# THE ROLE OF CLOUD PLATFORMS IN THE TRANSFORMATION OF BUSINESS FUNCTIONS IN ENTERPRISES

## ULOGA CLOUD PLATFORMI U TRANSFORMACIJI POSLOVNIH FUNKCIJA U PREDUZEĆIMA

*Aleksandra Zečević*[*]
*Danilo Đurđić*[**]

**Apstrakt**: *Cloud platforme su postale ključni faktor u transformaciji poslovanja u savremenom digitalnom okruženju. One omogućavaju preduzeću da rekonstruiše svoje poslovne procese radi boljeg strukturiranja kroz automatizaciju, skalabilnost i optimizaciju troškova. Ovaj rad razmatra različite funkcije cloud platformi u poboljšanju poslovnih funkcija finansija, upravljanja ljudskim resursima, marketinga i lanca snabdevanja sa njihovim prednostima i izazovima. Modeli usluga u cloud-u – IaaS, PaaS i SaaS – mogu da skaliraju resurse u skladu sa potrebama koje proizilaze iz njihovog poslovanja, dok se donošenje odluka oslanja na napredne tehnologije kao što su veštačka inteligencija i analitika podataka. Cloud platforme poboljšavaju fleksibilnost, bezbednost i dostupnost podataka. Predviđa se veći značaj primene platformi u budućnosti koja zavisi od multi-cloud strategije u kombinaciji sa tehnologijama veštačke inteligencije koje bi poslovnim operacijama omogućile značajno poboljšanje.*

**KLJUČNE REČI**: *CLOUD PLATFORME, DIGITALNA TRANSFORMACIJA, POSLOVNE FUNKCIJE PREDUZEĆA*

**JEL KLASIFIKACIJA**: *L86, M15, O33*

**Abstract**: *Cloud platforms have become a key factor in the transformation of business in the modern digital environment. They enable the company to reconstruct its business processes for better structuring through automation, scalability and cost optimization. This paper discusses the various functions of cloud platforms in improving the business functions of finance, human resource management, marketing and supply chain with their advantages and challenges Cloud service models - IaaS, PaaS and SaaS - can scale resources according to the needs arising from their business, while decision-making relies on advanced technologies such as artificial intelligence and data analytics. Cloud platforms improve flexibility, security and availability of data. A greater importance of the application of platforms in the future is predicted, which depends on a multi-cloud strategy combined with AI technologies that would enable business operations to significantly improve.*

**KEYWORDS**: *CLOUD PLATFORMS, DIGITAL TRANSFORMATION, BUSINESS FUNCTIONS OF THE COMPANY*

**JEL CLASSIFICATION**: *L86, M15, O33*

## 1. INTRODUCTION

Cloud computing has a strong impact on an enterprise's market position. The cloud system itself can improve productivity, flexibility and business continuity to make operations much easier. However, the effect of using such technologies varies. Even the effect differs from the chosen cloud platform. Large cloud systems, such as Google Cloud Platform, Amazon Web Services (AWS), Microsoft Azure, and IBM Cloud, provide the necessary space to

* Ekonomski fakultet - Univerzitet u Beogradu. E-mail: aleksandra.zecevic@ekof.bg.ac.rs.
** Ekonomski fakultet - Univerzitet u Beogradu. E-mail: danilo.djurdjic@ekof.bg.ac.rs.

store, organize, and analyze vast amounts of data an enterprise has access to. Exponential growth in the number of devices using the Internet of Things to collect, record and transmit data collected on consumer behavior, operational processes and product performance and logistics has brought the need for comprehensive cloud platforms that can manage such big data. Cloud platforms are a way for businesses to significantly optimize operations and reduce costs. Traditional infrastructure requires huge investment in components such as hardware and other physical resources. On the other hand, cloud platforms offer scalability which simply means using customized services for different operations. It means adapting to changing market conditions, thereby achieving greater efficiency in the use of resources. Such platforms allow companies to be more open to new applications and services, thereby reducing the time for innovation. In addition to savings, cloud platforms create opportunities for data management and real-time analysis. This can be a key company resource, especially at a time when data has actually become of key value in making business decisions. Advanced analytics, artificial intelligence and process automation driven by cloud technologies are of great help in improving business, personalizing customer service and predicting future trends. Technological transformation allows the company to be much more agile and efficient, and therefore better armed against the competitive market. The purpose of this paper is to analyze the role of main components and types of cloud platforms in modern business and the advantages and disadvantages of such systems. This paper considers how different services affect the use of cloud platforms, with a special focus on advanced analytics and artificial intelligence.

## 2. BASIC CONCEPTS OF CLOUD PLATFORMS

The United States National Institute of Standards and Technology defined cloud technology as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction"[1]. It can be concluded that the concept of cloud computing is a paradigmatic shift from the traditional, on-premise resource use to a virtual computing environment[2]. The same source lists the following five key aspects of cloud technology:

1. Broad network access
Cloud platforms can be accessed through various devices such as mobile phones, tablets, laptops and desktop computers. This gives users easier access to all resources. This approach allows for a significant increase in productivity, as well as collaboration between teams. Timely decision-making is ensured, as well as business continuity based on current information.

2. On-demand self-service
All saved data is available to cloud service users. This covers both server time and available storage space. The service can be used without any interaction with the service provider. Cloud platforms automatically manage resources and maintain infrastructure. This allows users to fully focus on the company's strategic and operational goals.

1 Mell (2011), p. 2

2 Ogbole et al. (2021), p. 142

3. Resource pooling
The service provider consolidates all its resources in order to make them available to a larger number of users. Resources are distributed according to service users' requirements and expectations. This enables flexible capacity adjustment to all user needs.

4. Rapid elasticity
The user should have the impression of unlimited resources. The system must have the ability to automatically scale the provided service depending on changes in demand. To make this possible, the system must be capable of automatically scaling all provided services. During periods of high demand, resources are automatically scaled up to meet increased user demands. When demand is low, resources are reduced and thus usage costs are reduced.

5. Measured service
The system automatically controls and optimizes the use of resources depending on the type of service provided. The resources used can be quantified, thus providing transparency, both for the provider and for the service users. This transparency allows users to have insight into all their costs, as well as the volume of resources used. This enables efficient provision of services depending on real user needs.

The focus of cloud technology development is agility in business operations. Cloud computing provides easy and inexpensive access to a large number of tools and services, such as data storage, processing and analysis. Many platforms also provide the ability to work with databases, machine learning, artificial intelligence, running virtual machines. Users do not need to worry about how much space they will rent because cloud services provide the possibility of automatic scaling of the rented resources. Also, it is important to point out potentially large savings because companies do not have to invest in large and demanding data storage centers and supporting infrastructure.

Depending on the user's needs, there are 3 basic models:

1. IaaS (Infrastructure as a service)
Users are allowed to process, store and save data with the help of provided computer resources. This model provides users with access to core IT infrastructure, such as virtual servers, network resources and storage capacity, without the need to invest in physical hardware. It is envisaged that the user has absolute freedom to choose the type and scope of the desired software, so there is no concern about whether the system will be adequate to the needs of the business.

2. PaaS (Platform as a service)
This model gives users access to a complete development environment with all the necessary tools for creating and implementing applications. Instead of dealing with the management of the basic infrastructure, users can focus on the development process itself with the support of programming languages, databases, server resources and auxiliary tools that facilitate the work. This model provides flexibility in application development, while the cloud provider takes responsibility for infrastructure maintenance, thus reducing technical barriers for users. Although different

PaaS models offer similar benefits, researchers conclude that there is no perfect PaaS model, as different models complement each other in terms of efficiency, cost and performance[3].

3. SaaS (Software as a service)
This model involves providing software as a service on demand, where applications are accessed through an interface, such as a web browser or API. The user has the least degree of flexibility compared to other cloud models, as he or she has no control over the underlying infrastructure, operating system or network. The user is only allowed to control specific software functions, such as user account settings or interface customization. This model is widespread, especially in messaging applications, management of databases, human resources and customer relations, because it allows quick and easy access to the software without the need for installation and maintenance.

It is important to define the types of cloud implementation, which determine the way resources are distributed and used within the business environment. Different implementation models allow organizations to choose the approach that best suits their specific needs, be it security, data privacy, or cost efficiency. Each type of implementation has its own advantages and challenges, and the right choice can significantly affect the company's operational efficiency and IT infrastructure.

Private cloud enables services exclusively for one organization, providing full control over data and infrastructure. This model is often the choice of organizations that want high security and privacy, because it allows them to manage cloud resources without relying on external providers. However, private cloud requires significant investments in equipment, physical space and maintenance. Cloud communities, on the other hand, are intended for groups of organizations with common goals, who share infrastructure and resources, thereby reducing costs, but maintaining a certain level of control and security.

Public cloud is an infrastructure model intended for wide public use, where users lease resources from providers. This model is the most affordable, but brings potential risks related to data security, which is why it is necessary for providers to ensure high standards of protection. Hybrid cloud combines private and public clouds, allowing organizations to keep sensitive data in the private cloud, while less critical resources can be moved to the public cloud, thus optimizing costs and flexibility.

Apart from the basic types, there are also advanced forms of cloud implementations. Multicloud allows organizations to use multiple different cloud providers to reduce dependency on a single provider, while distributed cloud separates resources across different geographic locations to reduce risk and increase efficiency. For specific needs, there is the HPC (High-Performance Computing) cloud, which is based on high-performance computing and is used for demanding analyses and applications that require a lot of computing power. These models provide additional flexibility and scalability depending on specific business requirements.

3 Ogbole et al. (2021), p. 143

To sum up, large cloud service providers have a key role in the development and application of cloud technologies, as they provide the infrastructure, tools and resources necessary to support various business needs. Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP) and IBM Cloud lead the way on the global market, offering a wide range of services, from basic resources such as storage and data processing, to advanced technologies such as artificial intelligence, machine learning and analytics. These providers enable businesses to tailor their IT systems and resources to specific requirements, whether they opt for a private, public, hybrid or multicloud model.

Each of these providers offers different levels of flexibility, performance and security, which allows organizations to choose the optimal solution for their business. As key players in the industry, they are constantly improving their services to meet increasingly complex market demands, thereby contributing to the digital transformation of businesses worldwide. Understanding the capabilities and advantages offered by these vendors is critical for organizations striving to remain competitive, innovative and efficient in today's business environment.

## 3. ADVANTAGES OF USING THE CLOUD SYSTEM IN BUSINESS

In the future, the successful implementation of cloud computing will be essential for businesses to survive and remain competitive. Cloud systems allow organizations greater speed and agility, as well as the ability to process large amounts of data from various sources, with improved security and reliability. These changes significantly affect business processes, enabling companies to react more quickly to market changes and come up with innovative solutions to meet the needs of their clients. Cloud platforms enable faster development and introduction of new services, thereby increasing the ability of organizations to remain flexible and adaptable in a dynamic market environment.

One of the main advantages of the cloud system is the acceleration of business processes and increased efficiency. Cloud platforms, such as Google Cloud, offer an intuitive development environment that allows developers to access all the necessary services in one place. It eliminates the need to use different external tools, thereby increasing productivity and shortening the delivery time of software solutions. In a business context, this means faster introduction of innovations and reduction of time needed to develop new products or services, which directly contributes to competitiveness. Authors[4] point out that the automation and scalability provided by cloud platforms reduce the complexity of IT operations and enable businesses to focus on business priorities, instead of technical challenges. Reducing the time to deliver software and increasing the number of tasks performed are directly related to the improved infrastructure that cloud platforms enable, which ensures that businesses are more efficient and agile.

Another key advantage of the cloud system is access to services and information in real time[5]**.** Businesses using cloud platforms can quickly access their data from any geographic location and analyze it using advanced analytics tools. This is especially important for indu-

4 Sajid & Raza (2013), p. 39

5 Avram (2014), p. 531

stries that depend on timely information, such as finance, retail and logistics, where instant insight into data enables decisions that directly impact business success. Personalizing the customer experience is another key benefit and allows organizations to better understand their customers' needs and provide products and services tailored to their preferences. Authors[6] point out that advanced analytics and data integration within cloud platforms enable more accurate business decisions, thereby achieving greater operational efficiency and optimization of the supply chain. Finally, cloud platforms contribute to risk reduction through improved security mechanisms, enabling companies to proactively identify and address potential threats to their data and systems.

These advantages make cloud technologies a key tool for long-term business success and sustainability in a modern, technologically dependent world.

## 4. DISADVANTAGES OF THE USE OF CLOUD SYSTEMS IN BUSINESS

Although cloud technologies bring numerous advantages, it is necessary to carefully consider possible challenges before a company makes a decision on their implementation. Cloud systems are not without their drawbacks, and key issues that organizations may face include technical difficulties, security, dependence on internet connectivity, costs, inflexibility and the need for ongoing support. These obstacles can significantly affect business operations and reduce work efficiency if they are not managed adequately.

Technical problems represent a serious risk for business, because the IT infrastructure is mostly under the control of cloud service providers. If problems arise on the supplier's side, the company's operations can be seriously threatened. For example, even though vendors such as Google offer highly reliable services, businesses lose complete control over key IT resources, which can make it difficult to quickly resolve technical issues when they arise. The experience of using a cloud platform can be greatly influenced by technical errors[7].

Security is one of the most common challenges, especially with public cloud systems. Data in public cloud solutions may not be secure enough, as suppliers and third parties can potentially access sensitive information[8]. This poses a significant business risk, as privacy breaches and data loss can have serious legal and reputational consequences. Businesses must implement additional security measures to protect data from unauthorized access and cyber-attacks.

Dependence on internet connection is another key issue for business. A reliable and fast Internet connection is necessary for the functioning of the cloud system. If a network outage occurs, businesses lose access to critical applications and data, which can seriously disrupt business processes. This is why it is important for organizations to develop contingency plans and ensure a stable internet infrastructure.

6 Sajid & Raza (2013), p. 39

7 Hui et al. (2024), p. 8

8 Marston et al. (2011), p. 187

The costs can be higher than it seems at first glance. Although cloud systems often appear to be a more affordable option, businesses must carefully analyze the total cost of implementation, including data migration, application integration, and ongoing system maintenance. In some cases, especially for smaller businesses, local solutions may be more cost-effective.

The inflexibility of cloud systems can also be a challenge for businesses, especially when it comes to migrating data and services to a specific cloud system. Organizations become dependent on service providers, which can make it difficult to switch to another provider if needed. "Organizations must implement a new resource management component so that resources can be automatically acquired and released according to demand"[9]. Changing providers is a complex and expensive process, and it is important to carefully assess the degree of dependence on one provider before making a decision about migration.

Support is a key component for successfully using cloud systems in business. Continuous technical support is necessary to keep the system running smoothly. Businesses must ensure that the cloud service provider offers adequate support, especially at critical times when problems that can disrupt business arise.

In addition to these challenges, there are additional risks, such as the need for consistently high Internet speed, insufficient data privacy in public cloud systems, and the inability to fully recover data in the event of disastrous losses. These challenges must be taken into account so that companies can make informed decisions about moving to cloud systems and successfully manage the risks that can affect their operations.

## 5. THE INFLUENCE OF CLOUD PLATFORMS ON BUSINESS FUNCTIONS

Cloud platforms are significantly transforming various business functions, enabling firms to use advanced digital tools while reducing infrastructure costs and increasing agility. Cloud computing brings flexibility in managing business operations, which enables easier scalability and adaptability to market needs without large initial investments. This flexibility enables the optimization of key business functions, such as finance, human resource management, marketing and supply chain, through automation, analytics and simpler system integration.

One key example is the finance function, where cloud platforms enable firms to improve analytics and reporting. The use of cloud accounting systems enables the automation of monitoring of income and expenses, management of cash flows in real time and reduces errors in keeping business books. For example, companies use platforms such as QuickBooks Online to integrate all financial data in one place, which allows finance teams to quickly generate reports and analyze financial indicators with greater accuracy and speed[10].

Human resource management is another area that cloud technologies have transformed. Platforms such as Workday or BambooHR enable companies to effectively manage recru-

9 Zhao & Zhou (2014), p. 149

10 Hingorani & McNeal (2018), p. 138

itment, training and employee performance processes. These platforms enable HR teams to track employee performance, organize training and automatically update employee data globally, reducing administrative costs and improving the efficiency of the people management process.

In the field of marketing, cloud platforms such as Salesforce enable companies to better manage customer relationships through integrated CRM solutions. These platforms allow sales and marketing teams to access real-time customer data, track interactions with potential customers, and personalize marketing campaigns. This improves the accuracy of campaigns, increases customer engagement and improves sales results.

Using the supply chain as an example, platforms such as SAP Ariba enable companies to improve communication with suppliers, track inventory, and optimize ordering and delivery processes[11]. Cloud solutions reduce the time needed to coordinate different stages in the supply chain, thereby reducing storage costs and improving delivery times, enabling firms to remain competitive in the market.

Data security is also a significant factor that cloud platforms improve through advanced security tools. For example, some authors[12] emphasize that despite security challenges, modern cloud services offer multi-layer data protection, which allows companies to ensure the integrity and privacy of data even when it is located on remote servers.

All these benefits show how cloud platforms are improving various business functions, from finance to supply chain, enabling firms to increase efficiency, reduce costs and adapt to a rapidly changing business environment.

## 6. CONCLUSION

Cloud platforms have revolutionized the way companies perform their day-to-day business, enabling greater efficiency, flexibility and cost reduction. Through applications in finance, human resources management, marketing and supply chain, companies can optimize operations, make faster decisions and use advanced analytical tools to better manage data and resources. Also, the security solutions offered by cloud services reduce the risks related to data security, making the cloud attractive to both small and large companies.

In the future, cloud platforms will become an even more important pillar of business operations, with an emphasis on the application of artificial intelligence (AI) and machine learning that will further automate processes and enable personalized business services in real time. As Internet speeds and storage capacity continue to grow, cloud services will become more available and affordable around the world, enabling faster innovation development. It is also predicted that multicloud strategies, where companies use several different cloud providers, will become the standard, which will further increase organizations' flexibility and resilience to risks.

11 Ogbu et al. (2024), p. 1

12 Sajid & Raza (2013), p. 40

Finally, cloud platforms are a key tool in digital business transformation. It remains clear that their importance and capabilities will continue to grow in the future, bringing new opportunities to improve business processes and increase competitiveness.

## REFERENCES


1. Avram, M. G. (2014). Advantages and challenges of adopting cloud computing from an enterprise perspective. *Procedia Technology*, *12*, 529-534.
2. Hingorani, K. & McNeal, B. (2018). Using QuickBooks® online plus for enhancing learning Of ERP concepts: A case study. Issues in Information Systems, 19(4), 132-139.
3. Hui, S. C., Kwok, M. Y., Kong, E. W., & Chiu, D. K. (2024). Information security and technical issues of cloud storage services: a qualitative study on university students in Hong Kong. Library Hi Tech.
4. Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J., & Ghalsasi, A. (2011). Cloud computing—The business perspective. *Decision support systems*, *51*(1), 176-189.
5. Mell, P. (2011). The NIST Definition of Cloud Computing. *NIST Special Publication*, 800-145.
6. Ogbole, M. O., Ogbole, E., & Olagesin, A. (2021). Cloud systems and applications: A review. *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, *3307*, 142-149.
7. Ogbu, A. D., Ozowe, W., & Ikevuje, A. H. (2024). Solving procurement inefficiencies: Innovative approaches to sap Ariba implementation in oil and gas industry logistics. GSC Advanced Research and Reviews, 20(1), 176-187.
8. Sajid, M., & Raza, Z. (2013). Cloud computing: Issues & challenges. In *International conference on cloud, big data and trust* (Vol. 20, No. 13, pp. 13-15). sn.
9. Zhao, J. F., & Zhou, J. T. (2014). Strategies and methods for cloud migration. *international Journal of Automation and Computing*, *11*(2), 143-152.