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MODERN PRINCIPLES OF ACCOUNTING, MANAGEMENT AND MARKETING ORGANIZATION IN THE CLOUD ENVIRONMENT

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СУЧАСНІ ЗАСАДИ ОРГАНІЗАЦІЇ ОБЛІКУ, МЕНЕДЖМЕНТУ ТА МАРКЕТИНГУ У ХМАРАХ

In the current context of rapid development in information technology, there is a fundamental transformation in approaches to organizing accounting, management, and marketing across enterprises in various industries. Cloud computing occupies a special place among modern technological solutions. This article aims to identify and systematize contemporary principles for organizing accounting, management, and marketing in a cloud environment. The results of the study show that the contemporary principles of organizing accounting, management, and marketing in a cloud environment directly depend on the chosen type of cloud service-public, private, or hybrid-which provides enterprises with the necessary flexibility to adapt management processes to dynamic business conditions. The study confirmed that the general principles of organizing accounting in a cloud environment include: automation of accounting processes; 24/7 accessibility; reduction of IT infrastructure costs; integration with other business systems; increased accuracy and reduced errors; secure data storage; and scalability flexibility. In addition to these principles, one of the most valuable advantages is that most cloud-based accounting platforms are automatically updated to reflect changes in tax or accounting legislation. The study

confirmed that the general principles of organizing management in a cloud environment include: prompt decision-making; centralized access to information; scalability of management decisions; flexibility of organizational structure; integration with other systems; and reduction of IT infrastructure costs. In addition to these principles, one of the most valuable aspects is that all actions and changes are recorded in the system, ensuring control and accountability. The study confirmed that the general principles of organizing marketing in a cloud environment include: automation of marketing campaigns; personalization of customer interactions; integration of multichannel marketing (omnichannel); real-time analytics; high adaptability, and team collaboration. In addition to these principles, one of the most valuable aspects is the continuous access to market data. The prospects for further research lie in an in-depth study of the integration of cloud services with modern artificial intelligence technologies, and an analysis of their impact on the efficiency of accounting, management, and marketing in digital business transformation.

В умовах стрімкого розвитку інформаційних технологій відбувається суттєва трансформація підходів до організації обліку, менеджменту та маркетингу в підприємствах різних галузей. Особливе місце серед сучасних технологічних рішень займають хмарні обчислення. Метою статті є ідентифікація та систематизація сучасних принципів організації обліку, менеджменту та маркетингу у хмарному середовищі. За результатами дослідження встановлено, що сучасні засади організації обліку, менеджменту та маркетингу у хмарному середовищі безпосередньо залежать від обраного типу хмарного сервісу — публічного, приватного чи гібридного. Це забезпечує підприємствам необхідну гнучкість для адаптації управлінських процесів до динамічних умов господарювання.

Дослідження підтвердило, що серед основних засад організації обліку у хмарному середовищі є: автоматизація облікових процесів; доступність у режимі 24/7; зниження витрат на ІТ-інфраструктуру; інтеграція з іншими бізнес-системами; підвищення точності та зменшення кількості помилок; захищене зберігання даних; а також гнучкість у масштабуванні. Окрім зазначених засад, особливо цінним є те, що більшість хмарних облікових платформ автоматично оновлюються відповідно до змін у податковому та бухгалтерському законодавстві.

Дослідження підтвердило, що серед загальних засад організації менеджменту у хмарному середовищі виділяються такі: оперативність прийняття рішень; централізований доступ до інформації; масштабованість управлінських рішень; гнучкість організаційної структури; інтеграція з іншими системами; зниження витрат на ІТ-інфраструктуру. Окрім цих засад, особливо цінним є те, що всі дії та зміни фіксуються в системі, що забезпечує контроль і підзвітність.

Дослідження підтвердило, що серед загальних засад організації менеджменту у хмарному середовищі: автоматизація маркетингових кампаній; персоналізація взаємодії з клієнтами; інтеграція багатоканального маркетингу (омніканальність); аналітика в реальному часі; висока адаптивність; ефективна командна співпраця. Окрім цих принципів, найбільш цінним є безперервний доступ до ринкових даних.

Перспективи подальших досліджень полягають у поглибленому вивченні інтеграції хмарних сервісів із сучасними технологіями штучного інтелекту та аналізу їх впливу на ефективність обліку, менеджменту та маркетингу в умовах цифрової трансформації бізнесу.

Key words: access to information; scalability; management decisions; organizational structure flexibility; data processing; IT infrastructure; automation of marketing campaigns.

Ключові слова: доступ до інформації; масштабованість; управлінські рішення; гнучкість організаційної структури; обробка даних; ІТ-інфраструктура; автоматизація маркетингових кампаній.

PROBLEM STATEMENT

In the current context of rapid development in information technology, there is a fundamental transformation in the approaches to organizing accounting, management, and marketing in enterprises across various industries. Cloud computing holds a special place among modern technological solutions, providing flexibility, scalability, and real-time accessibility of business processes.

Cloud computing enables enterprises to adapt to changes, efficiently utilize IT resources without significant capital investments in their infrastructure, and provide access to up-to-date data and services from any location and device. Thanks to this, they contribute to the optimization of managerial business processes, increase the

speed of decision-making, and reduce risks associated with the storage and processing of information. Moreover, cloud services are often equipped with automation and analytics tools, which is especially important for accounting, management, and marketing, where the speed and accuracy of data processing are critical success factors.

ANALYSIS OF RESEARCH AND PUBLICATIONS

The issue of implementing cloud technologies in the organization of various types of business processes is being studied by both domestic and foreign economists. At the same time, it is a subject of active discussion among practitioner specialists—users—as well as experts in

Table 1. Specifics of accounting organization in different types of cloud services

Types of cloud services	General specifics of accounting organization	Features of accounting organization	Application features
Public cloud	Accounting organization in this environment is based on standardized cloud accounting platforms that provide automated processing and integration with other business systems.	Due to the use of shared infrastructure with other users, there are increased requirements for protecting confidential information and regulatory compliance. Therefore, public clouds often implement additional data encryption, multi-level authentication, and regular security audits.	Particularly useful for enterprises with a large volume of transactions and fluctuating data volumes.
Private cloud	Accounting is organized with a strong emphasis on security, control, and compliance with internal corporate policies and industry standards.	Enterprises can customize accounting systems to fit their unique business processes, implement tailored modules, and integrate them with internal systems such as ERP and CRM. Automation here ensures high accuracy and flexibility, allowing for prompt responses to changes in legislation and market conditions.	Particularly beneficial for enterprises with high data security requirements, the need for customization of accounting processes, and rapid adaptation to changes in legislation and the market environment.
Hybrid cloud	Accounting is organized by combining the advantages of public and private clouds, allowing data processing to be distributed based on its confidentiality and priority.	Enterprises can enhance accounting efficiency by balancing security, scalability, and cost. Management of accounting processes in a hybrid cloud often involves complex integration solutions that ensure continuity and synchronization of data across different environments.	Especially valuable for enterprises that need to maintain a high level of security for critical data while simultaneously optimizing costs and ensuring flexibility and scalability of business processes.

Source: compiled based on [1–2; 6].

information technology and business management. The theoretical discourse primarily focuses on the transformation of accounting, management, and marketing processes in the cloud environment, as reflected in the works of researchers such as O.I. Volokh, L.B. Hnatyshyn, L.S. Dranus, O.S. Prokopyshyn, N.V. Trushkina, C. Hewitt, and others. Meanwhile, practical interest is concentrated on the implementation of contemporary principles for organizing accounting, management, and marketing, which manifest in the operation of cloud solutions, ensuring security, guaranteeing confidentiality, and preserving data integrity.

FORMULATION OF THE ARTICLE'S OBJECTIVES

This article aims to identify and systematize contemporary principles for organizing accounting, management, and marketing in a cloud environment.

THE PAPER MAIN BODY

Within the scope of the research, the authors draw attention to the fact that cloud technologies (or "the cloud") are models for the remote delivery/use of computing resources, software, data storage, and other information products on demand by the user. Previously,

we emphasized that migrating to the cloud creates specific principles for organizing accounting, management, and marketing [2].

This occurs through the use of different types of cloud services, among which are:

- Public cloud, where resources are provided by a third-party provider and are available to a wide range of users (for example, Amazon Web Services, Microsoft Azure).

- A private cloud, where resources are used exclusively by a single organization, provides a higher level of security and control.

- A hybrid cloud combines the advantages of both public and private clouds, allowing flexible distribution of workloads and data depending on business needs..

The advantage of the cloud in organizing fundamental managerial business processes is the ability to access the necessary resources without the need for investment in physical infrastructure, which ensures high flexibility, scalability, and mobility of business processes [2].

In particular, in accounting, the use of cloud systems significantly enhances the accuracy and speed of financial data processing, ensures secure storage, and provides prompt access from anywhere in the world. The specifics of organizing accounting within different types of

cloud services are presented in Table 1.

Noted that public clouds use standardized software with modern encryption protocols, backup systems, multi-level authentication, and access control, as well as automated data processing through shared infrastructure with other users. These tools provide the foundation for organizing accounting in a cloud environment based on principles such as [1; 6]:

- Automation of accounting processes (referring to the use of cloud accounting platforms that automatically generate reports, perform transactions, and process primary documents);

- 24/7 accessibility (accounting is accessible from any device and location, which is especially important for remote work and multi-branch organizations);

- Reduction of IT infrastructure costs (eliminating the need for own servers, software updates, and maintaining a large technical staff);

- Integration with other business systems (cloud accounting solutions easily connect with CRM, ERP, payment systems, banking services, and electronic document management systems);

- Increased accuracy and error reduction (thanks to automated checks, limiting human intervention, and the use of templates and regulations);

— Scalability flexibility to match growing transaction volumes or the emergence of new business areas;

— Collaboration capabilities (accountants, auditors, management, and external consultants can work simultaneously in the same system, enhancing interaction efficiency).

In addition to the principles mentioned above, one of the most valuable advantages is that most cloud accounting platforms are automatically updated in accordance with changes in tax or accounting legislation.

In private clouds, accounting focuses on: security, control, and compliance with corporate policies; systems can be tailored to unique business processes and integrated with ERP and CRM; automation ensures flexibility and rapid response to changes.

Hybrid clouds combine the advantages of public and private clouds, allowing data processing to be distributed according to confidentiality levels and enhancing efficiency by balancing security, scalability, and cost.

In management, the use of cloud systems enables prompt decision-making based on up-to-date data, ensures transparency of business processes, facilitates team collaboration regardless of participants' geographic locations, and supports flexible resource management and real-time scaling of enterprise operations. The specifics of management organization across different types of cloud services are presented in Table 2.

It should be noted that public clouds utilize a wide range of ready-made cloud management solutions, such as project management systems (e.g., Trello, Asana, Monday.com), corporate messengers (Slack, Microsoft Teams), and business analytics platforms (Google Data Studio, Power BI Online) [1–2]. These tools provide capabilities for organizing management in a cloud environment based on the following principles [2; 5]:

— Prompt decision-making (as managers have real-time access to data);

— Centralized access to information (all users can work with a single database and documents regardless of location);

— Scalability of management solutions (the cloud infrastructure easily adapts to organizational growth or expansion of functional needs);

— Flexibility of organizational structure (enabling quick changes to management structure, adding or removing users, configuring roles and access);

— Integration with other systems;

— Reduction of IT infrastructure costs (cloud systems easily integrate with ERP, CRM, BI, document management systems, etc.).

In addition to these principles, one of the most valuable aspects is that all actions and changes are recorded in the system, ensuring control and accountability.

Table 2. Specifics of management organization in different types of cloud services

Types of cloud services	General specifics of management organization	Features of management organization	Application features
Public cloud	Based on the use of standard cloud tools for project management, resource allocation, and analytics.	Rapid deployment of services and easy access for all team members; possible limitations in functionality and the need for data protection.	Suitable for startups, small and medium-sized companies with limited IT budgets
Private cloud	Applied to manage strategic and confidential processes, taking into account internal policies and high security standards.	Ability for deep customization according to internal management procedures; high level of access control and analytics	Optimal for large enterprises and organizations with strict security requirements.
Hybrid cloud	Ensures a balance between the openness of public tools and the security of private solutions in management.	Flexible allocation of management functions based on their level of criticality; complex integration schemes between environments.	Effective for multinational companies and enterprises with complex organizational structures.

Source: compiled based on [1; 5].

In marketing, the use of cloud systems enables efficient collection, storage, and analysis of large volumes of consumer data, automation of marketing campaigns, audience segmentation, personalization of communications, and integration across various promotion channels. The specifics of marketing organization in different types of cloud services are presented in Table 3.

It should be noted that thanks to cloud solutions, marketing teams gain access to modern analytics tools, CRM systems, and platforms for email and SMM marketing in real time, which facilitates faster decision-making and increases the effectiveness of marketing activities. These tools

Table 3. Specifics of marketing organization in different types of cloud services

Types of cloud services	General specifics of marketing organization	Features of marketing organization	Application features
Public cloud	Use of cloud platforms for email marketing, CRM, analytics, and social media.	Rapid deployment of marketing tools, access from any device, limited control over data confidentiality.	Suitable for small and medium-sized companies aiming to scale their online marketing.
Private cloud	Implementation of personalized marketing systems with a high level of data control.	Ability to integrate with internal business analytics systems, precise personalization of customer data, high level of security.	Advisable for companies handling sensitive customer information (e.g., banking sector).
Hybrid cloud	Combination of open customer interaction channels and secure tools for handling strategic data.	Flexible choice of environment for running different campaign stages; possibility to store private data in a secure infrastructure.	Optimal for companies with large customer bases and a multichannel marketing strategy.

Source: compiled based on [2–4].

provide opportunities for organizing marketing in a cloud environment based on the following principles [2—4]:

- Automation of marketing campaigns (using cloud platforms for planning, launching, and monitoring campaigns);
- Personalization of customer interactions (since cloud-based CRM systems allow maintaining contact history, tracking user behavior, and creating individualized offers);
- Integration of multichannel marketing (connecting all communication channels: email, social networks, websites, mobile apps — into a unified system);
- Real-time analytics (instant access to campaign statistics, consumer behavior, and conversions, enabling prompt adjustments);
- High adaptability (cloud tools can be quickly configured for new products, markets, or target audiences);
- Team collaboration (joint work of marketers in cloud environments facilitates communication and reduces time costs).

In addition to these principles, it is especially valuable that continuous access to market data is ensured, as cloud services allow connection to databases, news aggregators, trends, and more.

CONCLUSIONS

Based on the results of the study, it's illustrated that the modern principles of organizing accounting, management, and marketing in a cloud environment are formed according to the chosen type of cloud service — public, private, or hybrid — since the variability of this domain allows enterprises to adapt these management processes to the current business requirements.

The study confirmed that among the general principles of organizing accounting in a cloud environment are: automation of accounting processes; 24/7 availability; reduction of IT infrastructure costs; integration with other business systems; increased accuracy and reduction of errors; secure data storage; and flexibility in scaling. In addition to these principles, the most valuable aspect is that most cloud accounting platforms automatically update with changes in tax or accounting legislation.

The study confirmed that among the general principles of organizing management in a cloud environment are: rapid decision-making; centralized access to information; scalability of management solutions; flexibility of organizational structure; integration with other systems; and reduction of IT infrastructure costs. In addition to these principles, the most valuable aspect is that all actions and changes are recorded in the system, ensuring control and accountability.

The study confirmed that among the general principles of organizing marketing management in a cloud environment are: automation of marketing campaigns; personalization of customer interactions; integration of multichannel marketing (omnichannel); real-time analytics; high adaptability; and team collaboration. In addition to these principles, the most valuable aspect is the continuous access to market data.

The future research opportunities focus on studying how cloud services integrate with modern artificial intelligence technologies and analyzing their effects on the efficiency of accounting, management, and marketing within digital business transformation.

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