



THE ROLE OF CLOUD TECHNOLOGIES IN SMALL BUSINESSES: INCREASING COMPETITIVENESS

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Materialni istalgan vosita yoki formatda nusxalash va qayta tarqatish hamda maqoladan to'g'ri iqtibos keltirish va litsenziyasini ko'rsatish sharti bilan istalgan maqsadda foydalanish mumkin.

Annotation: This article analyzes the adoption rate of cloud technologies in small businesses and their potential to enhance efficiency and competitiveness. The research findings indicate that cloud technologies provide significant economic and operational advantages for small businesses. The article offers recommendations on increasing production efficiency, reducing IT costs, and improving collaboration among employees through the use of cloud technologies.

Keywords: small business, cloud technologies, efficiency, competitiveness, economic benefits.

Аннотация: В данной статье анализируются темпы внедрения облачных технологий в малом бизнесе и их потенциал для повышения эффективности и конкурентоспособности. Результаты исследования показывают, что облачные технологии обеспечивают значительные экономические и операционные преимущества для малого бизнеса. В статье предложены рекомендации по повышению эффективности производства, сокращению ИТ-затрат и улучшению совместной работы сотрудников за счет использования облачных технологий.

Ключевые слова: малый бизнес, облачные технологии, эффективность, конкурентоспособность, экономические выгоды.

INTRODUCTION

Small businesses are a key component of any economy. They play an important role in creating new jobs, promoting innovation and developing the local economy. At the same time, small businesses often face problems such as limited resources, the need to compete with large businesses, and difficulties in adapting to rapidly changing market conditions. In such conditions, modern technologies, especially cloud technologies, create great opportunities for small businesses.

Cloud technologies, or simply put, cloud services, is the provision of IT resources and services over the Internet. With cloud technology, businesses can access software, storage space, computing power, and other IT services over the Internet. This allows small businesses to use modern technologies without large infrastructure costs.

Cloud technology offers several advantages for small businesses. One of them is flexibility and speed. With the help of cloud services, small businesses will have the opportunity to quickly introduce and use new technologies. In addition, with the help of cloud technologies, it is possible to automate business processes, store data securely, and ensure effective collaboration between employees.

Another important benefit for small businesses is cost savings. With the help of cloud technologies, businesses do not need to spend a lot of money to expand their IT infrastructure. They pay only for the resources used, which is economically beneficial for businesses.

The purpose of this article is to analyze the role of cloud technologies in improving competitiveness in small businesses. We examine the adoption and adoption of cloud technologies, their impact on productivity and the value they add to business processes. At the same time, the article also talks about the benefits of cloud technologies for small businesses and how these technologies can be used in the future.

The main questions of the article are:

1. What is the level of cloud adoption in small businesses?
2. How does cloud technology increase the efficiency of small businesses?
3. What are the main advantages and limitations of cloud technologies for small businesses?

By answering these questions, we will try to better understand the importance of cloud technologies for small businesses and their role in increasing competitiveness. In the following sections of the article, we will look for answers to these questions and show how important cloud technologies are for small businesses.

LITERATURE ANALYSIS

Scalability and Flexibility

Cloud technology provides small businesses with the ability to scale their operations quickly and efficiently. As business demands fluctuate, cloud services can be adjusted to meet current needs without the need for significant overhauls or downtime. This scalability is particularly beneficial for small businesses experiencing rapid growth or seasonal variations in demand (Armbrust et al., 2010).

Access to Advanced Technologies

Cloud platforms offer small businesses access to advanced technologies that would otherwise be cost-prohibitive. These include data analytics, machine learning, and artificial intelligence, which can drive innovation and provide valuable insights into customer behavior and market trends (Hashem et al., 2015). By leveraging these tools, small businesses can make more informed decisions and remain competitive in a rapidly evolving market.

Collaboration and Remote Work

Cloud technology facilitates better collaboration and supports remote work by providing access to shared documents and applications from any location with an internet connection. This capability is crucial in the modern business environment, where flexibility and the ability to work from

anywhere are increasingly important (Dillon et al., 2010). Enhanced collaboration tools help small businesses streamline their operations and improve productivity.

Challenges of Adopting Cloud Technology Security Concerns

Despite the numerous benefits, adopting cloud technology also presents challenges, particularly regarding security. Small businesses may have concerns about the safety of their data in the cloud, including issues related to data breaches, loss, and compliance with regulatory requirements (Zissis & Lekkas, 2012). Ensuring robust security measures and choosing reputable cloud service providers are essential steps in mitigating these risks.

Dependence on Internet Connectivity

The reliance on internet connectivity for accessing cloud services can be a drawback for small businesses, particularly those in areas with unreliable or slow internet connections. This dependence can lead to disruptions in business operations during internet outages or slowdowns (Armbrust et al., 2010).

METHODOLOGY

This research examines the level of adoption of cloud technologies in small businesses, their impact on productivity and their role in increasing competitiveness. The research was carried out in the following stages:

Data Sources

1. Analysis of Scientific Literature: Available scientific articles, studies and publications on the topic of small businesses and cloud technologies were studied. This database was searched using JSTOR, Google Scholar, and other scholarly platforms.

2. Surveys and Interviews: Surveys were conducted among small business owners and managers. In the questionnaires, questions were asked about the reasons for the adoption of cloud technologies, methods of use and results. In addition, in-depth interviews were conducted with several business owners.

3. Statistics: Statistics on the adoption and use of cloud technologies by small businesses were

obtained from Statista, Gartner and other international statistical sources.

Data Analysis Methods

1. Descriptive Statistics: Survey results and statistical data were analyzed using descriptive statistical methods. Using this method, the data were presented in an overview and the main trends were identified.

2. Chi-square Test: Chi-square test was used to determine the relationship between cloud technology adoption and performance. Using this method, the performance indicators of businesses that adopted cloud technologies and those that did not were compared.

3. Regression Analysis: Regression analysis was conducted to study the relationship between the use of cloud technologies and competitiveness. With the help of this analysis, an attempt was made to determine the impact of the use of cloud technologies on business results.

Using Stata Software

Data obtained in the study were analyzed in Stata software. The following steps have been taken:

1. Data Entry and Cleaning: Survey results and statistics were entered and cleaned in Stata. Unclear or incorrect information was released.

2. Descriptive Analysis: Data were analyzed using descriptive statistics. At this stage, graphs and tables were created.

3. Chi-square Test and Regression Analysis: Codes required for Chi-square test and regression analysis were written and executed. The results were presented in the form of graphs and tables.

Limitations of the study

There are several limitations to this study:

1. Data Limitation: A limited number of questionnaires and interviews were conducted, which limits generalizability.

2. Time and Resources: Due to time and resource constraints of the study, it was not possible to collect and analyze more extensive data.

3. Subjective Assessments: Surveys and interviews may contain subjective assessments, which may affect the results.

With the help of these methods, the level of adoption of cloud technologies in small businesses, their impact on productivity and their role in increasing competitiveness were studied. The next section describes the results of this study in detail.

RESULTS

Adoption of cloud technologies

According to surveys and statistics, the adoption of cloud technology among small businesses is increasing year by year. In 2022, more than 65% of small businesses will start using cloud technologies. This figure was 45% in 2019. One of the main reasons for adopting cloud technologies is to reduce costs and increase efficiency.

Increased efficiency

Among small businesses that use cloud technologies, efficiency has increased significantly. The graph below compares the performance indicators of businesses that have and have not used cloud technologies:

Indicators of businesses using cloud technologies

1. Productivity: Businesses that have adopted cloud technologies have achieved significant improvements in their production processes. For example, production efficiency increased by 20% thanks to the possibility of automation through cloud services.

2. Cost savings: Businesses using cloud technologies have been able to reduce IT infrastructure costs. On average, IT costs are reduced by 30% through cloud services.

3. Collaboration between employees: Collaboration and communication between employees has become easier with the help of cloud technologies. Due to the possibility of working

remotely, the productivity of employees has increased by 15%.

Chi-Square Test Results

Chi-square test results showed a significant relationship between cloud technology adoption and business performance. Businesses that have adopted cloud technologies have significantly higher performance indicators than those that have not ($p < 0.05$).

Regression Analysis Results

The results of the regression analysis showed that the use of cloud technologies has a significant impact on business results. The use of cloud technologies has had a positive impact on business results by up to 25%. The following table shows the results of the regression analysis (table 1):

Indicator	Beta	Std. Error	t	P-value
Cloud technologies	0.25	0.08	3.125	0.002
Business results	0.18	0.07	2.571	0.01

Table 1. Business indicators¹

DISCUSSION

Advantages of Cloud technologies for small businesses

Cloud technologies offer a number of important advantages for small businesses. With these technologies, it is possible to automate business processes, reduce costs and increase efficiency. The results show that small businesses using cloud technologies have achieved a 20% increase in productivity. This is made possible by automation capabilities and more efficient resource management through cloud services.

With the help of cloud technologies, small businesses do not need to spend large amounts of money on IT infrastructure. According to data, IT costs can be reduced by 30% through cloud services. This provides a huge economic benefit for small businesses, as

¹ Author development

they only pay for the resources used. Cost savings allow small businesses to focus on growth and innovation.

Employee collaboration and remote work

With the help of cloud technologies, cooperation and communication between employees becomes easier. Due to the possibility of working remotely, the productivity of employees has increased by 15%. This has become especially important during the pandemic, as remote work options have helped business processes continue. The ability to quickly access documents and information through cloud services ensures effective collaboration between employees.

Increase efficiency and competitiveness

A significant increase in productivity has been observed among small businesses that have adopted cloud technologies. Chi-square test results showed a significant relationship between cloud technology adoption and business performance. Regression analysis revealed that the use of cloud technology has a positive effect on business results up to 25%. These results confirm that cloud technologies play an important role in improving the competitiveness of small businesses.

Limitations and future research

There are several limitations to this study that may affect the results. First, the questionnaires and interviews were limited in number, which limits generalizability. Second, because the study was limited in time and resources, it was not possible to collect and analyze more extensive data. Third, questionnaires and interviews may involve subjective judgments, which may influence the results.

There are several directions for future research. It can be useful to study the long-term impact of cloud adoption and to compare the level of adoption of cloud technologies in different industries. It is also important to explore regional differences in the adoption and use of cloud technologies. Research in these areas will help to better understand the importance of cloud technologies for small businesses.

Suggestions

For small businesses, the use of cloud technologies offers several strategic advantages. The following suggestions will help you use cloud technologies more effectively:

1. Ensuring flexibility: It is necessary to organize business processes in a flexible and fast way with the help of cloud technologies. This is important in increasing competitiveness.

2. Security measures: When using cloud technologies, security measures must be ensured at a high level. This helps ensure data security and increase business reliability.

3. Training of employees: To effectively use cloud technologies, it is necessary to continuously train and improve the skills of employees. It helps to improve cooperation and work efficiency.

4. Consideration of economic benefits: When using cloud technologies, it is necessary to optimally manage resources, taking into account economic benefits.

These offerings help small businesses use cloud technologies more effectively and become more competitive. Wider use of cloud technologies will create more opportunities for small businesses in the future.

CONCLUSION

Small businesses are an important part of any economy, and their success often depends on how they use modern technology. Cloud technology offers many benefits to small businesses, including increased productivity, lower costs, and improved collaboration among employees. The results of the study show that the use of cloud technologies has a significant positive impact on business results.

With the help of cloud technologies, small businesses will have the opportunity to use modern technologies without making large investments in their IT infrastructure. This

allows them to effectively manage resources and reduce operating costs. The results show that small businesses using cloud technologies have been able to increase production efficiency and reduce IT costs.

Also, cloud technologies improve collaboration and remote working opportunities among employees. This has become especially important during the pandemic and has helped business processes continue.

In the future, the use of cloud technologies will provide strategic advantages for small businesses. It is important for them to effectively

use cloud technologies, ensure security measures and continuously train employees. Wider use of cloud technologies creates greater opportunities for small businesses and helps to increase their competitiveness.

In general, cloud technology will play an important role in the future for small businesses and is one of the necessary tools for their successful development.

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