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## ASSESSMENT OF THE USE OF CLOUD TECHNOLOGIES IN ACCOUNTING AS AN INNOVATIVE TOOL

**Abstract.** *The purpose* of the work is to determine the main levers for the application of cloud technologies in accounting as an innovative tool.

**The methodology** used in the work consists of identifying effective means of automatic data collection and tax reporting, as well as uploading bank statements in the required format. It has been established that developers of so-called digital asset technologies and software products require constant training and some testing of all service organization processes.

**The scientific novelty** of the work lies in identifying information literacy and effective financial management as key factors in increasing the level of financial stability and independence in the context of the development of the cloud environment.

**Conclusions.** It has been proven that financial awareness and effective financial management are key factors in achieving financial stability and independence, and therefore, with the help of cloud technologies available to us today, creating innovative tools that promote effective financial management is a necessary tool for the effective functioning of an enterprise. The main advantages of using cloud technologies in management accounting are investigated, taking into account the relevance of data protection issues, company efficiency, efficiency and mobility of management decision-making. The requirements for training and advanced training of industry specialists are considered. The peculiarities of the domestic, European and global markets, in particular legislative requirements and accounting standards, are analyzed. The criteria on which the organization of the accounting system in the cloud environment depends are substantiated. The current aspects of the creation and implementation of cryptocurrency as one of the digital assets that occupy a certain place in the formation of modern accounting and auditing, which is considered as one of the possible types of digital currency, which is designed to perform the functions of ensuring optimality and efficiency, are investigated. The main components of the functionality of software products to simplify accounting were analyzed. The functionality of software products, the features of working with different types of organizations, companies, enterprises, their interaction, integration with financial institutions, for effective optimization of data exchange between companies and specialists were studied.

**Key words:** cloud technologies, digitalization, software product, accounting, financial analysis.

**Тамара ФРАНЧУК, Дмитро ТИЩЕНКО, Альона ДЕСЯТКО, Дмитро ГНАТЧЕНКО. ОЦІНКА ЗАСТОСУВАННЯ ХМАРНИХ ТЕХНОЛОГІЙ В БУХГАЛТЕРСЬКОМУ ОБЛІКУ ЯК ІНОВАЦІЙНОГО ІНСТРУМЕНТАРІЮ**

**Анотація.** *Метою* роботи є визначення основних важелів застосування хмарних технологій в бухгалтерському обліку як інноваційного інструментарію.

**Методологія,** використана в роботі, полягає у визначенні ефективних засобів автоматичного збору даних та формування податкової звітності, а також завантаження банківських виписок у потрібному форматі. Встановлено, що розробники так званих технологій цифрових активів та програмних продуктів потребують постійного навчання та певного тестування всіх процесів організації сервісу.

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**Наукова новизна** роботи полягає у визначенні інформаційної обізнаності та ефективного управління фінансами як ключових факторів підвищення рівня фінансової стабільності та незалежності в умовах розвитку хмарного середовища. Обґрунтовано критерії, від яких залежить організація системи бухгалтерського обліку в хмарному середовищі.

**Висновки.** Доведено, що фінансова свідомість та ефективне управління фінансами є ключовими факторами для досягнення фінансової стабільності та незалежності, а отже за допомогою хмарних технологій, доступних нам сьогодні, створення інноваційних інструментів, що сприяють ефективному керуванню фінансами, є необхідним інструментом ефективного функціонування підприємства. Досліджено наслідки застосування хмарних технологій, з урахуванням актуальності питання захисту даних, ефективності роботи компанії, її оперативності та мобільності. Обґрунтовано вимоги до підготовки та підвищення кваліфікації фахівців галузі. Проаналізовано особливості вітчизняного, європейського та світового ринку, зокрема законодавчі вимоги та стандарти бухгалтерського обліку. Встановлено актуальні аспекти створення та впровадження криптовалюти як одного з цифрових активів, які займають певне місце у становленні сучасного обліку та аудиту, яку розглядають як один із можливих видів цифрової валюти, яка покликана виконувати функції забезпечення оптимальності та ефективності. Запропоновано вдосконалення компонентів функціональності програмних продуктів для спрощення бухгалтерського обліку. Обґрунтовано запропонований функціонал програмних продуктів, особливості роботи з різними типами організацій, компаній, підприємств, їх взаємодія, інтеграція з фінансовими установами, для ефективною оптимізації обміну даними між компаніями, фахівцями.

**Ключові слова:** хмарні технології, цифровізація, програмний продукт, бухгалтерський облік, фінансовий аналіз.

**Introduction.** In today's world, where financial awareness and effective financial management are becoming key factors in achieving financial stability and independence, the development of a virtual financial assistant is becoming particularly important. With the help of the technologies available to us today, the creation of innovative tools that contribute to effective financial management has become possible. Based on the research chosen by the authors, its purpose is to analyze and improve the use of cloud technologies for accounting and optimize financial reporting in the process of qualitative modification of cloud services.

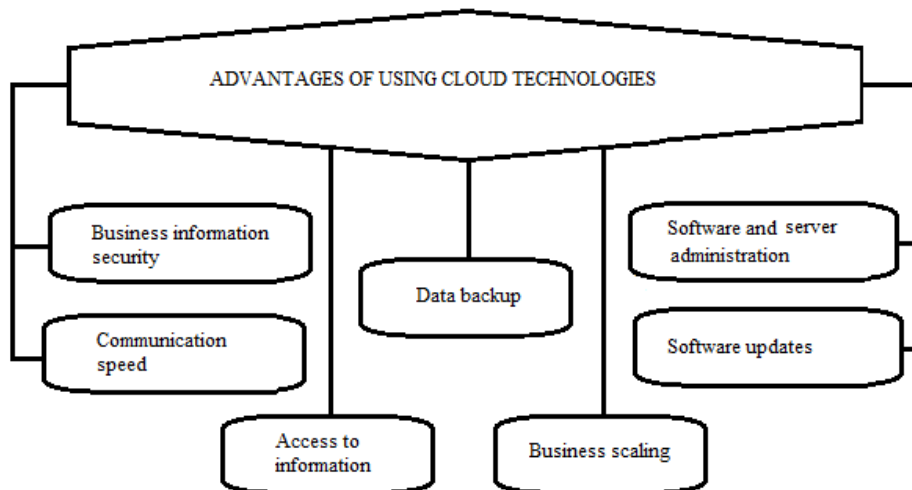
Accounting application solutions require hardware for storing and processing information, while server capacities – computers – are used to host automated management and accounting systems. The server requires special placement conditions – a specially ventilated room, a staff of specialists to service it, etc. Conventionally, servers for business management automation systems can be divided into two groups: local equipment and cloud capabilities. Regarding local equipment, we note that it is computing hardware on which specialized programs are installed to perform computing operations.

The software operates locally and does not require an Internet connection. This is its advantage. Such machines can be: office servers, which can be used for software with low resource requirements; high-power personal computers, which are actually used as servers. Larger businesses with extensive IT infrastructure use large server machines and a staff of specialists to maintain them as computing equipment. Cloud computing is the same servers, super-powerful computer machines. All hardware is maintained by technical specialists and programmers. Such clouds have many advantages for accounting programs, compared to local servers. Like any other software, management, accounting, or other accounting systems can be stored and administered locally or on remote servers – clouds.

**Analysis of recent research and publications.** When studying modern domestic, European and global market features, in particular legislative requirements and accounting standards, it should be noted that the issue of using cloud technologies in accounting is a relevant issue and requires a comprehensive and thorough analysis to study and offer recommendations for optimizing accounting activities, which is reflected in recent publications by researchers. Shish, A. explores cloud technologies in accounting analysis in Ukraine and analyzes the main differences and strategies for adaptation to the local context [4]. Pramuka B., Pinasti M. consider due to the relevance of small business requests and comprehensively explore the main levers that rely on the use of cloud and network accounting systems, which is due to the relevance of small business requests a ways to address them [10]. Berdichevskaya V. considers the main aspects of using cloud technologies in accounting of organizations, examining their areas of application, main advantages, disadvantages, as well as potential problems that arise during their operation [6]. Fahmi M., Muda I., Kesuma S. analyze digitization technologies and the place of the enterprise in the process of introducing its developments into practical actions in the process of using accounting and auditing software products [7]. Ghatrifi M. O. M., Amairi J. S. S., Thottoli M. Investigating international experience in improving accounting education and training during the development of modern cloud technologies [9]. Mykhaylovyna S. O., Matros O. M., Polishchuk O. M. investigate food technologies as an important aspect of the development of the accounting and taxation system [3]. The problems of implementing modern cloud technologies and their widespread application in the field of accounting and analysis of financial activities often fall into the focus of scientific research by modern and foreign scientists, the results of theoretical research and practical achievements are presented by scientists in their works [1, 2, 5, 8, 11, 12].

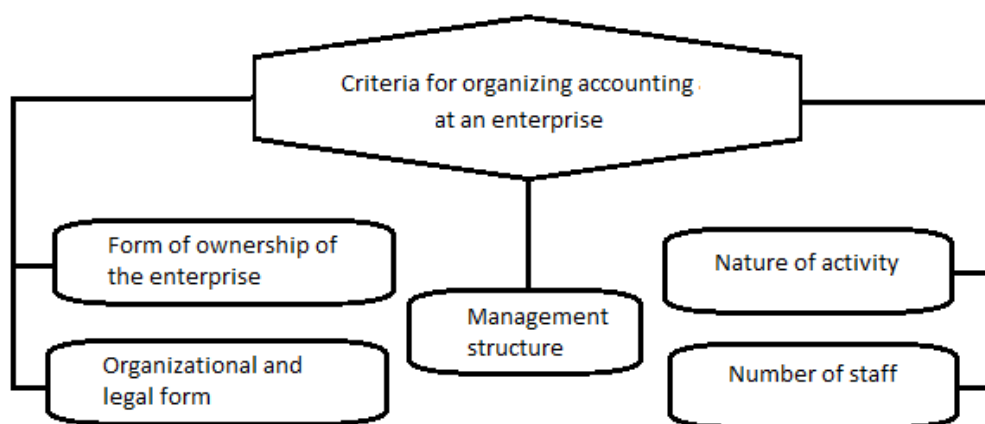
**Main part.** The active development of innovative technologies and other changes that have swept the economy indicate that they are primarily due to the introduction of cloud technologies and the emergence

of digital assets such as cryptocurrencies. Today, researchers argue that cloud technologies are changing the theory and practice of financial reporting and accounting, which cannot be considered outside of the modern digitalization of information and other flows. Information technology specialists develop special software products, taking into account that these are new solutions that can help increase the efficiency of enterprise management, accounting and financial activities using digitalization tools. We can argue that there are a number of advantages of using cloud technologies, the most important of which are presented on (Fig. 1).



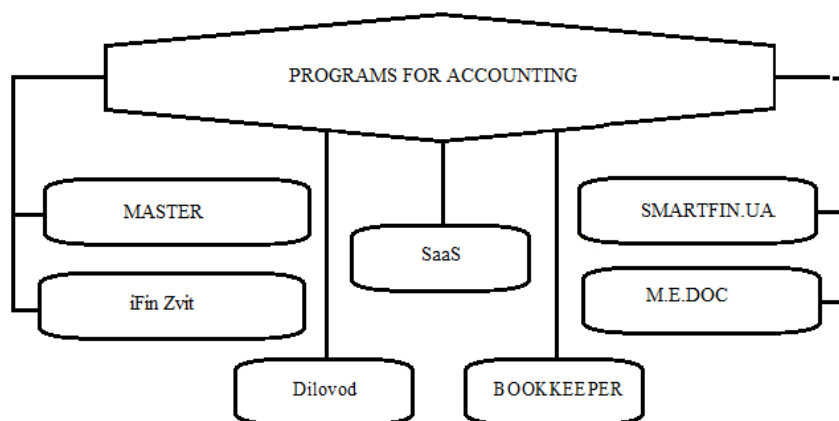
**Fig. 1. Advantages of using cloud technologies**

Accounting is a component without which the activities of any modern enterprise, institution or organization cannot do. The main task of modern accounting, in conditions of rapid changes and innovations, is to provide interested parties of the company with timely, fast and in the shortest possible time, namely: managers, investors, participants, shareholders, and management, the necessary and truthful information to make accurate, balanced, and relevant management decisions. An accountant must possess certain digital skills that relate to information literacy, communication and interaction, security and problem solving. Within the framework of communication and interaction, an accountant must be knowledgeable in modern technologies, be able to use the latest platforms and services, while interacting with information users in compliance with the rules of conduct within the framework of communication of this format. The criteria on which the organization of the accounting system depends are presented on (Fig. 2).



**Fig. 2. The criteria on which the organization of the accounting system**

When it comes to information literacy, an accountant is required to have a significant number of skills that go beyond the skills of the profession, such as: the ability to qualitatively select and filter data among the arrays of information in the digital space, recognize business processes and increase the use of modern information technologies in working with accounting information, etc. Let's analyze a main components of this programs functionality to simplify accounting, which represented on Figure 3 [5].



**Fig. 3. The criteria on which the organization of the accounting system**

Functionality of My Electronic Document (M.E.DOC): universality: suitable for use by entrepreneurs of any type of activity and various tax systems; modular structure: The program has a modular structure that allows you to customize individual functionality depending on the needs of the enterprise. Features include personnel records, payroll calculation, connection of the System of Mandatory and Centralized Accounting and Reporting, registration of excise invoices and transport consignment notes (TCN), as well as a full cycle of work with account books and tax invoices; electronic exchange: simplifies the process of exchanging electronic documents with counterparties and supports online reporting; electronic reporting: allows you to submit reports online to all regulatory authorities. Dilovod functionality: combining accounting and management records, control of turnover, registration of single contribution payers (SCP) and the ability to submit electronic reports – all these features in one program; the ability to keep records of several sole proprietors and legal entities on one database; automatic archiving of copies of documents and display of all monetary circulation in the system; an important bonus – automatic checking for errors in reporting; the ability to submit reports online, if there is Internet access. It can be an attractive alternative for entrepreneurs who are looking for a convenient and functional tool for accounting and reporting without significant efforts to learn accounting skills. Master functionality: accounting: integration with the client bank simplifies financial transactions on accounts. The program also allows you to keep records of sales, purchases, monitor warehouse balances and accurately determine actual production costs. Financial reports are generated automatically, providing the user with up-to-date information; personalized interface: master provides users with the ability to customize the interface according to their needs and preferences, which makes interaction with the program as convenient and effective as possible; allows reporting to regulatory authorities directly through the software interface, providing quick and convenient access to this option. With this approach, the subscription fee becomes more transparent and decreases proportionally to the number of additional functions installed. Using Bookkeeper the company's employees can easily enter primary documents, thereby leaving the accountant with the tasks of checking the correctness of the data and compiling reports. Functionality: work with different types of organizations, for interaction with non-profit organizations, sole proprietors and legal entities; integration with Privat-24, which allows you to speed up the circulation of documents between you, the accountant and your counterparties; operational and tax accounting of sole proprietors, helps to maintain operational accounting and monitor tax obligations of sole proprietors; automatic collection of tax reports, generates tax reports automatically, simplifying your work; downloading bank statements in DBF format.

The functionality of SaaS depends on the selected version, suitable for different types of enterprises: standard version is suitable for small and medium-sized enterprises; corporate version is an assistant for large corporations; industry version contains specialized functionality for niche enterprises. The Debit Plus system functionality: work with wages, tariffs, automatic surcharges; generation of certificates and export to the bank; work with material assets, stocks, balances; turnover balance sheets and accounting cards; work with balance sheets and generation of forms, statements, general ledger; work with fixed assets, inventory cards, acts, depreciation accrual; work with cash and banking transactions, registration journal, advance reports, cash orders; does not support electronic reporting. Full functionality of iFin Zvit is available even when using gadgets, smartphones and tablets that can be used remotely. Not need to manually update the program, since iFin Zvit automatically adapts to changes in legislation. Functionality: ability to synchronize with the latest version of 1C, if it is installed on the computer, and transfer data and reports; exchange of tax invoices with clients, their registration in the Unified Register of Tax Invoices and submission of requests; conclusion

of contracts with regulatory authorities, warehouse accounting and payroll calculations; provision of expert consultations in cases of unclear situations; the ability to send reports to the Treasury, Pension Fund and Tax Inspectorate. Smartfin.ua allows not only professionals, but also entrepreneurs without special specialists to keep accounting records independently. Smartfin.ua functionality includes: work time accounting; reporting; control over settlements and cash transactions; calculation of salaries, bonuses and allowances; accounting for all trade transactions; maintenance of employment contracts and employee cards; the ability to send electronic reports through your personal account [5].

The studied cloud products are usually complex products, not limited to providing the right to use the software, but also including other additional services depending on the selected cloud services, including ensuring reliable isolation of the resource pool provided to the client from the resource pools of other clients and system technology stack using server and network virtualization tools, confidentiality and protection of customer data, ensuring the continuous functioning of relevant services. Analyzing the ways and prospects for the development of accounting and certification, it should be noted that the convergence of cloud technologies and digital assets means changing the ways of optimizing accounting and conducting financial activities. WThis procedure includes identifying and analyzing all controls, determining which controls should be implemented, and identifying gaps that need to be remedied. During testing, specialists verify and confirm changes in control areas and identify them through walkthroughs, observations, and evidence checks. At the end of testing and other activities, an analysis is performed and necessary recommendations are introduced to improve the efficiency of the system. In fact, clouds are suitable for all participants in business processes, in particular for financial services – optimization and savings on the purchase and maintenance of equipment, salaries for a full-time specialist or an outsourced programmer. The advantages of using cloud services for accounting automation are obvious.

**Conclusions.** Ukraine's active integration into the European and global economic space contributes to continuous changes and improvements in the system of accounting standards and financial reporting. This is due to both changes in the economy and the fact that the domestic accounting system is systematically combined with international financial reporting standards (IFRS). The IFRS system itself is also constantly being improved, which necessitates the constant adaptation of the national accounting standards system to updated international standards. Under such conditions, the use of software products for accounting control and financial reporting generation aims to ensure high-quality and proper interaction between programming specialists and accounting specialists when developing software products. Server duplication and backup technology allows the user not to worry about the reliability of information, so any data can be restored quite quickly. Access to the accounting program is via remote desktop or via a Web browser. There is no need to download the configuration to your computer or use office facilities. The only condition for a quick response from cloud software is the speed of the Internet connection. In the local version, access to the system is possible only if the host computer is working. The convenience of using cloud technologies is that the capacity can be scaled by increasing the space on the server as needed, or vice versa, reducing it. Permission to the information base can be restricted in a matter of minutes, while this is not easy to implement with local capacities. Quite often, it is information data security that is the condition that restrains small business owners from migrating to the cloud, which requires additional attention from researchers.

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