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## INFORMATION TECHNOLOGIES IN PROFESSIONAL ACCOUNTING AND TAXATION WITHIN THE CONTEXT OF UKRAINE’S ECONOMIC DIGITALIZATION

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The article substantiates and analyzes the digitalization of the Ukrainian economy in terms of the features of applying and using information technologies in professional activities related to accounting and taxation.

The study aims to examine the digitization of professional activities within the domains of organizing accounting processes at enterprises and the workflow of employees in the fields of accounting and taxation, as stipulated by accounting standards. It also explores communication interactions at various levels of enterprise management, the enterprise’s interactions with the external environment, the production of business consulting for entrepreneurial activities in the realms of accounting and taxation, as well as the organization and execution of conventional enterprise business processes, such as supply, production, and sales.

In conducting the study, the authors employed both inductive and deductive methods, along with methods of analysis and synthesis.

The results obtained during the implementation of this study are expected to have a scientific and practical impact on enhancing and determining the prospects for the digitalization of the Ukrainian economy, specifically in the context of utilizing information technologies in professional activities related to accounting and taxation.

The originality of this work lies in the suggestions for implementing the sanctions filter in the professional activities of accounting and taxation, as well as its integration into the official responsibilities of accounting personnel.

**Keywords:** *accounting, taxation, digitization, sanction filter, job duties of employees in the field of accounting and taxation.*

### TEHNOLOGII INFORMAȚIONALE ÎN DOMENIUL PROFESIONAL CONTABILITATE ȘI FISCALITATE ÎN CONTEXTUL DIGITALIZĂRII ECONOMICE A UCRAINEI

Articolul fundamentează și analizează digitalizarea economiei ucrainene din punct de vedere al caracteristicilor de aplicare și utilizare a tehnologiilor informaționale în activitățile profesionale legate de contabilitate și fiscalitate.

Studiul își propune să examineze digitalizarea activităților profesionale în cadrul domeniilor de organizare a proceselor contabile la întreprinderi și a fluxului de lucru al angajaților în domeniul contabilității și fiscalității, așa cum prevăd standardele de contabilitate. De asemenea, studiul explorează interacțiunile de comunicare la diferite niveluri ale managementului întreprinderii, interacțiunile întreprinderii cu mediul extern, producția de consultanță în afaceri pentru activitățile antreprenoriale în domeniile contabilității și fiscalității, precum și organizarea și executarea proceselor convenționale de afaceri ale întreprinderii, cum ar fi aprovizionarea, producția și vânzările.

În realizarea studiului, autorii au utilizat atât metode inductive, cât și deductive, precum și metode de analiză și sinteză.

Se așteaptă ca rezultatele obținute pe parcursul realizării acestui studiu să aibă un impact științific și practic asupra îmbunătățirii și determinării perspectivelor de digitalizare a economiei ucrainene, în special în contextul utilizării tehnologiilor informaționale în activitățile profesionale legate de contabilitate și fiscalitate.

Originalitatea acestei lucrări constă în sugestiile de implementare a filtrului de sancțiuni în activitățile profesionale de contabilitate și fiscalitate, precum și în integrarea acestuia în responsabilitățile oficiale ale personalului contabil.

**Cuvinte-cheie:** *contabilitate, fiscalitate, digitalizare, filtru de sancțiuni, atribuții profesionale ale angajaților din domeniul contabilității și fiscalității.*

#### Introduction

Our lives are intricately linked with information and communication technologies, which have evolved alongside processes of urbanization and scientific and technological advancements. In today’s modern con-

ditions, it is impossible to separate them from various aspects of our lives. On the contrary, they serve as significant catalysts for scientific research and practical improvements. Their pace continues to accelerate, with new functionalities and challenges emerging, and their demand for advantages in both business and everyday life remains high.

In the contemporary economic systems, information is regarded as a vital resource, with its processing, use, and transmission profoundly influencing the economic development of individual industries and the nation as a whole.

The modern information environment has the potential to enhance the efficiency of management personnel and specialists in the fields of accounting and taxation, but it can also hinder them. An excess of 'informational clutter' and irrelevant data may impede concentration on specific tasks.

All of this underscores the necessity to examine the current state and unique aspects of utilizing modern information technologies in the professional activities of accounting and taxation within the context of Ukraine's digitalized economy.

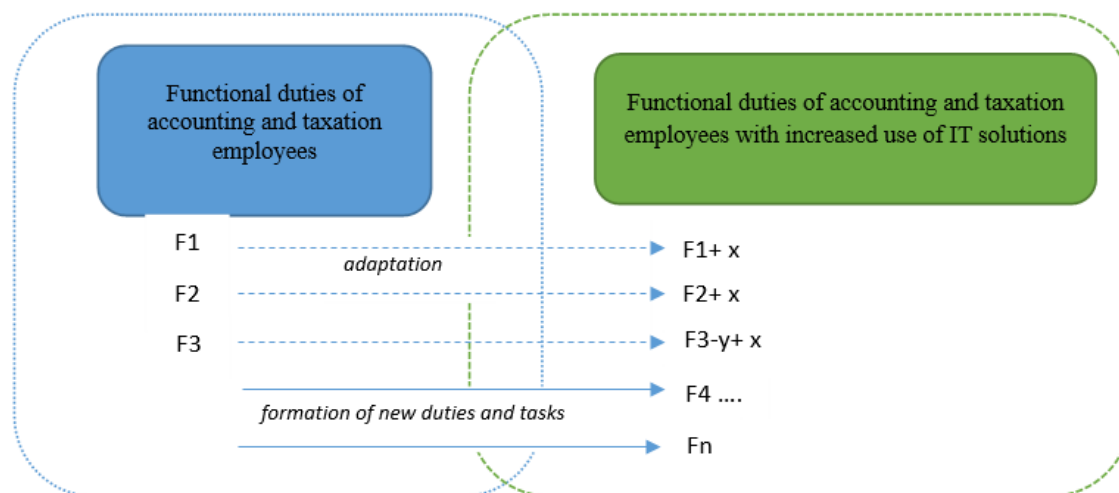
### Results and discussions

The development of the IT sector has enabled the separation of numerous functional areas of responsibility and interaction, which were hard to envision in the recent past. The catalyst for the advancement of such technologies was the global COVID-19 pandemic and the resulting restrictions. The challenges of remote management, as well as the coordination of employees and teams, were effectively addressed through the utilization of IT tools.

With the advent of electronic formats for conducting various operations, accounting has witnessed the emergence of several trends, including outsourcing, collaborative accounting, and the implementation of blockchain systems [2].

These developments have led to shifts in functional responsibilities, emphasizing the importance of acquiring and applying IT skills in professional activities. Figure 1 schematically illustrates these changes.

**Fig. 1. Changes in the Functional Duties of Accounting and Taxation Employees Amid Digitalization.**



Source: own development.

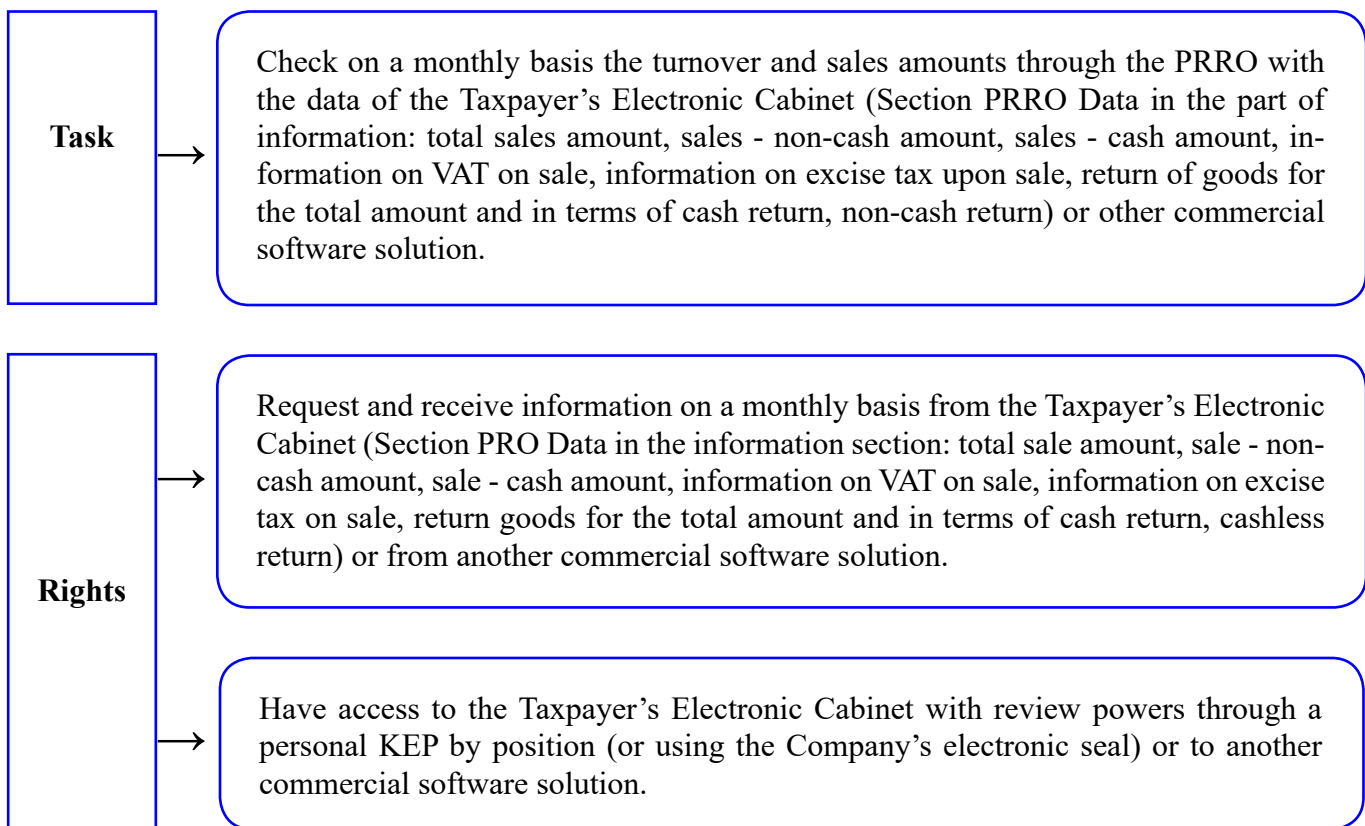
The digitalization of economic sectors leads to changes in professional activities, including:

- organizing the accounting process within enterprises;
- conducting work in accordance with accounting standards by employees in the accounting and taxation field;
- facilitating communication at various levels of enterprise management;
- enhancing communication between enterprises and the external environment;
- business consulting services in accounting and taxation;
- organization and execution of core enterprise processes (procurement, production, sales).

In the context of digitalization, organizing the accounting process within an enterprise necessitates modifications and additions to the existing job responsibilities of employees, emphasizing the utilization of information and communication technologies (as shown by +x in Figure 1). This entails a requirement for employees to incorporate such technologies not only into traditional accounting functions but also into the adoption of modern IT solutions within the realm of accounting and taxation. We see a predominance of modern IT solutions in the interaction among accounting and taxation department employees.

The implementation of transaction software registers results in the creation of a high-quality sales database in trade, catering, and service sectors. This creates a duplicated information database, both within the enterprise’s information environment and on the tax authority’s servers. The access to this information is expanding, particularly during various types of inspections. This information is accessible to the taxpayer in their electronic taxpayer office under the „Cash Register Data” section. As a result, all trends in cash and non-cash settlement implementations through transaction software registrars are easily identifiable and can be utilized for both enterprise planning and regulatory authorities’ planning. In this regard, it’s important to note that accounting personnel and taxation specialists have an obligation to compare the data stored on the tax authority’s servers with the information in their own existing accounting system (see Figure 2).

**Fig. 2. Proposed Job Description Supplements for Digitalization in Trade, Catering, and Service Provision Processes.**



Source: own development.

New duties and tasks for accounting and taxation employees are evolving to enhance tax administration and improve interaction with government entities. The introduction of technical capabilities for generating settlement documents and the nominal (piece) use of excise stamps imposes an additional burden on the entity while imposing stricter requirements for combatting illegal and counterfeit alcoholic beverages. Figure 1 depicts + F4,... + Fn.

The work processes of employees in the accounting and taxation sphere, guided by accounting standards,

are also evolving in response to the digitalization of our lives. This evolution is primarily driven by the integration of IT solutions in the automation and processing of accounting information. As of 23.02.2022, the most popular software products were BAS Accounting, known for its various configurations. However, alternative accounting programs and IT solutions are gaining popularity. Notably, the ODOO complex [3] stands out for its detailed modules and affordable pricing, and Project budget [4] offers cloud-based solutions for enterprise development and management [4], MASTER: Accounting, an analogue and Ukrainian alternative to 1C, is an information and analytical system for digitally transforming business processes in planning, accounting, and resource management, alongside A5.ERP, and others. These systems heavily rely on cloud technologies, necessitating constant internet access for employees in accounting and taxation units.

Overall, employers in the field of accounting and taxation now require proficiency in cloud technologies and computer security due to their widespread use.

Communication among different levels of enterprise management has improved, especially through the use of social messengers and the creation of relevant groups, as well as the adoption of corporate phones or IP telephony. Many messengers are available, with most offering free software products, but there are also paid solutions, such as Microsoft Teams. Opportunities have also been developed to create direct chats through the mechanism of creating email accounts within specific commercial or other domains, such as using chats in Google Workspace.

Online meetings have become a routine aspect of organizing business processes, both during the COVID-19 pandemic and in the current state of martial law. This highlights the widespread internet access and its utilization in the work of accounting and taxation specialists.

The enterprise's communication with the external environment primarily involves interactions with government agencies and business partners. Government agencies are increasingly utilizing information technology and remote services, reducing physical contact with business entities and mitigating corruption risks.

It's worth mentioning the «Action» portal, implemented and operated by the Ministry of Digital Transformation of Ukraine. This portal has greatly enhanced the ability to deliver services remotely through electronic document management and communication tools. Frequently employed processes include automatic business registration, limited liability company registration based on a model charter, and the registration, modification, and termination of individual entrepreneur activities.

In general, the plan for 2024 includes achieving 100% online availability of state services, contributing 10% of the country's GDP from the IT industry, and providing 95% of the transport infrastructure with high-speed, high-quality internet [5]. These ambitious goals aim to secure competitive advantages for the Ukrainian economy in the global market, guide its future development, and maintain a balanced economic structure.

Business consulting in the accounting and taxation field reaches a higher level when consultants can utilize remote communication tools and interact effectively with their clients. This expands the geographical reach of such activities and simultaneously intensifies competition in the consulting services market for accounting and taxation. In our opinion, all of this contributes to an enhancement in service quality.

The utilization of modern remote work tools and information technologies is evident not only in the organization of consulting activities but also in direct information processing and the creation of consulting products. These products result from the intellectual efforts of consultants, developed through the processing of extensive information related to modern IT solutions.

Consultants frequently subscribe to news and analytical articles related to their areas of interest and relevance to their work. This practice reduces the time required to address specific professional issues in accounting and taxation consulting, minimizing the risk of consultants making incorrect decisions in their work.

It's worth noting the extensive options available for providing consultants with access to the enterprise's information system, such as:

1. creating a distinct user profile (Consultant's Name) in the enterprise's information system with 'view' permissions. Access can be facilitated through on-site workstations or remotely via the enterprise's information servers;

2. when using „cloud” IT solutions for the enterprise information system, a temporary user with <view> permissions can be created.

As a result, business consulting utilizing modern IT solutions becomes more effective both internally in work organization and externally by enhancing the quality of professional services.

The organization and execution of traditional business processes at the enterprise (supply, production, sales) undergo significant changes with overall digitalization. Modern IT solutions in the supply of goods, services, and works enable the identification of suppliers offering favorable logistics, pricing, or service terms, simplifying interactions with partners and optimizing supply chain and inventory management.

Additionally, we highlight the procurement organization through state auctions or auctions with government backing. Services like Prozorro have transformed relationships within the «Suppliers-Customers-Public» triad, enhancing transparency in public procurement. This increased transparency provides the market with more information about sales transactions. This enables the market to access additional information about sales transactions, a tool that can be used by businesses of any form seeking reliable suppliers. To facilitate this, there is a need to expand the official responsibilities of employees in the accounting and taxation field (as indicated by  $+F_4, \dots +F_n$  in Figure 1). Modern production processes for goods and services are increasingly automated, reducing the need for human resources. A detailed system of parameters has become essential for determining added value and marginal income at each stage of the technological process.

There is also a noticeable growth in e-commerce trends and the utilization of modern information and communication technologies. CRM (Customer Relationship Management) systems are increasingly popular for bolstering sales, automating processes, and gathering customer feedback. For accounting and taxation specialists, this simplifies their work as CRM systems seamlessly integrate with accounting systems, providing real-time information.

The accountant’s role becomes more prominent in providing information support for management. In the context of enterprise digitalization, the first component to undergo changes is information, as it represents the primary resource and product of the information system. If all necessary data regarding the enterprise’s activities and its environment are stored in electronic format, modern software can facilitate the analysis of financial and non-financial reports. This comprehensive assessment of the enterprise’s effectiveness, considering its economic, environmental, and social consequences, will occur more quickly and in greater alignment with user requests and tasks. As a result, new possibilities arise for enhancing the analytical aspect of a professional accountant’s work and its functional content [1, p. 70].

Thus, digitalization in economic spheres leads to changes in the functional responsibilities of accounting and taxation employees.

As evidence of changes in the functional responsibilities of accounting and taxation employees due to digitalization, new forms of work organization have emerged, including remote and telecommuting.

Telecommuting, as per Article 60-1 of the Labor Code of Ukraine [6], is a mode of labor organization where employees perform their work outside the employer’s production or office premises, typically at their residence or other chosen locations, utilizing a designated workspace and the necessary technical resources (including production and non-production assets, tools, equipment, and supplies) for the production of goods, provision of services, execution of tasks, or functions specified in organizational documents.

Remote work, as defined in Article 60-2 of the Labor Code of Ukraine [6], is a mode of labor organization where employees carry out their work outside the employer’s premises or territory, at a location of their choosing, using information and communication technologies.

The emergence of these forms of labor organization was driven by the increasing significance of modern IT technologies in practical terms. Labor legislation initially did not account for this transformation, but in the context of COVID-19 epidemiological restrictions, a clear vision and understanding of the direction of labor organization in Ukraine have become apparent.

A summary and comparison of these forms of labor organization are presented in Table 1. The implementation of such organizational methods offers advantages for both employees and employers. In the context of employee labor organization within the accounting and taxation sphere, it is crucial to prioritize primary accounting and the organization of electronic document management (EDM). The document serves as the



foundation for accounting work and the generation of accounting information, essential for both management and taxation. Utilizing electronic document management (EDM) for the flow of primary documents enables a more efficient implementation of the modern labor organization methods mentioned earlier.

The most notable and dynamic EDO services in practice include „Vchasno”, electronic document circulation by CB „PrivatBank”, Paperless, Star.Docs from PJSC „Kyivstar”, and others.

**Table 1. Home and remote work: what is the difference?**

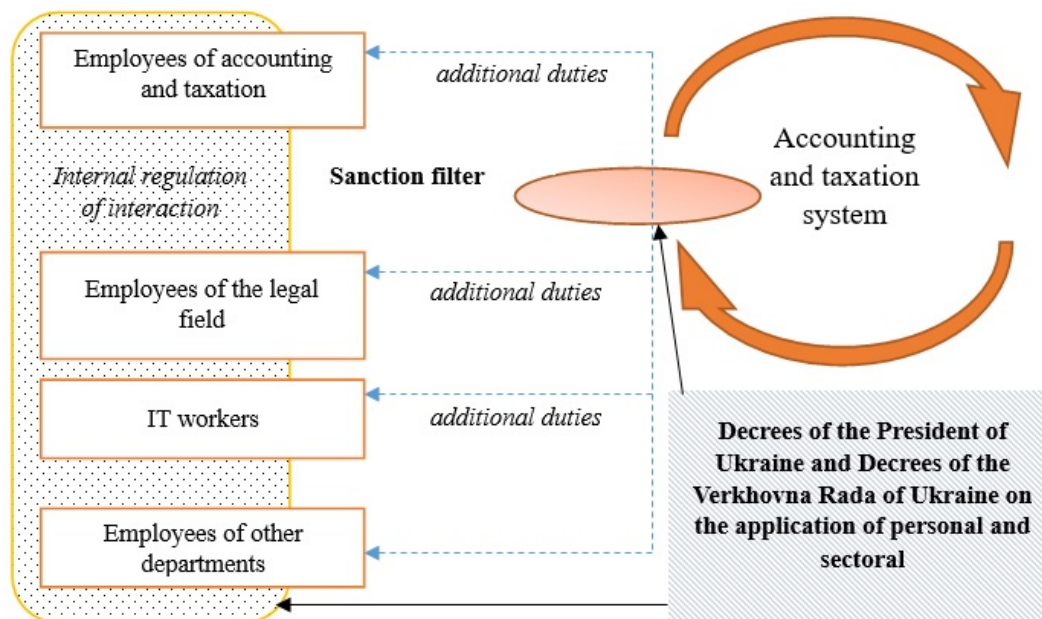
	<b>Homework</b>	<b>Remote work</b>
What it is?	A mode of work organization where employees work from their place of residence or other locations outside the employer's premises, equipped with a designated workspace and necessary technical resources for production, service provision, and other tasks.	A mode of work organization where employees work from any location outside the employer's premises or territory, utilizing information and communication technologies.
What is regulated?	Code of Labor Laws, Article 60-1 of the Labor Code	Code of Labor Laws, Article 60-2 of the Labor Code
Workplace	Fixed Change - after agreement with the employer	Fixed Change - after agreement with the employer At the employee's choice, it can be changed without informing the employer. It can be combined with work on the territory or in the premises of the employer
Working hours	According to the general mode of operation of the enterprise within the norm (up to 60 hours per week)	At the discretion of the employee within the norm (up to 60 hours per week)
Special requirements for the employee	Availability of practical skills to perform the work or the opportunity to acquire such skills	There is none
Working conditions	The employer ensures safe and harmless working conditions	The employee independently ensures safe and harmless working conditions. The employer is responsible for the safety and proper technical condition of the equipment and means of production handed over to the employee. Important! In the presence of harmful and dangerous production factors, remote work is prohibited
Training on labor protection and fire safety	It is carried out by the employer in full	The employer conducts it using equipment and tools recommended or provided by the employee.
Material and technical support	The employer provides means of production, materials and tools necessary for work, or compensates the employee for the use of tools belonging to him	The employer provides equipment, software and technical means, information protection means and other means or compensates the employee for the use of his own or leased means

It is important to positively acknowledge labor organization methods based on modern IT solutions, as they enhance workforce mobility and motivation. Amid the full-scale invasion of Ukraine, these methods

enabled the preservation of jobs for internally displaced individuals and facilitated business operations, albeit under challenging military circumstances and certain limitations. Furthermore, the severe consequences of the full-scale invasion have drawn the authorities' focus toward security matters, impacting the realm of accounting and taxation. Notably, we've seen unprecedented sanctions imposed on individuals and legal entities. As a result, all business relationships must now undergo a sanctions screening process, identifying and isolating entities subject to sanctions or at high risk of being sanctioned. This filter is obligatory for enterprises and is applied to their counterparties. Additionally, it should be extended to buyers and customers after their identification.

The increased responsibilities of accounting and taxation employees are illustrated in Figure 3. The sanction filter is designed to verify the presence (or absence) of relevant circumstances against the list of individual and sectoral sanctions outlined in Decrees of the President of Ukraine and Resolutions of the Verkhovna Rada of Ukraine [8].

**Fig. 3. Schematic Representation of the Sanctions Filter's Application in the Accounting and Taxation System.**



Source: own development.

Employees in the accounting and taxation department must adhere to the application stage of the sanctions filter as outlined in internal documents approved by the legal service, IT division, and management personnel of the enterprise. The comprehensive accounting system and its components assess the risk of neglecting the sanctions filter in their operations. Therefore, internal regulations for sanctions policy compliance should be collaboratively established among various organizational units, using a risk-oriented approach. This approach ensures legal compliance and prevents engagement with „toxic” elements.

In this context, the sanctions policy of an enterprise or group of enterprises can be viewed from two perspectives. First, in terms of formal compliance with sanctions imposed by various countries and international organizations or associations. The second perspective concerns actual engagement with „toxic” elements, particularly through the execution or avoidance of specific activities within a defined territory.

The adoption of this approach reflects a high level of social and economic consciousness rooted in humanism, tolerance, and respect. It brings unique benefits to the business that may be challenging to quantify due to their inherent nature. Nevertheless, these advantages undoubtedly impact the business by driving increased revenues in other areas of operation or even in other states in the long run.

In the context of implementing the sanctions filter and its impact on the enterprise's interactions with the external environment, it's advisable to incorporate provisions in the enterprise's agreements and public

transactions that allow for the modification or termination of relationships. Table 2 provides an illustrative example of such supplementary provisions for the application of the sanctions filter.

**Table 2. Proposed Amendments to Contract and Transaction Provisions Related to Sanctions Filter Implementation.**

Circumstance	Proposals for individual items of transactions
Under the conditions of unconditional termination of relations	<p><b><i>Final provisions</i></b>  <i>N. N. In the event that the Party falls under the effect of sectoral or personal sanctions established by the National Security and Defense Council of Ukraine, this agreement shall cease to be valid from the moment of such fallout. All final settlements under this contract must be made within 10 days.</i></p>
Under the conditions of regulated termination of relations	<p><b><i>Final provisions</i></b>  <i>N. N. In the event that the Party falls under the influence of sectoral or personal sanctions established by the National Security and Defense Council of Ukraine, this agreement may be terminated upon notification of one of the Parties sent in the form of an e-mail. All final settlements under this contract must be made within 10 days after termination of the contract.</i></p>
	<p><i>N. N. The parties are obliged to inform about the circumstances known to them of being on the list of persons against whom restrictive measures (sanctions) have been applied by the National Security and Defense Council of Ukraine</i></p>

In the implementation of the sanctions filter, it is crucial to consider computer information processing and information flows. It's advisable to incorporate distinct directories into the accounting information system for screening enterprise counterparts against the list of individuals subject to restrictive measures (sanctions).

Or integrate the accounting information system, CRM, and ERP systems with an external information resource via the corresponding API. This allows for automated checks of individuals and legal entities against the NSDC's list of sanctioned persons.

Hence, employing the sanctions filter in accounting and taxation is a contemporary necessity, leading to an expansion of employees' functional duties. This is a crucial and socially significant aspect of enterprise operations, contributing to intangible benefits.

Using modern information technologies to operate the sanctions filter significantly streamlines employees' work and minimizes the detection risk circumstances to which restrictive measures (sanctions) apply in enterprise activities. This reinforces the enterprise management's commitment to legal compliance as a fundamental premise of the company's operations.

## Conclusions

After analyzing current trends in the digitalization of professional accounting and taxation activities in enterprises, we observe the emergence of a robust IT toolset and its effective use, elevating enterprise activities to a higher quality level.

Incorporating modern IT solutions is reshaping the roles of employees in accounting and taxation, necessitating the acquisition of digital competencies, which are becoming a cutting-edge aspect of professional practice.

Unquestionably, the global market, impacted by the COVID-19 pandemic and the unprecedented armed aggression against Ukraine – marking a defining moment in the modern digitalization of the accounting and taxation system. There's no turning back to outdated tools developed by entities and individuals subject to economic restrictions and sanctions. The diverse range of IT products being created, implemented, and managed demonstrate their effectiveness and contribute to the speed and efficiency of information dissemination, heralding a new era of domestic economic digitalization. Undoubtedly, this is a positive development.



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