Formation of the Accounting and Analytical Support of the Financial Results of Organizations under the Digitalization Conditions

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Abstract. For any organization, accounting and analytical activity is one of the main tools providing the grounds for the effective management decision-making regarding the financial results formation. Digitization of the accounting and analytical support of the management activities cannot be limited only to the creation of a digital copy of the workflow and the access to the high-speed Internet. This article outlines the issues of the modeling an accounting procedure in a combination with financial and management accounting methods – as one of the means of the conceptual reconstruction of the economic life facts and economic processes that allow forecasting the financial results. The development of the financial modeling is considered, which consists in the creation of a unified model of the organization accounting process under the digitalization conditions. A financial organization accounting model has been formed that makes for the more comprehensive realization of the digital economy requirements, improving the quality of the accounting information and financial result forming. A model was developed for the consolidation of information flows of management accounting in the digital economy for the purpose of generating financial results, which helps to increase the reliability and comparability of financial reporting data.

1 Introduction

The topicality of improving the economic and social efficiency of organizations and identifying the main directions of its improvement is increasingly associated with the development of modern components of the digital economy.

The State Program for the Strategic Development of the Information Society of the Russian Federation until 2030 defines the digital economy as “economic activity in which digital data is a key factor of production, the processing and use of which, compared with traditional forms of using, can significantly increase the efficiency of various types of production, technologies, equipment, storage, sale, delivery of goods and services” [1].

The priority areas indicated in the program cover the Russian economy as a whole as an element of international integration, individual industries and the regional economy.

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For all the importance of introducing digital technologies into the system of state and municipal government, the main functional unit is still the enterprises and organizations that create a gross domestic product.

The organizations can quickly implement the main objectives of business digitalization, contributing to the optimal formation of financial results, including:

- effective support of the operational activities in all divisions, organization of accounting and control over each of the elements of income and expenses;
- preparation and transfer of the documents for internal and external use;
- quick receipt of reports on the state of affairs in the company for any period of time at any section and centers of responsibility;
- optimization of personnel costs, increasing the efficiency of working time by freeing employees from routine work;
- secure storage of information;
- improving the quality of customer service.

In the construction of economic models of the cost structure analysis were involved: Carrenbauer M. and Müllendorf R. [2], Govindarajan V. and Schank J. [3], Siegel J.G. and Shim J.K. [4] and others.

The main theoretical positions of cost accounting are investigated in the works of Anderson H., Needles R. and Kaplan R. [5], Atkinson E. [6], Drury C. [7], Horngren C. and and Foster J. [8], Khan D. [9], Scone T. [10], Upchurch A. [11] and others.

Kaplan R. and Norton D. [12], Porter M. [13], and others focused on cost management based on the concept of values chains.

The review of scientific papers allowed us to summarize the accumulated experience, the specifics of accounting and analytical support for the formation of the financial results of the commercial organizations in terms of the digital economy and to note the lack of research on forecasting the needs of industrial enterprises, taking into account the impact of the digital economy development on the industry-specific cost structure, as well as developing methodical approaches to the organization of accounting and analytical work in relation to improved provisions of the accounting policies and analytical support for the financial results formation.

All of the above determines the relevance of the research topic.

2 Research methods

It is obvious that all organizations are unique in their financial and economic activities. At the same time, the progress in developing software solutions for the accounting digitalization is associated with the fact that, along with the industry specifics, it is possible to isolate tasks that are common for the organizations of various activity types. Intelligent automation systems designed to manage the financial and business activities of organizations represent the top level in the hierarchy of management systems, affecting key aspects of its business activities, such as production, planning, finance and accounting, procurement and personnel management, sales, stocks management, maintaining manufacturing orders and delivery of the products, the provision of services. Such systems are created to provide the management with the information for making management decisions, as well as to create an electronic data interchange infrastructure between the organization and the counterparties.

To control the organization's financial results formation in a digital economy, it is proposed to analyze them, and the analysis is built on knowledge of the economic nature and laws of the financial relations functioning, processing a variety of data on the commercial organizations expenses and incomes, which requires the appropriate flexible software.

To this end, one can use direct, indirect, and graphical methods.

Direct methods include the methods based on the ratio of income to expenses of an organizations included in the production cost. If all information on income and expenses for the income tax declaration and the "Report on financial results" compilation is formed in the unified accounting programs, then the budgeting process in many enterprises continues to be carried out using the traditional methods, which often leads to inconsistency between financial, management and tax accounting data. From this point of view, rational planning of the production costs and the problems of finding ways to their optimal balance, that takes into account industry specifics of production, play an important role in the financial and economic activities of the organizations in the digital economy, the development of which has a differentiated effect on various elements of income and expenses, as well as on the degree of their impact on the final financial result of the company activities.

For example, the composition and the cost of the material and energy resources are most exposed to the external factors, which necessitate the search for information about the external contractors and the development of the contractual relations with them through the Internet sources.

Labor costs, by contrast, are dependent on the internal aspects, primarily such as the intellectual and qualifying characteristics of the organization human capital. The establishment of labor indicators based on the labor valuation methods automation will optimize the calculation of the rational numbers and the formation of payroll for all categories of workers, taking into account the contribution of each to the results of the collective labor. This will make it possible to correlate the divisions payroll funds directly with the volumes of the output or work and adequately reflect the amount of direct costs when calculating products, work, services, as well as pricing, which requires the use of the software adapted directly to the labor process of this company.

Indirect methods include the methods based on the assessment of the quantitative and qualitative characteristics of the information flows generated in financial accounting registers according to the requirements regulated at the legislative level, and the management accounting data, regulated by the organization itself. Accordingly, when studying the influence of the cost elements on profitability, the use of methods combining both quantitative and qualitative changes in the cost structure influenced by the digital economy is required.

Let's consider modeling as an accounting-analytical method, which allows studying the facts of the economic life and the economic processes not directly and peculiarly, but through the specially created images and descriptions of them: the symbols.

Graphical methods are represented by a variety of graph types (graphs, categorized graphs, sequential graphs, etc.) and their visualization methods (data sampling, painting, projection, rotation, etc.), on the basis of which the necessary comprehensive assessment and integrated approach to the analysis of the technical, technological, resource and financial components, as well as environmental factors is carried out.

The main tasks of the organization financial results management are the following:

- ensuring an uninterrupted process of the financial result forming in order to resolve the development tasks of the organization in the current and forthcoming period;
- optimization of the structural components and sources of the organization financial result formation to minimize costs;
- effective distribution of profits and minimizing the level of risk;
- development of a mechanism for rapidly changing the structure of the organization expenses and income and the directions of their modeling in accordance with the changing conditions;
- creation of a system of the effective control over the formation and use of the financial result of the organization activities in the field of accounting and tax accounting.

The object of modeling in this case is the consolidated financial and management accounting system, and the subject of modeling is the accounting process under digitalization conditions.

The financial accounting tasks are related to the structured tasks, i.e. they have an exact solution algorithm and can be represented by a simple mathematical model. The algorithms for solving accounting problems do not require the involvement of a complex mathematical apparatus and are based on the formalization of the description of the accounting rules contained in the normative acts and instructions. The existing accounting programs are built on this basis.

For the purposes of management accounting, in addition to the algorithms for solving accounting problems defined by the regulatory accounting base, additional development of a whole group of models reflecting the main features of the subject area, which are implemented differently in software, is required. The features of the models implementation determine the specifics of the technology of the software use, as well as its functionality.

At the heart of the concept of the accounting process digital modeling, the following basic principles are needed:

– sufficiency of the information used;
– invariance of the information used;
– continuity of models;
– the adequacy of the models system;
– reliability and comparability of the information used;
– tracking modeling;
– effective realization of the complex of the economic and mathematical models in the computer technology.

3 Results and discussion

Accounting modeling under digitalization conditions is aimed at creating schemes for processing, summarizing and grouping the financial information. The following functionals must be carried out:

– the choice of the methodological decisions in order to find a common entity in a variety of options;
– the use of a set of the methodological parameters and forms of accounting for the rational distribution of the accounting method indicators;
– formation of the accounting tasks and procedures in the form of sequential steps;
– imitation of the practical activities in the form of a game model;
– programming of business processes in order to identify the financial condition and probable paths of development.

The automated program developed for combining the information flows of financial and management accounting requires the following modules, presented in Table 1.

Table 1. Main modules characteristics.

Module	Characteristics
Financial management module	It includes cash flow management tools, as well as tax planning and tax burden optimization. It allows financial block personnel to reduce the workload and the amount of manual labor, to design their activities on the basis of control standards and goals, to efficiently manage monetary resources and to provide the company with finances strategically.
Operation module	It reflects all the issues of commerce and business and their constituent parts, including the control over income and the whole complex of expenses, involved in the formation of the financial result. Clear chains and processes of interrelations between business services such as sales and logistics, marketing, production sites, customer service, quality service and others should be set up in this module.
HR module	It allows automating the issues of registration of the staff, vacations, sick leave, benefits and other operations, usually taking a fairly large amount of time of the relevant departments employees.
Reporting and analytical module	The leading module in the work of the company, which allows forming a set of internal and external reporting data, as well as conducting their analysis for various management tasks. It includes a large number of statistical, mathematical and predictive tools allowing to set reference values, check their compliance, dynamic changes, or build strategic assumptions and hypotheses based on factor data.

The need to introduce an additional module for generalized control over the process of the generating financial results is determined depending on the scale of the organization's business. For large businesses it can stand out as a separate unit. For medium and small enterprises the monitoring financial results elements should be included in each of the above four modules.

The priority direction of the research, which is determined by the relevance of the topic, is the influence of the digital economy elements on the processes of planning, budgeting, accounting, analysis and monitoring of income and expenses of the commercial organizations.

Table 2 presents the simulation characteristics in more details.

Table 2. Models reflecting the features of the financial and management accounting consolidation.

Module	Characteristics
Conceptual model of the accounting data technology automated processing	The stages of the accounting process, cyclically repeated in each reporting period: - documenting of the business transactions and the formation of an information accounting database; - synthesis of the accounting data and the formation of the current accounting registers and internal reports; - completion of the reporting period, reporting and analysis of the budget execution and financial results of the company.
Account system model	1. The system of analytical management accounts by the accounting centers of responsibility. 2. The system of analytical accounts of the financial accounting. 3. The system of synthetic accounts in accordance with the regulatory documents of accounting and tax accounting. 4. Relationship between synthetic and analytical accounts.
Document flow organization model	1. The order of the accounting's documents formation, storage and processing. 2. The order of the department's documents formation, storage and processing. 3. Transformation of documents into the system of records on the accounts of management, financial and tax accounting. 4. The order of transferring data from production units and from external sources to the accounting department.
Accounting submission model	1. Methods of data entry into the accounting information system from paper or electronic media. 2. Algorithm for generating records of business transactions in the accounts of all levels. 3. Algorithm for generating reporting information for internal and external users. 4. Analytical data processing systems.

In the framework of digitalization any business transaction must necessarily be recorded in the operational accounting of the enterprise. In this case, as a result of the

implementation of the automation system, the accounting service, and all the interested parties as well, will receive a single information tool. Based on the fact that the accounting service traditionally deals with the basic documentation, it should take part in the implementation of all the system functionalities. In practical application this will allow centralizing the flow of the documents, information and the process of entering data into the system by creating a single subsection.

The main task of the accounting service in the development and implementation of the automated system is the construction of a transactional accounting system. There are several options for the transaction accounting scheme constructing.

By the first (traditional) version, the primary data are accumulated in the financial accounting according to the Russian standards (RAS), and only then they are translated into data according to the international accounting and reporting standards (IFRS). The information blocks for the tax and management accounting are secondary and are selectively transferred depending on the emerging needs for indicators of a specific nature.

By the second variant, the data from the same basic documents go directly to the responsibility centers of the respective departments for each type of accounting. A positive moment here is the possibility of differentiating data by the purpose of their use. The disadvantage of this option is a significant loss of time during the transmission of the identical information and the weighting of the document circulation process, which can lead to significant errors and reporting distortion.

Regarding the financial results in both the first and second variants, the priority algorithm is the model of the "The financial results report" form approved at the legislative level for accounting and for the profit tax declaration for tax accounting and explanations of these standard forms.

Table 3 summarizes the main organizational and economic measures that should accompany the implementation of the corporate information systems.

Table 3. Organizational and economic measures.

System components	Measures
Hardware and software	1. The selection and purchase of the computers that meet the necessary technical parameters. 2. Acquisition or modification of the standard accounting programs, the development and implementation of the additional modules for these programs that meet the goals of coordination with accounting types other than financial ones. 3. The development and implementation of the exclusive software for a given organization, taking into account the specifics of its operation.
Labor force	1. To ensure the effective functioning of all components of the system, employees with the competence of accountants, economists, analysts, system administrators and application programmers are required. 2. To maintain the compliance of the staff qualification characteristics to the constantly changing information and legal field of doing business, the continuous training in various forms is required (directly at the work or leaving the main work).
Changing of the organizational structure and areas of responsibility distribution	1. The development of an optimal system of separation and cooperation of the labor functions, contributing to maximum productivity is required. 2. Approval of changes in the internal control system and responsibility centers in the accounting policy and job descriptions. 3. The development of methods and techniques for the automatic confirmation (authorization) of some typical operations, including electronic signatures, hierarchy and frequency of documents and orders coordination.
Security techniques	1. The use of the standard software for the security of the electronic data when working with external Internet resources. 2. The development of access restrictions and other information security tools of an internal corporate nature.

A comprehensive security system consists of the following elements:

– classification of the information objects according to various categories of information security, requirements for their availability (reliability of services), integrity, confidentiality;

– roles policy, expressed in the characteristic functions and the degree of responsibility inherent to the certain groups of officials;

– creation of the information security methods and policies of an enterprise, consisting of taking into account the main (most dangerous) risks of information attacks, the current situation, the factors of insuperable strength and the total cost of the project;

– development of methods for ensuring the reliability of data storage services and services, which is achieved using the self-testing systems and introducing redundancy at various levels, in combination with an internal control system or internal audit.

A clear definition of roles, the classification of their access levels and responsibility, the compilation of a list of personnel compliances to certain roles makes the security policy clear, plain and easy to execute and verify.

All this will contribute to the rational formation of the financial results, and it will be possible to solve the problems of finding ways to optimally balance the cost and income, taking into account the sectoral or regional specifics, using digital modeling of the financial and economic activities of organizations in terms of technological transitivity.

4 Conclusions

The introduction of the digitalization elements into the process of improving the methodological support of the accounting and analytical processes for the financial results formation in commercial organizations not only helps to increase the automation degree of the individual processes, but also to reengineer these processes themselves.

For a long time already the automated financial accounting programs are the concomitant element of the organization's management activities that expand the operational management capabilities of the accounting and analytical services. The next task is to distribute and adapt the said software for management accounting, budgeting and strategic planning.

The use of a unified corporate automated system to manage the generating the financial result process can provide tremendous benefits to an organization in creating a system for effective management of the business processes, increasing the speed of reaction to the external environment changes, improving the customer service quality and increasing the speed of data analysis.

The conceptual model of automated processing of the accounting data is a model of the accounting process and reflects its most general, fundamental information aspects, allowing to form the optimal financial result of a commercial organization. As a result, the overwhelming majority of operations are standardized, high speed and more reliable data processing are ensured, data storage and information transfer is more secure, the organization's controllability increases significantly, and the degree of its information transparency also increases.

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