International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2024.0213
e ISSN: 2584-2854
Volume: 02
Issue: 05 May 2024
Page No: 1573-1575

Evaluating Benefits and Challenges of Cloud Computing Adoption in It Industry

Ms.K Lakshmi Revathi[1], Dr.T. Vara Lakshmi[2], G. Shivani[3]
[1,2,3]Institute of Aeronautical Engineering College, Dundigal, India.
Emails: *mvaralu2011@gmail.com[1], K.lakshmirevathi@iare.ac.in[2], shivanigandla6@gmail.com[3]*

Abstract
This study examines how cloud computing is being used by different industries, examining the advantages and difficulties that come with this revolutionary development. Through the consolidation of information from multiple surveys of IT professionals and in-depth interviews with leaders in the field, the research reveals a number of benefits associated with cloud computing, including lower costs, better scalability, increased cooperation, and the capacity to quickly adjust to shifting market conditions. These benefits also include improved data management skills, which let businesses make better use of artificial intelligence and big data analytics. However, moving to cloud platforms comes with a number of difficulties, the most important of which being data security worries, issues with regulatory compliance, and the difficulties of integrating new cloud-based solutions with legacy systems that are already in place. The study also emphasizes how important it is to invest in training and strategic planning in order to give workers the cloud computing skills they need. In order to optimize cloud technologies' potential while lowering their risks, business executives and IT specialists can benefit from this paper's balanced evaluation of the benefits and drawbacks of cloud computing.

Keywords: *Cloud Services, Data Security, Scalability, Cost Effectiveness.*

1. Introduction

With the promise of improved scalability, lower IT costs, and simpler operations, cloud computing has become a disruptive force in many industries. As more and more businesses use this technology, it is critical to undertake a thorough assessment of its advantages and disadvantages in order to maximize its potential and minimize any negative effects. Increased adaptability, enhanced disaster recovery, and access to sophisticated analytics—all of which can greatly support creativity and decision-making—are advantages of cloud computing. The move to cloud-based solutions does, however, come with drawbacks, including worries about data security, the difficulty of complying with different standards, and the possibility of vendor lock-in. Furthermore, moving from on-premises IT infrastructure to cloud environments can be resource-intensive and necessitate extensive change management. By looking at case studies and empirical data from a variety of industries, including manufacturing, healthcare, and finance, this paper seeks to address these issues and present a fair analysis of the use of cloud computing in business.

1.1. Purpose

Cloud computing is one of the newest technologies available [1]. Due to its extensive participation in computing, particularly Big Data and Data Science, it is at the top of the list in many different areas of computer science. Delivering a wide range of services via the Internet, including platforms, infrastructure, databases, data storage, and many more, is known as cloud computing. The full suite of software, processing, data access, and on-demand resource storage services is known as cloud computing [2]. This essay provides a thorough explanation of cloud computing, including its architecture and the various services that it offers. This essay also discusses some of the benefits and drawbacks of cloud computing. The use of cloud computing is expanding at an extremely quick pace [3].

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2024.0213
e ISSN: 2584-2854
Volume: 02
Issue: 05 May 2024
Page No: 1573-1575

1.2. Objectives

- To understand cloud services in fulfilling the organization needs.
- To analyze the security measures of cloud providers.
- To identify potential risks and challenges associated with cloud computing adoptions.
- To measure the impact of cloud adoption on user's satisfaction.

2. Method

Primary data is used for the study (Table 1). The primary data is collected from the information and feedback received from the questionnaires distributed to the respondents. The statistical tools used for the study are ANOVA and Linear regression (Table 3 & 4). The sample size of the study is 100. The data gathered from the primary sources through questionnaires.

Table 1 Hypothesis Testing

Cloud adoption	User satisfaction
2	2
17	22
64	49
17	22
0	5

Table 2 Summary Output

Regression Statistics	
Multiple R	0.957713038
R Square	0.917214264
Adjusted R Square	0.889619019
Standard Error	6.211131377
Observations	5

Table 3 ANOVA Regression

ANOVA	Df	SS	MS	F	Significance F
Regression	1	1282.265541	1282.27	33.2381	0.010372167
Residual	3	115.7344589	38.5782		
Total	4	1398			

Table 4 Linear Regression

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	5.97083653	3.692839856	1.61687	0.2043	-5.781428024	17.72310109
X Variable 1	0.70145817	0.12167	5.76525	0.01037	0.31424993	1.088666417

3. Results and Discussion

3.1. Results

A linear regression study between cloud adoption and user happiness is represented in the summary report. The results of the regression model show that there is no significant difference between cloud adoption and user happiness (P>0.05), i.e., 0.20>0.05. According to the R value of 0.917, 91.7% of the variation in user satisfaction is caused by cloud adoption. As a whole, accept H01 and reject H1 (Table 2).

3.2. Discussion

- Cloud services provide scalability and flexibility to meet varying organizational needs.
- It provides strong security measures

International Research Journal on Advanced Engineering and Management
https://goldncloudpublications.com
https://doi.org/10.47392/IRJAEM.2024.0213
e ISSN: 2584-2854
Volume: 02
Issue: 05 May 2024
Page No: 1573-1575

including data encryption and access controls, which are essential for cloud providers.
- Challenges such as data portability and compatibility issues may arise during cloud adoption.
- Cloud adoption can improve user experience through enhanced accessibility and collaboration.

Conclusion

The assessment of security protocols, user experience, and performance capabilities in cloud adoption leads to the conclusion that cloud services can successfully fulfill the needs of the company. when chosen and handled with care. To guarantee optimal functioning, performance parameters including speed, uptime, and response time should be routinely checked. To protect data and be compliant, cloud providers have to abide by strict security protocols and industry rules. Proactive risk management techniques and backup plans are necessary to mitigate potential hazards such vendor lock-in, data breaches, and system outages. By increasing accessibility and collaboration, cloud adoption generally has the potential to increase user experience and happiness; nevertheless, good outcomes depend on performance monitoring and addressing as well as user input. By concentrating on these elements, the company may take advantage of cloud computing's advantages while reducing risks and guaranteeing that user happiness will increase.

Acknowledgements

I would like to express my heartfelt gratitude to my guide Ms. K Lakshmi Revathi and head of the department Dr.T.Vara Lakshmi for providing valuable insights and guidance.

References

[1]. httphs://ieeexplore.ieee.org/author/37404178200
[2]. https://www.researchgate.net/scientific-contributions/Yong-Ho-Song-70507759
[3]. https://scholar.google.com/citations?user=xAGN8vcAAAAJ&hl=en