

# FUNCTIONAL IMPERATIVES AND DOMINANT IDEAS OF DIGITAL ACCOUNTING SYSTEM DEVELOPMENT

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## Abstract

The article examines the theoretical and practical aspects of the conception “digitization of accounting” as the necessary element in the improving process of the technique, technology and organization of accounting process. The system of the enterprises’ digitization is based on regular and information collection in time, its analysis, planning and forecasting on this basis of its activity. This system includes all spheres of the enterprise’s life and as a result it has the aim to integrate them. It can be used in manufacturing, logistics and marketing, financial and investment-innovation activities. The studying system coincides with accounting tasks largely: formation, accumulation, transformation and transmission of information with purpose of making the effective management decisions. These enterprise’s functions can be combined with others in the middle of each department unit without necessity to form a separate structure. The important role in development of digitization system is played by the human factor: the constant improvement and development of staff needs special attention; professional development of digitization workers. The main idea in using digital tools lies in simplifying the accounting process and to performing its inherent functions with maximum efficiency (digitization is inextricably linked with information). Development of accounting system requires a comprehensive using of dissemination and coverage of IT technologies not only by enterprises but also their counterparties, using the latest means of informatization and transformation of existing ones. Because as current technologies, which have been tested and proven their effectiveness, can be used in the enterprises’ activity. In the process of organizing the accounting system it must be reformatted an accounting policy of the enterprise, to review a large number of transactions, to review the necessity of using in practice some of them. In addition, in the process of using the principles of digitalization, it is necessary to determine the content and meaning of concepts related to this sphere, the possibility of their usage in the process of accounting system improvement. The main and necessary are the next instruments: maximum usage of digital documents circulation in accounting system – a “must have” for any enterprise; increasing the efficiency of accounting process directly depends on information amount transformed with the help of used digital tools; transformation of existing technology and expansion in the process of usage “cloud services” and systems of interaction between accounting objects; developing the principles of chatbot usage as one of accounting technology tools, through automation of repetitive processes and interactive communication with users (suppliers, contractors, employees, etc.); spreading the system for users by deploying accounting services on a single platform, which will determine its cost effectiveness.

**Keywords:** information, accounting system, digitization, digital transformation, electronic communication.

## INTRODUCTION

The development of information technologies significantly changes the structure of the economy of the state, region, enterprise. The widespread expansion of virtual enterprises that operate solely in the electronic sphere is no longer a novelty;

significant changes also occur within traditional enterprises. The fact that modern IT technologies alter the main factors of the reproduction at the enterprise is becoming an axiom, which, accordingly, changes the tasks of business management and the economy of the enterprise.

At present, a major socio-economic effect depends on the processes of digital transformation of all spheres of life – the digital economy. A significant amount of information is located on millions of websites, replacing television, newspapers and magazines on a large scale. The use of blogs, e-mail, social networks to share important information and conduct business communication is becoming a social norm. All these processes can be characterized by a small but cumbersome statement: “The basic transformation of the present is the transition from offline to on-line mode or digitalization”.

## **RESEARCH RESULTS AND DISCUSSION**

The issues mentioned above are the subject of discussion led both by scholars and practitioners around the world. The 20th World Congress of Accountants, held in November 2018 in Sydney, Australia, can be characterized as a historic one. The uniqueness of this event was uniting 6000 accountants from over 130 countries. The theme of this event was related to the changes that are taking place in the world under the influence of dynamic technology development and the way this process influences the development of accounting [1].

During the World Congress of Accountants (WCOA 2018, Sydney) a report was delivered by Dr. Ayesha Khanna (the co-founder and the CEO of ADDO AI, a consultancy firm and artificial intelligence (AI) incubator) on the topic: “The digital factor: artificial intelligence, automation and opportunity – a leap into the 21st century”. The author suggested that the audience present should join her in seeking the answer to the question: does the development of technologies in this field really pose a threat to the profession of an accountant?

According to Dr. Ayesha Khanna, we need to understand and accept a well-established fact that a lot of our present reality and virtually everything that will relate to our future, in one way or another, is (or will be) under the influence of artificial intelligence [2]. According to the speaker, the obvious benefits related to the use of IT are clearly illustrated by the fact that almost every month recently more and more countries have announced it as a part of their national strategy for successful development.

And here, according to A. Hannah, the situation seems paradoxical, when within the network of accountants extremely concerned with the development of artificial intelligence its actual use is in the “most embryonic state” at present. However, there are rather impressive opportunities for its use at the existing level of the corresponding technology development in the field of accounting, corporate finance and jurisprudence [2].

Trends in the development of the domestic economy in general, and accounting, in particular, involve the reactive development of digitalization processes. The use of opportunities that information technologies offer in accounting practices is often seen as a threat to the profession. It is argued that an accountant is a profession of the past,

since starting from the moment of transformation of the document management processes of the enterprise from traditional media into cloud resources and other IT tools, people will become obsolete. However, these assertions are questionable, since accounting is a creative profession that often requires sound decisions, the ability to choose the best option from the totality under certain circumstances.

In view of this, it is impossible to disagree with the opinion of Pozov A., a chairman of “All-Ukrainian Accounting Club” NGO and a member of the Methodological Board on Accounting at the Ministry of Finance of Ukraine, who emphasizes the following: “Personally, I imagine an accountant not as a book-keeper or a checker, but as an operating director or business conservation and development consultant applying financial and non-financial information. The accountant is obliged to sit at the main table where management decisions are made” [3].

Conceptual foundations of the modern accounting system management are presented in the article by professor Plaksiienko, V.Ya. and Nazarenko, I.M.. According to the authors, the reaction to the socio-economic relations informatization which contribute to the business processes optimization should be the substantiation of conceptual foundations of paperless accounting management, which should be based on the current active conceptual maintenance of accounting development and take into account the requirements of cognitive-informational economy [4].

Digital economy is a combination of all types of activities based on digital technologies as well as the appropriate infrastructure to support the functioning of digital technologies (processes: creation, collection, processing, storage and transmission of information based on digital systems). Enterprises existing in the digital economy can be broken down into three types, each of them having its own specific features (Table 1).

Table 1. Applicability of digital technologies at enterprises

	<b>Operating principles</b>	<b>Implementation elements</b>
<b>“Traditional” industrial enterprises</b>	conducting business and using assets in “offline” mode, but actively applying modern technology as their infrastructure (hardware, communication system, software, ERP and CRM systems)	<ul style="list-style-type: none"> <li>- exchange of information with tax authorities;</li> <li>- use of electronic document circulation systems, digital signatures;</li> <li>- call-center or loyalty department which operates using big-data.</li> </ul>
<b>Online-enterprises</b>	conducting business exclusively through virtual channels, maintaining contact with consumers through virtual showcase exclusively (may have physical assets, but these are only a stock of finished goods, warehouses and outlets)	<ul style="list-style-type: none"> <li>- integrated into the digital economy to some extent;</li> <li>- Internet is their main sale channel, the place where the revenue is generated;</li> <li>- product promotion devices and advertising channels are also virtual, digital.</li> </ul>
<b>Virtual enterprises</b>	conducting business is not tied to a physical asset	<ul style="list-style-type: none"> <li>- development and expansion through innovative startups.</li> </ul>

Digitalization process at enterprises is not just IT business, but the extension of its capabilities in other related fields: managerial, servicing, banking, as well as industrial ones. The latter needs maximum transformation which is a difficult task the solution for which lies in two planes: the objective and the subjective. The objective reason is the banal lack of funds, and the subjective plane is the use of modern technologies in traditional industrial systems, which is a mental problem for business executives because it requires the introduction of something yet unknown and, to some extent, risky.

Modern requests for digitalization at Ukrainian enterprises are changing from production to logistics, accounting, document management, HR department operation.

The digitalization tools can be the following:

1. A smart addressee database – the use of address verification system which increases the productivity of the operator’s work. Previously, when working with on-line stores the process involved requesting the address database in a strictly defined format or structuring it manually. Now the recipients’ addresses can be transmitted in any form, including the Latin characters, and the system created on the basis of semantic analysis automatically checks the suitability, correctness and transforms it into the required work format.

Based on IT solutions, there has been created a module that makes a delivery within a two-hour time range accessible to online shoppers.

2. Transparent management reporting: errors are reduced to zero. Sufficiency of information for comprehension of business indicators, its directions in “here and now” time mode, allocation of “bottlenecks” for each of them for making effective management decisions by business executives. That is, to implement “Management accounting” information project in interactive mode, to identify key points for each business direction and to allocate the necessary amount of analytical research; to provide online synchronization with 1C databases and technical implementation through the tools which are technologically essential. It is necessary to conduct training for executives of different levels on the basis of the developed information product (the feedback will provide means for correcting technical, technological, organizational and methodological errors and inaccuracies). These measures will positively affect the functioning of the internal decision-making system at the enterprise, in particular allowing: to reduce the costs of accounting and financial apparatus; to minimize technical errors; to reduce time for managerial decision making; to increase the financial literacy of the staff involved in this process.

3. The use of chatbots in operational activities. This provides for the development of a portal where accounting records for labour cost accounting of the employees of the enterprise would be allocated (creation of a chat-bot which, upon request, sends the necessary personal information which is technically regulated in advance to the employee’s personal cabinet where information is stored not only concerning the current period but the preceding periods as well). According to the legislation, personal data is confidential information, so in practice, the accounting service sends the generated accounting records to the email addresses of each

employee, or via personal delivery, which is generally unacceptable taking into consideration the current conditions of technological development.

This is just one example of possible improvement in the operating processes which are numerous at enterprises.

4. Creation of internal service portals – on-line service for real-time interaction among staff and internal structural units (ordering required certificates, using document templates, legal advice, etc.). Such services can be included in corporate wage supplement packages for employees. As a result, with a small amount of resources spent on creating and maintaining the system, we get internal services activities organized in a more efficient way, releasing their employees from routine affairs, and providing the company staff with additional service products for daily use.

5. Digital recruitment service – the use of cloud technologies that would integrate information from recruitment agencies, employment services, and enterprise requests for the required employees. This system allows, at low cost of resources, to provide enterprises with the necessary human resources, especially those that are seasonal or have unequal peak loads (the recruitment of a sufficient number of employees with appropriate qualifications within a minimum period of time, online operation in 24/7 mode, automatic control etc are guaranteed).

There should be mentioned some issues which exist along with the benefits of digitalization. The use of up-to-date information systems and technical tools can cause a shortage of skilled workers and will also require the population which is employed already to have profound changes in thinking and approaches to fulfilling the production tasks towards utilizing the digital economy opportunities.

It is already clear today that new knowledge-oriented segments will emerge in the structure of the economy that will stimulate the demand for digitalization experts. However, the process of total implementation of digitalization mechanisms should be treated with care, and it should be taken into account how this system will change the employment of the population and what new opportunities and horizons it will provide instead. Obvious that today the competency-building process requires more attention to STEM in the long term, but at the same time, the education system must also focus on developing creative skills and critical thinking.

Another important issue that needs to be addressed is the modern model of training and retraining of accounting and tax professionals. This process must meet the adequate requirements of market economy and regional needs which requires improving both the content and the organization of the training process. Today, graduates of institutions majoring in accounting do not have sufficient knowledge of legal issues, taxation, management, contractual relations, the ability to work in situational management mode, and most importantly, to use the digitalization advantages and opportunities.

The higher educational system majoring in accounting should provide diverse and in-depth training for professionals who would possess strategic thinking, the ability to predict events, strive for continuous improvement and knowledge accumulation. Professional training and retraining of accountants is inextricably connected with the use of quality literature, which generally lacks clear scientific

concepts; regulatory documents content duplication takes place; the study content is taught through the application of traditional methodology. Therefore, today there is a need for in-depth presentation of contemporary study content which would be constantly updated.

Continuous improvement of teaching methods of accounting disciplines, widespread use of interactive teaching methods, retraining of teachers is of great importance in training the accountants at the university.

A key skill that a future accounting and taxation professional must possess is to evaluate the possible impact of the tools used in the synthesis of reporting indicators in the stakeholders' opinion and their response in the form of decisions made. The formation of this fundamental skill requires knowledge not only in the fields of accounting and taxation, but also in microeconomics, firm theory, financial management, information technologies, legal studies, psychology, etc. This proves that accounting is creative work that requires a comprehensive understanding of economic activity, as well as its individual elements in detail. It is impossible to master such skills without a quality education in the field of economics. In this context, the axiom is the assertion that human development in the surrounding reality in the world of global technology requires quality education.

At present, the development of the economy requires the professionals to acquire skills and competencies in the field of accounting and taxation using IT technologies, principles of digitalization, etc. That is, the transfer of routine areas of work in its various directions to the means of electronic information processing. The changes that are taking place raise new demands towards accounting staff but, at the same time, open up new prospects for improvement. For example, understanding the methodology of accounting in accordance with international standards opens up both domestic and other markets to professionals, gives an opportunity to speak about the professional competence, and is in demand among business entities.

Modern transformation processes in the economy are taking place at a very fast pace, so the response to changes becomes a key indicator of a professional's success at the labor market.

On the pages of "Everything You Need to Know about Accounting" newspaper, the authors of the article "Improving the quality of accounting and taxation specialists training" Ohiichuk, N. and Vasylyshyn, S. argue that curriculums should be aimed at achieving ten skills and competencies that an employer may be interested in for engaging an accountant into his/her team, in particular: reducing tax pressure on the enterprise; professional experience; the ability to make key commitments; experience in management accounting organization and managerial decision making; communication skills and ability to work in a team; use of IT technologies; the ability to adapt quickly to external changes; experience in using international accounting standards; experience in application of international accounting standards; application of global principles of management accounting; synthesis of theory and practice [5].

The authors of the article "What an Ideal Accountant Should Be Like" published in "Business" magazine emphasize that finding a professional accountant today is not an easy matter and dwell on the social image of a Ukrainian super-accountant. Having analyzed more than three hundred vacancies, experts say that the image of a

modern accountant can be characterized by one key phrase: “Perfection in everything”. The authors note that the requirements for a professional in accounting depend on the scale of the enterprise, but the main tendencies of the labor market are obtaining a higher field-specific education, mastering a foreign language (at a level not lower than intermediate), the ability to work with accounting programs (demand for English software products) and work experience available (not less than 3-5 years) [6].

It should be noted that the skeptics of the profession claim that the necessary knowledge can be acquired through accounting courses, but employers invariably prefer specialists with higher education in this field, since the latter have acquired greater competencies, having knowledge not only in the profession, but also in the disciplines provided that gave the opportunity for the formation of professional logical thinking. Moreover, without mastering a foreign language and the latest information technologies career growth becomes impossible.

In the field of education, the concept of “digital economy” is interpreted into the concept of “digital educational service” – the main current task of this field of knowledge upon which the future progressive development of education and science in the state depends.

The development of professional staff and scientists should be significantly enhanced as it is the category of people who enter active economic life today and is the medium of innovation. The creation of new scientific ideas and their commercialization is an indispensable component in enterprise management, a basic condition of their development. Today, this is a bottleneck in the activities of domestic enterprises. Occasional efforts to improve the educational and scientific processes in educational institutions need to be accelerated if we want professionals who are already living in a new technological setting to meet the demands of the present period. Curriculums need to be modified radically, not trying to defend and accumulate only individual, mostly narrow teaching methods.

The decision-making process is becoming more complicated, thus the requirements applied to the human resources involved in it are also becoming more complex. Despite the current demand for accountants, the requirements applied to involving the human resources are increasing, and it is common practice for many companies to require future candidates to speak foreign languages according to international accounting standards.

Improving the quality of education majoring in “Accounting and taxation” is possible today. The first steps may involve reviewing the curriculums to ensure compliance with the requirements of the most reputable international accounting associations: the American Institute of Certified Public Accountants (AISRA) and CIMA – the Chartered Institute of Management Accountants (the UK). In addition, the experience of European countries proves the long-term benefits of dual education (a combination of theoretical training in classrooms and practical training within the actual enterprise). At the same time, the ability to apply modern information resources and technologies in practice is of particular importance in the training process.

Thus, digitalization provides means both for creating new opportunities in the labor market and causing labor risks the main of which is the risk of shortage of the human resources possessing the correspondent qualification. That is, innovative transformation of the economy provokes transformation of challenges into opportunities in our profession.

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