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Management Accounting: What is Subject to Digital Transformation?

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ABSTRACT

The subject of the article are the problems of transformation on the basis of breakthrough digital technologies of activity on information support of management and use of accounting information in managerial decision-making. The authors in the course of the research analyze the current state of management accounting and prove that only a factor information model is able to ensure the implementation of the functions of the actual management of the object, allowing observation based on operational, technical, accounting, statistical and data integration requirements. On the example of the system of productivity indicators (qualitatively defined quantity), it is demonstrated that it is possible to implement such requirements for this factor as the object, accuracy and specificity of the work; and an example of a system of indicators for fixed assets — harmonies the functions performed for the object. The article also substantiates the conclusion that the solution of the problems of digital transformation of speech can be provided by an information system functioning based on the platform using ***Big Data*** and cloud technologies — ***DaaS*** interacting with active elements of the Internet community. In the course of the study, in generalization of modern concepts of management of economic systems, directions of development of digital technologies and their implementation in the processes of information management, **methods** of system and comparative analysis were used.
Keywords: information support of management; management accounting; accounting systems; digitalization; digital transformation; information model; Big data; DaaS

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INTRODUCTION

Today's challenge is considered the requirement of high efficiency of the enterprise as a business unit, but the strengthening of its position in the market of goods and services largely depends on the adoption and implementation of high-quality management decisions. Therefore, any management system is often challenged to organize its activities using modern tools at present, among which digital technologies are most in demand in the implementation of national programmes in this area. To this end, decisions are being taken to develop the technical and technological base for the collection, generation, storage and data processing in various areas of public life. Digital technologies become the basis of digital transformations that provide profound transformations, including new quality [1].

Immediately emphasize, that the effectiveness of any transformation is determined by the degree to which it corresponds to the theoretical and methodological foundations of the activity being transformed. This assertion is due to digital transformations can answer the question: "how can this be done"? and only in general terms — to question "what to do"? In other words, they hardly affect the primary problems.

However, many factors have made it necessary to find a solution, however, the first priority is to establish the location of the information activities to be digitally transformed in the management; other circumstances, concerning the ecological environment, are play no less significant role, from information technology to management of complex economic systems. It is also

important to take into account that finding answers will pose two problems: effective management decision-making and information management of the process [2], which are related to the monitoring of the whole variety of manifestations of the essence of functioning; and development of the business unit, influencing its behavior and changing under the influence of the environment.

The importance of information for objective reasons should not be underestimated; Moreover, the efficiency of its transformation will determine the possibilities of changes not only in the management sphere, but also in the behavior of the business unit itself. Since the digital transformation is likely to affect this activity in the first place, the degree of its effectiveness will depend on the depth of knowledge of the theoretical and methodological foundations of the last.

STATEMENT OF THE PROBLEM

When digitally transformation of management activities based on breakthrough digital technologies, it is important to take into account that all of the modern management structures are based on the fundamental principle of pairing of the categories "management" and "information" [3]. It is not surprising, therefore, that any responsible administration pays great attention to an information system that is able to provide information, when making a specific management decision, on:

- what's going on with management object activity — business unit;
- why this is so, and not another;
- how laws and regularities, in all their diversity, are influence the behavior and development of the object of management;
- what will happen to them in the future (including as a result of activities).

As a result, the task of transforming information processes is actualized in part:

- monitoring the activities of the business unit in all its aspects;
- analysis of this activity based on monitoring information;
- knowledge of the role of laws and regularities in the functioning and development of activities in specific conditions;
- forecasting the behavior of the business unit in the direction of increasing efficiency based on the knowledge gained.

In doing so, it is important to consider the objective reality that each management decision is aimed at *changing the behavior of the object of management*, but it can only be accepted if there is a full understanding of *what changes are object of management*. Business unit will maintain its integrity when managing changes, when an activity is a set of interrelated and interdependent processes, the quality of which remains unchanged (at least for the moment). In case of strategic development, changes in the way of its activity lead to the formation of an integrated system of qualitatively new phenomena and processes.

It should be understood that in these conditions, change management becomes possible because the phenomena in the behavior of the business unit as the object of management are considered both *qualitatively* and *quantitatively*, which as an objective reality is presented in the form of their dimensions, the relationship of dimensions in time and space, the relationship of dimensions of the opposite phenomena. Among the variety of parameters to be measured, the quantitative side is so dynamic that it responds to even the most insignificant impacts, so the goal of management becomes a change specific in its manifestation of the quantitative side of any phenomena, which, in its current version, "preserve its essence", and in strategic — present a new essentially. As a result:

- an objective reality is formed, which implies the perception of the quantitative as an

object of control (for it is impossible to control what cannot be measured);

• the business unit of management information system is generates data that reflect the quantitative side of the whole variety of phenomena and processes, and implements procedures for its use in the course of managerial decision-making;

• the activities were organized on monitoring the size of specific phenomena, their behavior characteristics, interrelationships and interrelationships;

• knowledge and description of the mechanism of action of laws and regularities, phenomena of different degrees of generality (sizes and varieties) is carried out on the basis of changes in the relationship between their sizes in their interrelationship;

• the organization of such activities is based on the understanding that the nature of observed phenomena determines the methodology for tracking and exploring them.

The last conclusion shows that the business unit of management information system is based on variety types of observations — accounts whose consistency is only possible in a system that unites them. This was most clearly reflected in the Soviet Union in the concept of economic accounting as the unity of its types: operational, accounting, statistical, which ensured not only the observation of the same objective reality in the form of a system of interrelated phenomena and processes, but also their statistical organization. The recent was manifested in the fact that the central category of the *indicator* was considered as a quantitative characteristic of qualitatively defined properties of phenomena [4]. Its compliance with the requirements of focus, accuracy and specificity was based on the understanding that:

• it is necessary to respect particular limits of the set of facts, which represents a qualitatively defined phenomenon;

• the quantification of laws and regularities is determined by the specific context of the activity;

• only a system of indicators (as a strictly organized set) can be an image of real activity at the level of both the elementary and the integrated system of interrelated phenomena;

• management apparatus directly operates such values in decision-making processes, taking into account their inherent nature of compliance with the original — the object of management.

Currently, the business unit management information system represents the unity of the following types of accounting:

• *operational and technical* — it is least developed in theoretical and methodological terms;

• *statistical*, the purpose of which is to make mandatory reporting on federal or corporate statistical programs for phenomena and processes in their particular set [5];

• *accounting–financial*, the development of which is linked to the adoption of national and international financial reporting standards [6];

• *accounting–tax*, focused on ensuring the completeness of accounting for financial and economic activities, based on the requirements of tax reporting [6, 7];

• *management accounting*, formed as the implementation of accounting of a particular direction, demanded in the management system [6–9].

When assessing the available diversity of accounting types, to keep in mind that it was formed as a result of the implementation of the concept, where a business unit manifests itself as part of a more general management structure in an environment, and its production and economic activities are displayed through two information systems, (statistical form, in the case of research conducted since 1969): *external,* aimed at reflect the object as part

of a higher degree of community (includes financial, tax and statistical accounting); and *internal*, intended for ensure the processes of managerial decision-making carried out by its own management apparatus (management accounting and operational and technical).

In considering approaches to the development of each type of accounting, including through digital transformation, it is important to note location the general theory of systems, according to linkages and functions of each element are determined by the objectives of the system as a whole. So the answer to the question: "What to do"? in the form of a set of indicators and the methodology for obtaining them are defined for:

- objectives of accounting financial— financial reporting standards as part of a common national and/or international financial information system;
- accounting–tax — tax reporting standards as part of the National Tax Service information system;
- statistical — requirements of the programme and the way in which statistical monitoring of specific phenomena in their diversity is carried out within the framework of the national and/or global information monitoring system, particularly in the economic sphere.

And it is only in the case of management accounting and operational technical accounting (where there is a continuing need for such accounting), that the answers to the questions that have been asked indicate that:

- information system can provide data to the management apparatus if it is adequate to the relevant functions and methods of management tasks;
- effective mechanism of managerial decision-making can correspond to production and financial activity as object of management;
- information system should be relevant to the reality that it reflects.

The implementation of these provisions does not always give the expected results when making management decisions aimed at improving the functioning of the business unit. It can hardly be considered correct that from the definition of activity "management accounting" (having its own subject and method), without changing its essence, the word "management" was changed and declared about the new "managerial accounting", which can provide information on multiple management functions for a variety of phenomena and processes as objects of management.

This follows from the understanding that management accounting is focused primarily on solving the problems of business efficiency management in terms of production costs, and reserves and cash flows related to income and budget and payments [8, 9]. How do this management — everyone understands in their own way, and as a result we have a large variety of known and not so much cost accounting systems, cost calculation of works and goods, budgeting and treasury systems, etc. However much one may speculate on what the management accounting system should address, answer may be based on the fundamental methods with double entry, asset flow and settlement of liabilities, on a set of synthetic and analytical accounts that reflecting specific groups of assets and business transactions, although with a *high valuation of assets as assets with particular liquidity and liabilities of varying maturity*.

And then the question arises: is this accounting able to manage the activities of the business unit?

METHODS OF RESEARCH AND RESULTS

To find the answer to the above question we will use the category "information model" [10, 11]. The model is given into an equation or system of equations of interrelation of a

specific indicator and its determining factors, constructed on information of observation and accounting, taking the form of a numerical. It reflects the operation of the laws and patterns of conduct of the original — object of management in the specific conditions of the place and time, and is an adequate way of acting.

Importance of information models for managerial decision-making is determined by the fact that the management apparatus operates the images of the original, implementing the principle of pairing categories "management decision" and "information model", which acts in such a process as the main carrier of knowledge about a controlled phenomenon regardless of its degree of complexity. According to it, the quality of the management decision and, consequently, management itself, will be determined, on the one hand, by the quality of the model, which is built on the basis of a specific system of indicators and with informative, explanatory, empirical, predictive functions in necessary volumes, on the other hand, by the ability of the management apparatus to maximize these functions. It should be taken into account that the application of this type of model provides knowledge of what happened in the past and may happen in the future. Therefore, any observation and accounting system is organized on the basis of the need to build information models of specific phenomena. Taking into account the subject and method of management and production accounting, which, according to the concept presented by C. Drury [12], there are constituent parts of accounting, we will evaluate information models of cost of production.

Regardless of the calculation methodology, it is important to understand that, ultimately, the costs of diversity are managed. Use the following information model:

$$e = e_t + e_{sz} + e_m + e_a + e_{pr}, \quad (1)$$

where: e — unit cost, including the types of costs;

e_t — labour compensation;

e_{sz} — social protection spending;

e_m — material costs;

e_a — depreciation of non-financial assets;

e_{pr} — others.

Detailing in this model takes the form of cost distribution, as is the case with material: $e_m = \sum_j e_{m-j}$, when allocating specific j — types of material resources.

Implementing the comparison methodology as mandatory element of the process of knowledge based on the information model (1), we will have:

- in the case of absolute increases, when $\Delta e_{e_{vz}} = \Delta e_{vz}$, cost due to a specific vz — type of costs varies in the size of the increase in the type of costs;
- in the case of a growth rate, when $m_e = \sum_{vz} m_{e_{vz}} de_{vz}$, there is an increase due to:
- increase in a particular type of cost (in many), when $m_{e.e_{vz}} = m_{e_{vz}} \cdot de_{vz.1}$;

structural shifts

$$m_{e.de} = \sum_{vz} e_{vz.0} \cdot de_{vz.1} - \sum_{vz} e_{vz.0} de_{vz.0}.$$

The model is able to explain the changes in cost by type, which is already an achievement. But the model does not answer the questions: *Why did it change? What must be done to achieve these goals?*

In managerial accounting, the cost monitoring system makes it possible to build an information model of another kind:

$$e_{vd} = e_{prm} + e_{pst}, \quad (2)$$

where e_{vd} — unit cost including in terms of costs:

e_{prm} — variable (volume — dependent);

e_{pst} — fixed (volume — independent).

Assessing its importance for managerial decision-making, we use such a category of financial management as "production leverage" [13], considering the ratio of fixed and variable costs, and considering its determining role in the formation of profit according to the model (3):

$$\sum M_{vd} = \sum Q_{vd} \times [p_{vd} - e_{prm}\left(1 + \frac{e_{pst}}{e_{prm}}\right)], \quad (3)$$

where $\sum M_{vd}$ — amount of profit;

$\sum Q_{vd}$ — production volume / sales of products;

p_{vd} — unit price.

Preserve or increase the volume of profit by increasing the volume of production / sales of products, in case of violation of the ratio towards increase in the relative size of fixed costs. Again, the cost model provides information on what is happening in terms of cost ratios, but nothing about the reason for the change in the ratio or about measures to prevent future negative events.

Such a conclusion follows from the objective reality that a phenomenon of any degree of complexity is managed through change through carrying out particular actions — activities related to its determinants: in the case of cost, these are those that affect unit costs for specific types. Therefore, in order to make a management decision, the information model (as the basis for its development) should present their factors and describe the mechanism of their influence, however, in the options (1) and (2) described above, this is not the case and, therefore, they cannot be used to know the cost as the object of management

The unit cost model (4) of the functional factor class is suitable for this purpose:

$$e_Q = \left[\begin{array}{c} \frac{1}{B} \cdot \overline{o} \cdot \left(1 + \overline{s}_{sc}\right) + \\ + \sum_j y_{m-j} \cdot p_{m-j} + \frac{1}{Fo}\overline{\alpha} \end{array}\right] \left(1 + \sum_i y_{Z_{pr-i}}\right), \quad (4)$$

where: B — labor productivity;

$\overline{o}$ — average wage of employees;

$\overline{s}_{sc}$ — average contribution rate to the social fund;

y_{m-j} — specific consumption per unit of output j — type of material, fuel, energy;

p_{m-j} — average price of the j — type of material, fuel, energy;

Fo — capital productivity;

$\overline{\alpha}$ — average depreciation rate;

$y_{Z_{pr-i}}$ — percentage of other costs i — type, per unit of used on their own.

In this model, factors represent phenomena with a high degree of generalization, if each can be described as more complex using an appropriate information model. Statistical indicators [4] are the basis of its construction (as an image of the real object of management existing in specific conditions of place and time), the values of which are determined by observing the phenomena and processes.

It is known from the theory and practice of economic statistics that calculating the indicators of the model *only in terms of labour costs* requires at least:

- *accounting on the basis of quantities* of output as consumer values of specific types of products, the number of employees: in general, specific categories of personnel, hours worked and unprocessed working hours, volumes of work performed in all their diversity;
- *cost — accounting* for gross wages in all forms of payments (time worked and unprocessed, compensation and incentive payments, other) and social contributions.

Based on primary data, absolute totals of accounting quantities, nominal and cost can be calculated, as well as their average and relative values in their diversity. In order to obtain this information, it is necessary to organize monitoring with operational accounting elements in the part, for example: determination of output volumes and performance of a specific job; accounting (the

size of the payment for labor fund[1]; payments to social protection funds; statistics on the number of employees; amounts of hours worked and hours not worked, and the integration of operational; accounting and statistical data to calculate the average and relative values of the indicators: labour productivity, average wages and average social contributions). In addition, in order to characterize the manifestation of laws and regularities as such in specific conditions of place and time, it is mandatory to apply the method of grouping a wide range of characteristics.

Highlight three main types of actions of the control apparatus in relation to specific objects, projecting information cost models on management processes: monitoring, controlling and managing.

Based on the essence of the last, we are led to the following conclusions.

The unit cost information model (1) provides *monitoring* functions when levels, ratios and dynamics are tracked, but not all the categories listed here are intended to change. However, the acquired knowledge is taken into consideration in decision — making regarding other phenomena.

The Information Model (2) provides a *controlling* function when decisions to change the volume of activities are made in case of unfavorable conditions in the field of variable versus fixed costs. In this case, the factors that determine the fixed costs and the cost of the variable costs are not affected.

Only the information model (4) **is able** to guarantee the function of *direct management*, as it represents the factors that determine the level of costs by types, influencing and managing production costs and sales of specific production volumes and unit cost.

To do this, considering the absolute growth and growth rate as a result of the influence of many factors in the form of: $\Delta e = \sum_j \Delta e_{f_j}$ and $m_e = \sum_j m_{e/f_j}$:

- measures of cost change Δe_{f_j} and m_{e/f_j} are calculated under the influence of a specific factor f_j;
- measures of factors and groups of factors are assessed against each other using formal $\sum_{j \in G_F} \Delta e_{f_j}$, $\sum_{j \in G_F} m_{e/f_j}$ and meaningful synthesis $\sum_{j \in G_R} \Delta e_{f_j}$, $\sum_{j \in G_R} m_{e/f_j}$;
- measures depending on the factor cost are identified: $b_{e/f_j} = \frac{\Delta e_{f_j}}{\Delta f_j}$ and $\beta_{e/f_j} = \frac{m_{e/f_j}}{m_{f_j}}$;
- Projected change in cost per factor: $\Delta e^{prg}_{f_j} = b_{e/f_j} \times \Delta f^{prg}_j$ and $m^{prg}_{e/f_j} = \beta_{e/f_j} \times m^{prg}_{f_j}$.

Consideration of problems of information support of management decision-making processes leads to the conclusion that it should not be about "managerial and production accounting as elements of accounting" or else, where an integrated system for monitoring mass manifestations is possible, and it should be defined as managerial accounting.

The effectiveness of information management is enhanced if the system becomes integrated with synergies when:

in the observation displayed the quantitative side of mass phenomena and processes in all forms of its manifestation, based on the system of indicators as the basis of building its (phenomenon) adequate image;

in the case of a business unit activity, a high degree of adequacy of management processes ensures a monitoring system based on a multitude of consistent and complementary indicator systems, each of which is formed according to the information model of the

[1] [1] First, payroll and payment in accounting is perform the function of determining the portion of monetary assets to be distributed in favour of employees and the subsequent repayment of the resulting liabilities.

phenomenon and process, purposefully modified because of the management decision. This is — the consequence of the representation of real reality as a set of qualitatively defined actions, consisting of elements of a holistic system of interrelated and interdependent phenomena, reflecting the activity of the business unit in a particular aspect;

observational data are aggregated using logical and mathematical tools to map the phenomenon of a particular degree of commonality in the form of a system of indicators. In this case, the implemented logic and mathematical procedures do not lead to loss of qualitative certainty of phenomena and processes (regardless of the degree of their generality).

In such a situation, the central category of the management accounting system becomes the indicator as a "qualitatively defined quantity" representing the real reality. It must meet the requirements of subject matter, accuracy and concreteness [4] from the perspective of the phenomenon as an object of control. To illustrate the above, there is much talk about "labor productivity", putting in this term a particular content. However, all conversations stop when a given indicator is constructed according to a particular methodology (starting with the recording of specific facts of specific phenomena). As a measure of the *efficiency of the labour* used in production, it is calculated as a unit of output per unit of total labour of the population. With regard to the measure of *efficiency of a particular work*, this is output as a unit of work per unit of work, measured by time worked. The adequacy of these efficiency measures is disputed in the form of proposals to measure labour productivity based on gross value added or the volume of profits of production. However, the inaccuracy of the proposed measures is manifested in the fact that they do not take into account the objective reality: labour is engaged in the production of a specific volume of output to meet the needs of the recent [14]. Reference to the practice of calculating the productivity of social labor means misunderstanding, because it is engaged in multi-stage production of gross domestic product, as in the totality of all the goods and services for public final consumption and saving, and therefore is in demand when characterizing national economic production.

We would like to emphasize that only as a measure of the specific volume of production the indicator is in demand for the information model of cost as unit cost. As for its accuracy, it is a question of the correctness of the calculation of its value, be it total or relative, or the mean of the feature. In particular, in calculating this indicator, the amount of work used is represented by the average[2] number of employees, which is calculated according to the data of both adjusted schedules and unspecified composition.

It is important to take into account two circumstances:

- since the population of workers is directly engaged in mass production, it makes sense to calculate the value of the labour productivity indicator from the data of the average number of this population in primary and secondary production;
- taking into account the employment of managers, specialists and employees (other personnel) performing the functions of management, design and technology, economic and other support of production, the measure of their efficiency of work can be indicators relative (unit) number of employees in the respective population.

As a result, the following information model can be used to manage productivity:

$$B = \frac{B_{rb} \times \overline{t}_d \times \overline{T}_g}{1 + \sum_f K_{P_f}}, \quad (5)$$

[2] The authors consider it necessary to abandon the definition of "average number of population", which follows from the methodology of calculating the indicator.

where: B_{rb} — hourly productivity of the worker, the level of which is determined according to the model:

$$B_{rb} = Fo / te_N ,$$

where: Fo — capital productivity complex of fixed assets, representing their productive use in the implementation of a variety of technological processes;

te_N — labor intensity of operation and maintenance of the general complex of fixed assets as a generalized characteristic of the use of labour in the performance of a system of interrelated labor operations;

$\overline{t}_d$ — average daily working hours of a worker as a characteristic of the organization of his employment during this period;

$\overline{T}_g$ — average duration of the working year as a characteristic of the organization of his employment within the calendar year;

K_{P_f} — relative number of managers, specialists and employees characterizing the organization of workers performing the functions of management and preparation of production, information and other support.

Within the framework of the unified monitoring system of management accounting "contradictions" in "fixed assets" will be resolved. In addition, it is important to take into account, that, for a specific facility, decision — making is based on a set of functions. When the recent are many, it is important to distribute them in a hierarchical order, for in such a set there is no objectively equal. Ignoring this provision leads to dominance of functions rather than harmonization.

Definition of fixed assets of production as "fixed capital" requires consideration of them as elements of the turnover of the latter, the essence of which is most susceptible to knowledge, if by it means cash, which has passed the accumulation stage. In this turnover, capital changes, taking the following successive forms:

→ ***cash income*** → ***current savings*** → ***savings (financial capital)*** → ***fixed capital (productive capital)*** → ***commodity — capital*** → ***cash income*** →

Traditionally, the main element is productive capital (which is why it is called the main). As an object of management, it exists in the form of a complex of diverse items (capital goods), providing the production of a particular product — good or service. It is as such that fixed assets determine the productive capacity of the business unit of any degree of community; and their role increases as science and technology are introduced. Product sale in the markets generates cash earnings, forming income, and subsequently current savings as a source of savings, from which the process of simple or expanded reproduction of capital goods is carried out.

Considering the fixed assets (fixed capital) as a management object, we consider it necessary to distinguish such functions as "investment", "production", "liquidation", "financial". The first relates to the process of the acquisition of fixed assets and their commissioning; second — using them in the production of the product for the purpose and content of the proper technical condition; third — with the implementation of the subject as a commodity after a limited period of service; fourth — with capital accumulation assured.

In the form of a management object, first of all, are the main means of production in the part of the processes of acquisition and commissioning with a variety of species of capital; use in production and maintenance in proper technical condition through refurbishment; disposal due to various reasons, but above all for dilapidation and depreciation, including moral. Participating in technological processes as active or passive production tools, they realize consumer properties that laid down of their design: capacity (productivity), resource exploitation/resource usage, reliability, repair intensity, energy intensity, labor

intensity and material intensity, and content and like them. Knowledge of them underpins management decisions, for example:

• quantity of items for the simple or expanded reproduction of productive capacity, including through upgrading and reconstruction of facilities;

• use of items for specific quantities of specific work in specific conditions of place and time, develop technical maintenance and repair.

The first group requires data on the total cost of production, delivery, installation and commissioning of items for solving managerial problems. Therefore, accounting based on quantities is used *their evaluation at full cost*, updated information on *replacement cost* when tracking the amount of required income savings in cash.

In solving problems of an industrial nature, it is necessary to have actual information on the number and total capacity of items of all fixed assets, since the interoperability in modern technological development is almost zero. Based on systems of indicators to measure the availability, condition, operation and use of specific capital goods. Nevertheless, when estimating a business unit, the characteristic of all items of fixed assets (as integral complex involved in the production of products) is demanded. When looking at ways to measure it, the use of cost accounting using prices is considered acceptable as *calculators of different consumer values* on condition to requirement of comparability, and under certain conditions and permanence, as they are determined *cost of fixed assets at comparable prices*.

When solving the problems of the participation of fixed assets in the production processes, account is taken of the fact that the items, preserving their natural shape, are worn out, while losing part of their resource, and at a certain point and all fully. Therefore, their depreciation is being monitored on accounting on the basis of quantities, with a full range of indicators of their condition. Moreover, since the cost of depreciation is transferred to the value of the output in the amount of the so–called "consumption of fixed capital" (and in some accounting practices — "reserves for depreciation") for characterization of the groups and the totality of the items of production equipment requires data on the *cost of their depreciation*, and their subsequent *cost based on depreciation*.

These indicators are in demand when property, plant and equipment are treated as having a specific role in economic activity, when the economic entity (owning assets and conducting economic activities and transactions with other entities) makes decisions and assumes financial obligations, for which he is responsible his property, i.e. fixed assets. The latter are assets whose value is changed by the arrival of new and used items of appropriate value; movement of value in operation/use due to depreciation (physical and moral); disposal of items of liquidation or exchange value in the event of sale. Therefore, for the characterization of a complex of fixed assets, as property of a business unit, are in demand of *cost of depreciation of fixed assets*.

The situation is different when fixed assets are part of such management, and that is capital turnover. Reproduction of fixed capital requires savings from current savings — cash not used in actual activities. The most important resource of such savings is depreciation, now regarded as a method of recovery of savings spent on the acquisition, modernization and reconstruction of fixed assets. This is reflected in our capital turnover scheme, where the latter are recorded as a liquid asset, for which purpose it is proposed to estimate them by the *residual*, i.e. the value to be depreciated.

It is necessary to recognize that now at the highest level of the hierarchy turned out to be a "financial" function, while its purpose is

to ensure the process of money accumulation, due to which the items of fixed assets are put into operation and put into operation. That is the orientation of many of the so–called "economic mechanisms", including "accelerated depreciation" in its various manifestations.

In this case, due to the development of productive capacity and its effective use, the value of management functions, determined by the essence of the phenomena and processes occurring. As an example, we apply the practice of estimating national wealth by residual value of fixed capital, which is appropriate for characterizing assets as liquid assets. Or calculation of the indicator of capital productivity, as a measure of efficiency of use in the production of its complex of fixed assets based on data on residual value of "fixed capital".

Other solutions should be presented in a management accounting organization to improve information management. In particular, the efficiency of the business unit can be significantly improved if the latter is organized and managed as a coherent business process system. In addition, being the real object of management, each of them acts as a similar system of interconnected phenomena, functioning as objects of control at a certain level. Implementation of the process approach in management involves resolving a broad range of problems: from identifying business processes as part of the system to evaluating solutions for improving the performance of the entire business unit in specific aspects. As a result, the scope of the tasks and their relevance are determined by the principle: management accounting functions as an integrated system, the elements of which are statistically organized [15].

The above illustrates the problems that must be solved in the area of management accounting in the search for the answer to the question *"what to do?"* Having this result can move on to the second question *"how to do"?* and above all to the problems of digital transformation of management accounting.

The fact that, as an information system, it is an object of effective digital transformation is no doubt. But we need to understand whether such a transformation is possible within the concept of digital economy, implemented on the structures of the Internet community, given that modern platforms are able to provide cloud services *"Data-as-a-Service (DaaS)"*? in search of an answer, it is important to consider that the structures of the Internet community in the evolving digital space define their core function as *"providing information services and processing procedures for an unlimited number of users"*. And in order to implement it, the principle that all activities of the structures of the Internet community are based on approaches, de jure and de facto standards of the Internet, which means the use of standardized data processing procedures and analytical tools, especially the mathematical apparatus of data analysis.

Regarding management accounting as an information system with its main function — information support for managerial decision-making, it is important to understand that:

- *business unit in all respects has a unique management object,* operating in the context of many competitive markets;
- *management adopts and implements unique solutions,* the essence of which is determined by the content of unique managerial situations;
- *decision-making is based on a unique knowledge system* that is driven by an original system of observing specific phenomena and processes;
- *object of the monitoring is unique phenomena*, that appear production and financial activity in specific conditions determined by factors of the respective external and internal business environment.

As a result, the operation and development of management accounting can be carried

out based on a *unique* information platform, which, because of its nature, cannot be an active element of the structures of the online community. However, this does not exclude, that in the information process of such a system cannot be implemented standard solutions, including those based on the use of breakthrough digital technologies, especially *Big Data*.

Big Data performs in several guises, such as:

- huge data set in a variety of (structured and unstructured) formats from various sources at high speed;
- set of technologies for scaled databases and computer networks;
- organization of data analysis on the basis of a set of digital technologies providing solutions to the problem of obtaining knowledge about the reality. We are talking about the most popular techniques and methods of analysis, such as *Data mining*, data blending and integration, machine learning, pattern recognition, artificial neural networks, predictive analytics, simulation modeling, statistical analysis, analytical data virtualization [16–19].

With regard to *Big Data–analytics*, it should be kept in mind that the management accounting system may be embedded as a tool to support management decision-making (in a particular cycle) [20, 21], that including:

a) assessment of the current beyond past and future;

b) obtaining, as a result of standard procedures of data processing, knowledge about non-obvious, insignificant patterns of behavior, even in the case of their insufficient adequacy that are useful for the implementation of the functions of "proper management" (can reduce the risks of poor management decisions).

First, *Big Data–analytics* objects should include phenomena — factors of the *internal environment*, which are objects of monitoring, and for the next, management function does not aim to change the behavior of the object, enough knowledge. It is based on the consideration of individual "most significant" connections (relationships) and obtained based on an efficient sample and presented as mathematical construction quantitative criteria, including supporting statistical hypotheses.

Second, the objects of *Big Data–analytics* should include environmental factors implemented through the relationship B 2C (Business–to–Consumer), whose special significance is determined by the current focus on the consumer of created values, that objectively leads to building relationships between business and population in the form of partnership, where business — the object of management, population — the object of monitoring. This should be based on the characteristics of relationships, in particular: 1) remoteness of participants; 2) many of them, representing a large number of specific citizens; 3) high number of single acts; 4) implementation in an information environment. Such a relationship becomes effective if it is formed because of knowledge about the consumer whose uncertain behavior is that he can become your partner. Or maybe not, and that its relationship to a particular value is shaped by the influence of uncertain individual business interests. Formation of knowledge about the patterns of behavior of the monitoring object is connected with the analytical development of mass data on the facts of the business-population relationship, which in today's conditions cannot be imagined without the use of *Big Data* technologies.

Given that the value of analytics increases with the growth of the volume of attracted data, it is expected that the source of such knowledge will be the structures of the online community providing services of cloud technologies "*Data-as-a-Service*" (*DaaS*) in the part of services *"Big Data"* from the cloud. But this requires that these structures define *DaaS*

services as their main function for an unlimited number of users, which objectively determines the maximum implementation of the approach that de jure and de facto becomes the standard of the Internet.

CONCLUSION

The problems of economic management reform cannot be solved without taking into account the provisions on which the tasks of digital transformation of management accounting as a defining element of the information system of business units are based.

The most significant of them:

- the effectiveness of digital transformation is determined by the extent to which it corresponds to the theoretical and methodological foundations of information management support activities and the use of the data obtained in managerial decision-making (in accordance with the requirements of effective management);
- in modern conditions, the tasks of transformation are updated: the processes of monitoring the activity of the business unit (in all aspects of its manifestation) and its analysis on the basis of this information; knowledge of laws and regularities of operation of the object of management in specific conditions, forecasting on the basis of knowledge of its behavior in the direction of increasing efficiency;
- the purpose of management is quantitative changes in the behavior of the business unit in the conditions of preservation of its qualitative essence, as a result of which data are required that reflect the quantitative side of the whole variety of phenomena and processes, and implementation of its use in management decision-making;
- the management information system is based on a number of types of accounting, the consistency of which is possible in their unified system;
- the diversity of accounting has resulted from the concept of two information systems: *external,* designed to reflect a business unit as part of a higher degree of community structure and *internal,* designed to inform its management as a separate entity;
- the ultimate goal of any monitoring system is to build an information model of the managed phenomenon — its image, representing the factors and the mechanism of their influence on the effectiveness of the operation of the object of management;
- construction of the information model is based on the data of observation, which is organized on the basis of operational and technical, accounting and statistical types themselves and integration of their data for calculation of indicators in their system. Based on purpose, this monitoring system is defined as *managerial accounting*;
- effective management accounting ensures the highest level of compliance with the requirements of subject matter, accuracy and specificity of indicators as the basis for building highly relevant information models required in management;
- management accounting harmonizes all functions performed by the decision-making system in relation to a particular monitoring object;
- managerial accounting is an effective digital transformation. However, as an information system with the function of providing unique management decisions in the case of unique management situations in the behavior of a unique business unit should function and develop on the basis of its own unique information platform;
- the unique management accounting system can use breakthrough digital technologies, and especially *Big Data* technologies (in the part of *Big Data — analytics*);
- interaction of the unique management accounting system with the Internet

community is based on the services of the cloud services *"Big Data"* from the cloud.

The significance of the provisions considered is determined by the fact that the digital transformation of management accounting, on the one hand, is prone to errors in setting and solving tasks to improve the methodology of the latter, which could nullify the gains full benefits of modern digital technology. On the other hand, in case of wrong choice of information methods, in particular due to following "trends", it will not allow to realize expectations from improvement of information support of management and use of data in managerial decision-making.

The results of the research are intended for services engaged in the digital transformation of management of economic entities at all levels.

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