

# Prospects for the Development of Modern Information Systems and Automation Technologies in Accounting in Ukraine

Kafka Sofiia<sup>1</sup>, Haliuk Larysa<sup>2</sup>, Stepanyuk Olga<sup>3</sup>, Andriy O. Muzychenko<sup>4</sup>

<sup>1</sup>As. Professor, Head of accounting and taxation department, Ivano-Frankivsk National Technical University of Oil and Gas

<sup>2</sup>Candidate of Economic Science, Senior Lecturer of accounting and taxation department, Ivano-Frankivsk National Technical University of Oil and Gas

<sup>3</sup>As. Lecturer of accounting and taxation department, Ivano-Frankivsk National Technical University of Oil and Gas

<sup>4</sup>As. Professor of the Department Statistics and Economic Analysis, PhD in Economics, The National University of Life and Environmental Sciences of Ukraine

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## Abstract

The essence of information systems is determined, and the main factors that influence the development of information systems have identified — systematization of modern information systems and technologies used in accounting processes. The basic tendencies of development of information systems and technologies in accounting have revealed.

They are increasing the efficiency of the information support system. Its efficiency and effectiveness require the introduction of computerized accounting, automation and control of enterprises using new information technologies, with the need to use an integrated automation system.

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## I. INTRODUCTION

The primary purpose of accounting - is to meet information needs. Because the manual work process uses a much smaller amount of information than the accounting system has, it significantly affects the quality of guidance on management impacts on the entity. Even though accounting is the most improved management function, it is considered a dynamic system that is continuously improved. Provision should make for continuous adaptation to changes in management and time requirements [15].

The process of economic integration on a global scale, the rapid development of international economic relations have led to the need for internationalization and standardization of accounting. The transition to international

accounting and financial reporting standards opens new opportunities for Ukrainian companies for the consistency and efficient functioning of the information system. With the accession of Ukraine to the World Trade Organization and the decision to join the countries of the European Community, the problem of harmonization of the accounting system of Ukraine, following the requirements of these organizations, becomes urgent [5].

Contemporary theory and practice in Ukraine prove that active organization of accounting management in an enterprise is impossible without the use of information systems and technologies and their practical use, and is gaining importance in the management process.

The birth of new technical solutions creates an order for the corresponding software and abolishes old

technologies. Overcoming the quantitative barrier to meet the demand for a particular service or product causes specific difficulties in the functioning of economic entities, stimulating them to restructure their structures and determine their place in the economic infrastructure of the country or the world. The previous imposes an imprint on information systems and technologies in accounting, which necessitates the study of trends in their development in this field of activity.

## II. LITERATURE REVIEW

The research of accounting information systems and technologies is devoted to the works of the following national scientists: Sagatovsky V. N., Kogalovsky M. R., Pikulin N.Y. [14]. It should note that in the writings of these scientists, the issues of relevance of accounting systems have sufficiently discussed.

Luchyk G. M. considers accounting as a system in the formation of an information base for management, which is a logical continuation of the idea of considering the accounting system as a supersystem [10].

Considerable attention had paid to the problems of accounting automation in their research: Smuglyakova V. S., Garkusha S., et al. [15, 4].

Stepanova S. V., Matviychik N.S., Chernysh Y. M. considered the issues of modern information technologies in the organization of the accounting process in Ukraine [16]. However, most of the work on this issue focuses mainly on the technical aspects of the issue, while the justification of theoretical and methodological foundations is a prerequisite for scientifically sound approaches to any process or phenomenon.

The works of foreign scientists have marked by careful analysis of modern information systems and technologies, research of tendencies of their development. There are two diametrically opposite conclusions regarding the tendencies of development of information systems and

technologies. Thus, Lysin N. [9] is inclined to conclude that automation comes by the use of various software products, which have not fully integrated into a single information system. Almametov V.B. [2] is inclined to the opposite opinion and speaks about integration tendencies in the development of modern information systems and management technologies. In the work of an international group of scientists, much attention has paid to management information systems and technologies and, in the opinion of the authors of the article, insufficient attention had paid to the issues of accounting information systems and technologies research.

Along with the indisputable scientific value of the works of the scientists mentioned above, it should note that, in the opinion of the authors of the article, all these areas of research need to be supplemented with applied aspects, taking into account the current experience of using information systems and technologies in accounting.

## III. METHODOLOGY

The primary purpose of this article is primarily to study the contemporary features of the use of modern information systems and technologies in accounting organization in Ukraine. To achieve the goals of the study; the following scientific methods have used:

- 1). The method of analysis and synthesis has used to analyze the factors that influence the development of information systems and automation technologies in accounting;
- 2). Systematization method to systematize modern information systems and technologies used in accounting processes;
- 3). The method of logical conclusions has implemented for future manifestations of the tendency of development of information systems and technologies in accounting.

#### IV. RESULTS

First of all, it is necessary to consider approaches to defining the concept of information systems and information technologies. There are different approaches to defining the concept of a system. Yes, in the general form of a system (from ancient Greek-"interfaces") can be represented by a set of interrelated elements, which interacts with the environment as a whole and separated from it [3]. V. N. Sagatovsky [14] states that a system is a finite set of functional elements and relations between them, separated from the medium according to a specific purpose within a specified time interval. An interesting enough approach is when the system has identified with the reflection in the mind of the subject (researcher, observer) of the properties of objects and their relations in solving the problem of research, cognition [17]. There are also many other definitions of the term "system".that has used depending on the field of knowledge, research goals or context. One of the varieties of systems is information systems.

According to the authors of the article, the following definition of the information system should give information system - organized and finite set of interconnected elements that collects, processes, stores and transmits information to users: people, equipment, processes, procedures, data, operations. Are the elements of such a system. In today's context, the approach is justified, when integral components of the information system have offered to count data, hardware and software, as well as staff and organizational activities [1, 7, 11, 13]. Thus, the term information system is closely related to the term "information technology". Any information system has characterized by the presence of technology of transformation of input data into resultant information. Such technologies are commonly called information technologies. Thus, it is generally accepted by information technology to mean a set of methods and methods for searching, collecting, accumulating, storing, processing and transmitting information based on the use of

computer technology. In order to formulate the prospects for the development of accounting information systems, it is first necessary to outline the trends of development of automated information systems and information technologies in general. These trends have determined by a whole conglomerate of factors: scientific discoveries, new industrial technologies, market conditions in the world.

Today, accounting is ineffective without computer processing. Now there are many accounting programs on the market that satisfy a variety of requirements. Particular attention should pay for choosing the right program for our business.

Thanks to the high level of computer literacy of specialists in economics and accounting, it is possible to create high-quality software applications with the right set of functions. They are improving the efficiency of the information support system. Its efficiency and effectiveness require the introduction of computerized accounting and control of business activities with the use of new information technologies, with the need to use an integrated electronic accounting system [8].

Automation of individual complexes of accounting tasks helps to reduce the complexity of accounting but does not allow to make it fully operational. These issues have most fully addressed in the context of the automation of the whole complex of accounting work. Particular attention had paid to the development of packages of applications that implement the automated solution of all typical accounting problems.

One of the significant problems with the use of automated business accounting systems is the frequent change in regulations that set accounting, reporting and taxation rules. To solve this problem, we should opt for information systems that are more flexible and able to reflect changes in external conditions.

Significant problems are lack of qualified personnel,

transfer of data to the new system with minimization of expenses for entering this information. It should also note that there is a need for an employee responsible for maintaining and further developing an automated accounting system at the enterprise.

When implementing new information systems at the enterprise, it is necessary to assess the risk of lagging behind competitors due to their moral deterioration. Upon completion of the software delivery and installation activities, it is necessary to agree on the degree of need to adapt the typical software configuration and accounting features of the enterprise [12].

One of the most critical processes of our time is the integration of the world economy. This fact makes accounting automation time-consuming and a key to a successful transition to International Financial Reporting Standards. Without this, the transition to the international market and attracting foreign investment is impossible. If the company enters the foreign market, it is necessary to achieve compliance with the business organization with international standards. This problem is easily solved by automated systems that allow for a single input of primary data to calculate in a short time many indicators and submit them in various forms of reporting [15]. One way to improve the computerization of the accounting information processing system is to unify its accounting software. This problem is peculiar to the whole world of material production and each country. Currently available software in the market different in scope and functions: principles of construction, accounting technology and prices [16].

The set of information systems and technologies used in accounting can present as the following scheme (Fig. 1). The accounting process can use a large number of various software products and technologies for processing and converting information. The complex analysis of specialized information systems and technologies used in accounting made it possible to characterize the

current stage of the development of accounting information systems. Thus, the accounting automation of most enterprises (mainly small and medium-sized ones) has characterized by the so-called "flabbiness", is the introduction of various software products. As a result of such automation, accountants receive separate application systems with different variants of information exchange among themselves. As can be seen from the diagram, in the process of work the accountant deals with the following groups of information systems: specialized accounting programs; electronic document management systems; remote banking applications and services; information systems. Undoubtedly, the set of software products used and the degree of their integration into a single information system for each enterprise is individual and depends on the needs and financial capabilities of the organization. However, common to all businesses is that accountants use software products that belong to the above groups of information systems. Thus, the automation of accounting processes at the enterprise in modern conditions can go in two directions: - integration of the above software products into a single accounting information system; - the use of disparate application systems. The practice of using accounting systems shows that the highest efficiency has provided only when complex heterogeneous application systems, devices, registration technologies and accounting information used in a modern enterprise.

For example, combining a specialized accounting program with electronic document management systems allows us to obtain a particular efficiency gain, which is determined quite merely: the formation and submission of reports to the controlling authority are much faster. Second example: the transfer from primary counterparties of electronic documents with electronic digital signature via real-time electronic document flow systems to a specialized accounting program enables the accountant to significantly reduce the time of



accounting operations and minimize errors, to ensure group processing of primary documents. Thus, it is possible to speak about such tendency of development of accounting information systems, as a combination of various software products in a single accounting supersystem.

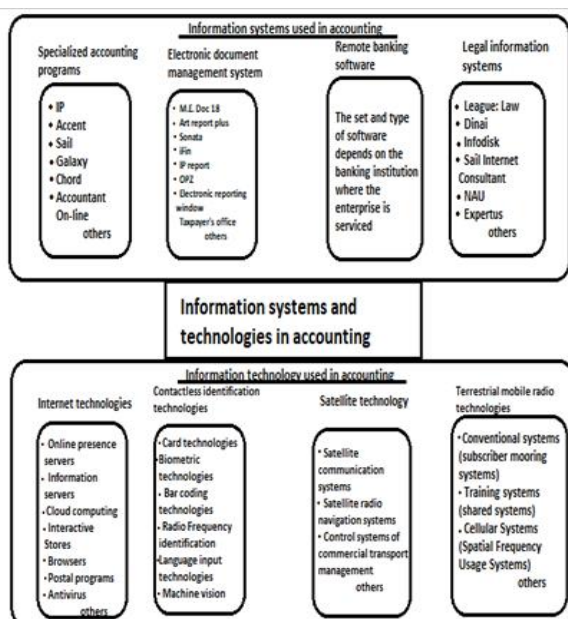
Accounting supersystem means a system that is a set of heterogeneous systems that act concerning the environment and other systems as a single unit to achieve common goals and exists based on distributed and organized information interaction between its elements. From this definition, the main distinguishing feature of a super system is that it is always a higher-order system concerning the systems it unites in the process of achieving a common goal. There is an accelerated development of electronic document management system. It is due, on the one hand, to the development of information technologies (Internet technologies, contactless identification technologies, satellite technologies), on the other - legislative regulation of electronic documents (obligatory formation of tax invoices in electronic form with the use of electronic digital signature and their obligations). Registration in the single register of tax invoices).

## V. DISCUSSION

The study found that the primary (key) opportunities for automation of accounting processes are: 1) obtaining prompt economic information; 2) automation of accounting of labour and its payment following the current legislation; 3) management of production and economic processes; 4) prompt receipt of information on the cost of production; 5) creation of an operational reporting system; 6) formation of analytical (financial and economic) reports and the like. At the same time, the expected benefits from the implementation of the automated accounting system may be the following: 1) improving the efficiency (efficiency, economy, flexibility (adaptability), reliability, safety and quality) of the enterprise; 2) timely decision making at different levels of management; 3) effective personnel management; 4) increasing the efficiency of management staff and workers involved in primary and auxiliary production; 5) effective debt control (based on technical and economic calculations, analytical evaluation, economic and mathematical modelling); 6) control (previous, current, final) of the results of the enterprise [4].

Accounting (as part of the accounting system) an orderly system for collecting, registering and generalizing information (in a monetary measure) about property (movable and immovable; tangible property, things owned by a legal entity), liabilities (contractual and non-contractual) sub ' economic activity (enterprises, institutions, organizations) and their movement by methods of continuous, continuous and documentary accounting of all economic transactions. The primary (key) elements of the method of accounting are: 1) documentation; 2) inventory; 3) costing; 4) accounting accounts; 5) double entry; 6) balance.

It is worth agreeing with the relevant and essential opinion that the accounting system in Ukraine today has theoretical, methodological and regulatory limitations that do not allow current accounting based on the cross-functional connection with the



**Figure 1. Basic information systems and technologies used in accounting**

strategy of the enterprise, which makes it impossible to obtain the information necessary for strategic management [6].

## VI. CONCLUSIONS

Thus, the prospects of implementing automated accounting information systems have inherently linked to the transition to international standards, which is currently an economic necessity. Transparency and quality of financial reporting is a prerequisite for the development of individual businesses and the economy as a whole. Therefore, it can argue that the prospects for accounting automation are unambiguous - they are a prerequisite for development. The introduction of an automated accounting system will help to ensure accounting efficiency and further development of the enterprise. However, it should remember that automation is a complicated and time-consuming process, and for its successful implementation, we need to think beforehand to address at least the significant problems associated with it. Information technologies (as processes of data systematization and information processing) provide automation of accounting method and other management functions in information systems.

Today, accounting information systems and technologies in Ukraine have theoretical, methodological, and regulatory constraints that prevent current accounting based on cross-functional linkage with an enterprise strategy that makes it impossible to obtain the information necessary for strategic management.

Reforming the accounting system in Ukraine based on international standards (using modern information technologies in accounting and management) is the basis of information provision for internal (managers, founders, participants and owners of property of the enterprise) and external (investors, creditors and other) users of financial statements information to make informed management decisions.

Practical implications. The prospect of further research in this area is to study the conformity of the provisions (standards) of modern information systems and accounting technologies to international standards

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