such a correlation using an assessment of the cost-effectiveness indicator, which shows how much profit an enterprise receives per Dollar of resources spent on production in general, as well as on the use of big data. The cost-effectiveness of production in general and the use of big data in particular shows the effectiveness of the management decision on the use of big data in an enterprise for both short-term and long-term planning [5].

Long-term (strategic) goals of enterprise planning involve achieving innovative advantages, demonstrated through the creation of innovative products, works, or services. For statistical accounting purposes, innovative products are defined as products (works, services) that are newly introduced or significantly improved compared to previously produced ones, in terms of their properties or methods of use, and have received a new designation or name. The production of innovative products is made possible through the implementation of product innovations and business process innovations. The utilization of big data can serve as a source for both product innovation and business process innovation. To assess the impact of big data usage on the release of innovative products, we will evaluate the proportion of innovative products in the overall volume of products sold by the enterprise in its own production (work performed, services rendered) [6, 7].

To assess the economic performance of utilizing big data in short-term planning, we will consider indicators such as revenue, net profit (loss), profitability of enterprise costs, and profitability of big data usage costs. When evaluating the economic performance of employing big data in long-term planning, we will take into account indicators such as the volume of innovative products, revenue, net profit (loss), profitability of enterprise costs, and profitability of the costs associated with using big data [6, 8].

Taking into account the need to assess the economic performance of the use of big data for the purposes of short-term and long-term planning, it is advisable to evaluate the above indicators for the periods: before the start of using big data; immediately after the start of the use of big data; immediately after the start-up period of big data; in periods that are not immediately after the start of the use of big data and reflect long-term planning. The specified time periods will be denoted by the index $i(i = \overline{0,m})$. 0 – assessment before the start of big data application; 1 - the period of the beginning of the use of big data; 2 - the period following the period after the start of the use of big data; $m(m = \overline{3 + \infty})$ – periods that are not immediately following the start of big data application and reflect the long-term planning of big data application [8].

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Short-term planning using the economic performance evaluation methodology for the use of big data:

To obtain information on revenue and net profit, we will use information from the company's reports reflecting the financial results of its activities. Let us designate the indicator of revenue received in the i-th period as R_i taking the value $R > 0$; indicator of net profit (loss) as I_{n_i} taking the value$I_{n_i} \in (-\infty; \infty)$). Let us determine the profitability of the enterprise's costs based on the ratio of the value of net profit (loss) to the total amount of costs, using the formula:

$$S_{r_{c_i}} = \frac{I_{ni}}{TC_i} * 100\% \quad (1)$$

Where S_{rc_i}- profitability of the company's costs in the i-th period, taking the value S_{rc_i}-$\in (-\infty; \infty)$; I_{n_i}- net profit (loss) of the enterprise in the i-th period, taking the value $I_{n_i} \in (-\infty; \infty)$;

TC_i- the sum of the costs of the enterprise in the i-th period, taking the value $TC_i > 0$.

Let's move on to calculating the cost-effectiveness of using big data, i.e., we will evaluate the cost recovery within the activities of the structural unit(s) of the enterprise in which big data is used. To calculate the cost-effectiveness of an enterprise for the use of big data, we use the formula:

$$S_{r_{BDITCI}} = \frac{I_{n_{BDI}}}{TC_{BDi}} * 100\% \quad (2)$$

Where $S_{r_{BDI}}$ - profitability of the enterprise's costs for the use of big data in the i –th period, taking the value $S_{r_{BDI}} \in (-\infty. \infty)$;

$I_{n_{BDI}}$- Profitability of the enterprise's costs for the use of big data in the i -th period, taking the value$I_{n_{BDI}} \in (-\infty, \infty)$;

TC_{BDI} −The costs of the enterprise for the use of big data in the i-th period, taking the value $T_{CBDI} > 0$.

Since big data can be implemented both in relation to the activities of the entire enterprise and in its individual structural units that are not independent economic units of account, we can determine the portion of net profit (loss) received by the structural unit in which the use of big data is planned by using the coefficient of proportionality for the distribution of wages among the structural divisions of the enterprise. We assume that the company distributes wages in proportion to the labor contribution of its employees. Otherwise, if the distribution of wages is not proportional to the employee's contribution, it indicates opportunistic behavior by the employer, resulting in distortions in wages that may not be considered in theory [9, 10].

Calculate the coefficient of proportionality of the distribution of wages between the structural divisions of the enterprise, using the following formula:

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$$Z_{BDI} = \frac{y_{BDI}}{y_{Enti}} \quad (3)$$

Z_{BDi}- The coefficient of proportionality of the distribution of wages in the i-th period, taking the value $0 < Z_{BDI} < 1$;

y_{BDI}- wages of employees of the structural unit of the enterprise in which big data is used, including the wages of the heads of the structural unit, as well as the wages of the heads of the direction whose duties include managing such a structural unit, in proportion to the amount of work performed in this direction, in the i-th period, taking on meaning $y_{BDI} > 0$.

y_{Enti}- wages of all employees of the enterprise in the i-th period, taking the value $y_{Enti} > 0$;

wages of all employees of the enterprise in the i-th period, taking the value

$$In_{BDi} = Z_{BDi} * In_i \quad (4)$$

In_{BDi} – net profit (loss) received at the expense of the structural unit of the enterprise, which uses big data in the i-th period, taking the value $In_{BDI} \in (-\infty, \infty)$;

Z_{BDi}-The coefficient of proportionality of the distribution of wages in the i-th period, taking the value $0 < Z_{BDi} < 1$;

In_i- net profit (loss) of the enterprise in the i-th period, taking the following value $In_i \in (-\infty, \infty)$ [11].

When estimating the costs of using big data, we will be guided by the stages of their formation: acquisition, collection (creation), storage, processing, analysis, and implementation in enterprise processes. When assessing the costs of using big data, it should be considered that such data can be either created (collected) by an enterprise on its own or acquired. We refer to the costs of using big data as the amount of expenses incurred by an enterprise for the acquisition and/or collection (creation) of big data; storage costs; big data processing costs; big data analysis costs; and big data implementation costs. In these stages of costs, such as collection (creation), storage, processing, analysis, and implementation of big data, the costs for remuneration of specialists are allocated, including payment for the performance of additional functions by them, their training; hardware costs, including maintenance; software costs, including the costs of license fees for the use of such software; costs of physical infrastructure, including its maintenance; etc. To calculate the costs of the enterprise for the use of big data, we will use the formula:

$$Tc_{BDi} = P_i + C_i + S_{ti} + P_{ri} + A_{ni} + I_{mi}, \quad (5)$$

Where TC_{BDi} – the costs of the enterprise for the use of big data in the i-th period, taking the value $TC_{BDi} > 0$;

P_i- the cost of acquiring big data in the i-period, taking the value $P_i > 0$;

C_i- the costs of collecting (creating) big data in the i-th period, taking the value $C_i > 0$;

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St_i- the cost of storing big data in the i-th period, taking the value $St_i > 0$;

Pr_i- big data processing costs in the i-th period, taking the value $Pr_i > 0$;

An_i- the costs of analyzing big data in the i-th period, taking the value $An_i > 0$;

Im_i- the costs of introducing big data into enterprise processes in the i-th period, taking the value $Im_i > 0$;

Thus, the economic efficiency of using big data in short-term planning allows us to evaluate the values of revenue indicators (R_0, R_1, R_2) net profit (loss) (In_0, In_1, In_2) return on enterprise costs $(Pr_{Tc0}., Pr_{TC1}, Pr_{TC2})$ return on investment in big data $(Pr_{DBTc0}., Pr_{DBTC1}, Pr_{DBTC2})$ in the period before the start of big data, in the period immediately after the start of the use of big data and in the period following the period after the start of big data. Achieving the results of short-term planning for the use of big data is manifested primarily in revenue growth $(R_2 > R_1 > R_0)$ and growth of net profit (loss reduction) of the enterprise $(In_2 > In_1 > In_0)$ Dynamics of changes in indicators of profitability of enterprise costs $(Pr_{Tc0}., Pr_{TC1}, Pr_{TC2})$ and cost-effectiveness of big data $(Pr_{DBTc0}., Pr_{DBTC1}, Pr_{DBTC2})$ make it possible to assess the use of costs and, if necessary, adjust their value, including by reusing the same big data [12].

Methodology for assessing the economic performance of using big data in long-term planning.

The main indicators demonstrating the effectiveness of the implementation of long-term goals using big data by an enterprise, which consist of increasing the level of innovativeness, are the share of innovative products (work performed, services rendered) in the total volume of sales of its own production (work performed, services rendered), and revenue. Additional indicators for determining the economic effectiveness of big data use in long-term planning include the profitability of the enterprise's costs, the profitability of the costs of using big data, and net profit (loss). Financial statements serve as the source for obtaining information about the revenue and net profit of the enterprise [13].

Let us designate the indicator of revenue received in the i-th period as R_i taking the value $R_i>0$; net profit (loss) as In_i accepting value $In_i \in (-\infty, \infty)$. To calculate the cost-effectiveness indicator of an enterprise in long-term planning, we will use formula 1, the cost-effectiveness indicator for the use of big data - formula 2.

To calculate the share of innovative products (works performed, services rendered) in the total volume of domestically produced products sold (works performed, services rendered) after the start of using big data at the enterprise, we use the formula:

$$PI_{Pr_{Bi}} = \frac{In_{Pt_{BDi}}}{pr_i} * 100\% \qquad (6)$$

$PI_{Pr_{Bi}}$ - the share of innovative products (works performed, services rendered) in the total volume of sold products of own production (works performed, services rendered) after the start of the use of big data at the enterprise in the i-th period, taking the value $In_{Pt_{BDi}} > 0$.

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$In_{Pt_{BDi}}$- the volume of innovative products (work performed, services rendered) after the start of the use of big data at the enterprise in selling prices in the i-th period, taking the value $In_{Pt_{BDi}} > 0$.

pr_i- the volume of production (work performed, services rendered) after the start of the use of big data at the enterprise in selling prices in the i-th period, taking the value $pr > 0$.

Thus, the economic performance of the use of big data in long-term planning is demonstrated by the values of the indicators of the share of innovative products (work performed, services rendered) in the total volume of domestically produced products sold (work performed, services rendered) $PI_{Pr_{Bi}}$, $PI_{Pr_{Bm}}$ proceeds (R_0, R_m) in the period before the start of big data and in periods not immediately following the start of $PI_{Pr_{Bm}} > PI_{Pr_{B0}}$big data. Achieving the results of long-term planning for the use of big data is manifested primarily in the growth of the share of innovative products (work performed, services rendered) in the total volume of domestically produced products sold (work performed, services rendered) accompanied by growth in revenue $(R_m > R_0)$. The share of innovative products, according to researchers, should be at least 25% in the total output, which makes it possible to classify the enterprise as innovative [14].

Achieving the main goals of the enterprise in the course of long-term planning is facilitated by the analysis in the period before the adoption of big data and the periods that are not immediately following the adoption of big data, such as the indicator of return on enterprise costs Pr_{rc0}, Pr_{rcm} and cost-benefit ratio for big data application $Pr_{BDTc0,}, Pr_{BDTc0}$, as well as the indicator of net profit (loss) (ln_0, ln_m). An analysis of the obtained profitability indicators allows us to assess the need to adjust costs and, if necessary, reduce them by reusing big data. As activities that allow increasing the amount of revenue and net profit received by the enterprise during long-term planning for the use of big data, it is advisable to consider the sale of big data [15].

Reusing big data using economic impact assessment:

The reuse of big data by an enterprise consists of repeating the stages of acquiring, collecting (creating), processing, and analyzing big data within enterprise processes. The result of big data reuse is reflected, first and foremost, in the indicators of the costs associated with using big data and the overall costs of the enterprise. This leads to a change in the values of the cost-effectiveness indicators for big data usage and the profitability of the enterprise. The calculation of costs for a single use of big data by an enterprise, in the case of repeated use, will be carried out according to the following formula:

$$TC_{BDRUi} = \frac{1}{t} * (P_i + C_i + St_i + Pr_i + An_i = \sum_{i=1}^{t} Im_i) \qquad (7)$$

Where TC_{BDRUi} - the costs of the enterprise for the reuse of big data in the i-th period, taking the value $TC_{BDRUi} > 0$;

P_i-the costs of acquiring big data in the i-th period, taking the value $P_i > 0$ 0;

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C_i- the costs of collecting (creating) big data in the i-th period, taking the value $C_i > 0$;

St_i- the cost of storing big data in the i-th period, taking the value $St_i > 0$;

Pr_i- big data processing costs in the i-th period, taking the value $Pr > 0$;

An_i- the costs of analyzing big data in the i-th period, taking the value $An_i > 0$;

Im_i- the costs of introducing big data into enterprise processes in the i-th period, taking the value $Im_i > 0$.

t- the number of implementations of the same big data in enterprise processes in the i-th period, taking the value t >0.

Let's move on to calculating the return on enterprise costs for the use of big data because of their reuse and the return on enterprise costs during the reuse of big data. To calculate the return on enterprise costs for the reuse of big data, we use the formula:

$$Pr_{BDRUTci} \frac{In_{BDRNi}}{TC_{BDRNi}} * 100\% \quad (8)$$

$Pr_{BDRUTci}$- Profitability of the enterprise's costs for the reuse of big data in the i-th period, taking the value $Pr_{BDRUTci} \in (-\infty, \infty)$.

In_{BDRNi}- profit (loss) received at the expense of the structural unit of the enterprise, in which the re-use of big data was carried out, in the i-th period, taking the value $In_{BDRNi} \in (-\infty, \infty)$.

TC_{BDRNi}- the costs of the enterprise for the reuse of big data in the i-th period, taking the value $TC_{BDRNi} > 0$.

To calculate the profitability of the company's costs, we will use the formula:

$$Pr_{TCRUi} = \frac{In_{RUi}}{TC_{Rui}} * 100\% \quad (9)$$

Pr_{TCRUi} - Profitability of the enterprise during the re-use of big data in the i-th period, taking the value $Pr_{TCRUi} \in (-\infty, \infty)$.

In_{RUi}- net profit (loss) of the enterprise during the re-use of big data in the i-th period, taking the value $In_{RUi} \in (-\infty, \infty)$.

TC_{Rui}- the sum of the costs of the enterprise during the re-use of big data in the i-th period, taking the value $TC_{Rui} > 0$.

To assess the economic efficiency of the reuse of big data, the cost indicator for such an application is used. TC_{BDRUi} and cost-effectiveness of the enterprise Pr_{TCRUi} At the same time, it is advisable to compare the indicators obtained with multiple and single use of the same big data: the costs of repeated and single use of the same big data TC_{BDRNi}, TC_{BDi}, the costs of the enterprise as a whole with repeated and single use of the same big data TC_{Rui}, TC_i, return on the cost of reuse and return on the cost of a single use of the same big data $Pr_{BDRUTci}, Pr_{BDTci}$, return on enterprise costs as a whole with repeated and single use of the same big data Pr_{TCRUi}, Pr_{ci}, When planning for big data reuse, it makes sense

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to determine what data can be implemented based on its value to multiple lines of business. Because of the ability to reuse the same big data, reducing the cost of a single use of this data by the enterprise $TC_{BDRNi} < TC_{BDi}$, and, consequently, the costs of the enterprise as a whole (if other components of the costs of the enterprise remain at the same level $TC_{Rui} < TC_i$. serve as a source of cost-effectiveness for the use of big data in short- and long-term planning [15, 16].

Methodology for assessing the economic efficiency of big data sales:

Selling big data involves selling the same big data in raw, processed, and analyzed forms. To assess the economic efficiency of big data sales, we use profitability indicators, evaluating their self-sufficiency and the cost-effectiveness of the enterprise for the collection (creation), processing, storage, analysis, and implementation of big data. Let us calculate the profitability of sales of the same big data in its raw, processed, and analyzed states:

$$Pr_{Si} = \frac{I_n S_i}{R_{Si}} * 100\% \qquad (10)$$

Where Pr_{Si} - profitability of sales of the same big data in the analyzed, processed and raw state, taking on the value $Pr_{Si} \in (-\infty, \infty)$

$I_n S_i$ - profit (loss) from sales of big data in the i-th period, taking the value $I_n S_{i\in} \in (-\infty, \infty)$

$R_{Si} -$ the company's revenue from the sale of the same raw, processed and analyzed big data in the i-th period, taking the value $R_{Si} > 0$.

To calculate the amount of revenue from the sale of raw, processed and analyzed big data, we will use the formula:

$$R_{Si} = \sum_{1=1}^{n} P_{muni} + \sum_{1=1}^{n} P_{mudi} + \sum_{1=1}^{n} P_{muhi} \qquad (11)$$

Where R_{Si} - the company's revenue from the sale of the same raw, processed and analyzed big data in the i-th period, taking the value $R_{Si} > 0$;

$\sum_{1=1}^{n} P_{muni}$ - the company's revenue from the sale of raw big data in the i-th period, taking the value $\sum_{1=1}^{n} P_{muni} > 0$;

$\sum_{1=1}^{n} P_{mudi}$- the company's revenue from the sale of processed big data in the i-th period, taking the value $\sum_{1=1}^{n} P_{mudi} > 0$;

$\sum_{1=1}^{n} P_{muhi}$ - the company's revenue from the sales of the analyzed big data in the i-th period, taking the value $\sum_{1=1}^{n} P_{muhi}$ 0;

n – the number of big data sales in the i-th period, taking the following value $n \geq 1$.

To calculate the amount of profit (loss) from sales of the same big data in the raw, processed and analyzed state, we use the formula:

$$In_{Si} = \sum_{1=1}^{n} In_{muni} + \sum_{1=1}^{n} In_{mudi} + \sum_{1=1}^{n} In_{muhi} \qquad (12)$$

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Where In_{Si}- profit (loss) from sales of collected (created) big data in the i-th period, taking the value $In_{Si} \in (-\infty, \infty)$;

$\sum_{1=1}^{n} In_{muni}$- profit (loss) from sales of raw big data in the i-th period, taking the value

$\sum_{1=1}^{n} In_{mudi}$- profit (loss) from sales of processed big data in the i-th period, taking the value $\sum_{1=1}^{n} In_{mudi} \in (-\infty, \infty)$;

$\sum_{1=1}^{n} In_{muhi}$- profit (loss) from sales of the analyzed big data in the i-th period, taking the value $\sum_{1=1}^{n} In_{muhi} \in (-\infty, \infty)$;

n – the number of big data sales in the i-th period, taking the following value $n \geq 1$.

We will evaluate the cost-effectiveness according to the formula:

$$Pr_{S\ cost\ i} = \frac{I_n S_i}{R_{BDSi}} * 100\% \qquad (13)$$

To calculate the cost of selling the same big data in a raw, processed and analyzed state, we transform formula 5:

$$TC_{DBSi} = \frac{P_i + C_i + St_i + P_{ri} + A_{ni} + \sum_{i=1}^{n} EXS_i}{n} \qquad (14)$$

TC_{DBSi} - the costs of the enterprise for the sale of big data in the i-th period, taking the value $TC_{DBSi} > 0$;

P_i – the costs of acquiring big data in the i-th period, taking the value $P_i > 0$;

C_i- the costs of collecting (creating) big data in the i-th period, taking the value $C_i > 0$,

St_i – the cost of storing big data in the i-th period, taking the value $St_i > 0$;

P_{ri}- big data processing costs in the i-th period, taking the value $P_{ri} > 0$;

A_{ni} – the costs of analyzing big data in the i-th period, taking the value $A_{ni} > 0$;

$\sum_{i=1}^{n} EXS_i$- costs for the implementation of big data in the i-th period, taking the value $\sum_{i=1}^{n} EXS_i > 0$;

n –the number of sales of the same big data.

When assessing the economic efficiency of big data sales, it is advisable to be guided by the calculation of the profitability of such sales $Pr_{S\,i}$, accompanied by a cost-benefit assessment $Pr_{S\ cost\ i}$, as well as determining the amount of revenue received $R_{S\,i}$, demonstrating the demand for such data in the market. As the number of sales of the same big data in raw, processed and analyzed form grows, there is an increase in revenue from the sale of this data ($R_{Sm} > R_{S\,i}$) and growth of return on costs At the same time, the value of such data can be lost as the same big data is sold multiple times, which reduces the growth rate of revenue received. In order to develop an organizational and economic mechanism for utilizing big data and creating a flexible digital system to manage interactions between government bodies and enterprises, a set of measures is proposed. Firstly, the creation of an organizational structure consisting of representatives

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from government, business, and academia who are responsible for implementing the use of big data and defining priority areas for its application. Secondly, the implementation of economic incentives for enterprises that utilize big data, considering the calculation of their effectiveness based on the proposed methodological framework for assessing the economic impact of big data utilization. The implementation of economic incentive measures is appropriate for enterprises producing domestic hardware and software for the use of big data; enterprises that use big data based on domestic hardware and software, regardless of whether such an application is aimed at increasing the level of innovativeness of the enterprise or not; enterprises exporting products created using big data; and enterprises exporting domestic software and hardware designed for big data applications.

Thirdly, stimulating the development of regional and international cooperation through the implementation of joint projects and the creation of joint ventures. The implementation of the proposed set of measures can be carried out both in full and in part. ($Pr_{S\ cost\ m} > Pr_{S\ cost\ i}$) [13].

At the same time, the value of such data can be lost as the same big data is sold multiple times, which reduces the growth rate of revenue received. In connection with the need to develop an organizational and economic mechanism for the use of big data, aimed at creating a flexible digital system for managing interaction between government bodies and enterprises, a set of measures is proposed. These measures include several stages. First, the creation of an organizational structure consisting of representatives from government, business, and science who are responsible for implementing the use of big data and defining priority areas for its utilization. Second, the implementation of economic incentives for enterprises that use big data, considering the calculation of the effectiveness of such application based on the proposed methodological support for assessing the economic impact of using big data. The implementation of economic incentive measures is appropriate for enterprises producing domestic hardware and software for the use of big data; enterprises that use big data based on domestic hardware and software, regardless of whether such an application is aimed at increasing the level of innovativeness of the enterprise or not; enterprises exporting products created using big data; enterprises exporting domestic software and hardware designed for big data applications. Thirdly, stimulating the development of regional and international cooperation through the implementation of joint projects and the creation of joint ventures. The implementation of the proposed set of measures can be carried out both in full and in part [12, 16].

RESULTS AND ITS DISCUSSION

The assessment of the economic performance of an enterprise involves the formation of a list of indicators that reflect the totality of funds aimed at the use of big data, as well as the results obtained from such an application. These indicators affect the clarity of articulating the goal of using big data and the thoughtfulness and effectiveness of steps taken towards achieving the planned results, as well as the depth and intensity of

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transformations [1]. When assessing the economic efficiency of using big data, it should be taken into account that their use affects the functioning of the entire enterprise, regardless of the area in which it is utilized. This is due to the ubiquity of transformations caused by technologies that form the core of the fourth industrial revolution, which include technologies based on the use of big data [2]. The use of big data by an enterprise can be aimed at the implementation of both the current (tactical) goals of the enterprise, associated, as a rule, with obtaining economic benefits for the owner in a short time, and with the implementation of long-term (strategic) goals of the enterprise, which are aimed at obtaining the benefits of the enterprise due to release of innovative products. Thus, to assess the economic performance of the use of big data in an enterprise, methodological support for assessing the economic performance of using big data in an enterprise is required, consisting of a methodology for assessing the economic performance of using big data in short-term planning and a methodology for assessing the economic performance of using big data in long-term planning.

The owner of the enterprise may decide to achieve current goals with a subsequent transition to long-term goals. Directions for further use by the owner of the enterprise of the results achieved, for example, the profit received when using big data in the course of short-term planning, which can be aimed both at stabilizing their own market positions as a result of reinvestment, and withdrawal in the form of dividends, are the subject of a separate study, going beyond ours. Features of big data as a digital resource are manifested in intangibility, non-expenditure, as well as the possibility of their simultaneous and (or) reuse. As experts emphasize, “most of the original data owned by enterprises can be reused or converted into a database format to create new products or services”1, such reuse of big data “in accordance with the chosen strategy can stimulate competition and allow new entities to enter market and rebalance the ecosystem. The practice of reusing big data determines the need to develop a methodology for assessing the economic performance of reusing big data. As a source of income, enterprises consider the activity of selling big data in a raw, processed, and analyzed form. Experts emphasize that "it is also important to remember that the potential income from selling unstructured data or underlying data sets to data providers will be less compared to selling analysis results or reports to other companies." The functioning of an enterprise can be directly related to the collection (creation), processing, and analysis of big data or be accompanied by their collection (creation), processing, and analysis, which involves the formation of an enterprise resource. The sale of this resource can become one of the activities that increase the level of competitiveness of an enterprise in conditions of digitalization. The sale of collected (created), processed and analyzed big data serves as the basis for developing a methodology for assessing the economic efficiency of selling big data. Thus, the methodological support for the development of the organizational and economic mechanism for the use of big data includes methodological support for assessing the economic performance of using big data in an enterprise, consisting of a methodology for assessing the economic performance of using big data in short-term planning and a methodology for assessing the economic performance of using big data in long-term planning; a methodology for assessing the economic performance of re-using

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big data; methodology for evaluating the economic efficiency of big data sales. The novelty of the methodological support lies in the fact that, firstly, in contrast to a narrow assessment of the economic efficiency of the use of big data by an enterprise, an assessment of the economic effectiveness of the use of big data is carried out, and secondly, in contrast to the assessment of the exclusive use of big data as a separate process within an enterprise , a comprehensive assessment of the economic performance of the use of big data in the enterprise is carried out, including taking into account the goals of short-term and long-term planning in the enterprise.

CONCLUSIONS

In the process of preparing the methodological support for the development of the organizational and economic mechanism for the use of big data, it is demonstrated that the primary objective of this support is to assess the economic performance of big data utilization within an enterprise. The assessment of the economic performance of using big data to address both tactical and strategic tasks of the enterprise is based on a system of indicators that consider both absolute financial metrics (net profit/loss, revenue) and relative ones (cost-effectiveness, cost-effectiveness for using big data, share of innovative products). The specificity of evaluating the economic efficiency of using big data in short-term and long-term planning is reflected, along with the provision of a methodology for evaluating the economic efficiency of big data reuse and sales. A set of measures and a mechanism for the use of big data are outlined.

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