

CLOUD COMPUTING TECHNOLOGY: OPPORTUNITIES AND CHALLENGES

¹ K Seethal,² Dr. B Menaka

¹ Research Scholar,² Assistant Professor

¹ Department of Commerce,

¹ Alagappa University, Karaikudi 630003.Tamil Nadu, India.

Abstract : Cloud computing technology is an emerging technology that enables companies to manage data using a central remote server. The emergence of cloud technology has benefited companies in several ways in the form of reduction in their IT infrastructure building cost, reduction in workload of companies by outsourcing their work to a third party cloud service providers, efficient allocation of resources, efficient data recovery system in case of disaster, enjoying infrastructure facilities provided by third party cloud service providers and so on. However transferring the data to a central remote server involves certain kind risk of losing the data or even there is a chance of cyber attacks by the hackers. The cloud service providers are responsible to maintain the secrecy of data transferred to the central servers by the companies. The present study is a conceptual study based on articles, reports and websites and the paper discusses the concept of cloud computing technology, Origin, Models, Benefits and Challenges of implementing cloud technology.

IndexTerms- Cloud Computing, History, Models, Opportunities, Challenges..

I. INTRODUCTION

Cloud computing is an emerging technology used for computing that works with the help of internet and central remote servers to maintain data and application. The term cloud denotes something which is present in a remote location. The third party cloud service providers offer their services to the companies through LAN, WAN or VPN. The main advantage of cloud enabled organisation is that they can concentrate on their core area works. Such cloud enabled organisations need not spend much amount for building computer infrastructure. Companies can really reduce their IT infrastructure implementation costs. It is identified that with the usage of cloud technology companies can get their applications run faster. The manageability of the applicability will get improved with the usage of cloud technology. ¹ The use of cloud computing technology really allows us to create, configure and customise applications online. The staffs are able to work by sitting at anywhere in the world. The users can easily access the data bases and the resources through the internet all over the world. The various applications like email, web conferencing and customer relationship management can be used while implementing cloud technology.

1.1 OBJECTIVES OF THE STUDY

- To study the origin of cloud computing and the various cloud models.
- To study the advantages of cloud computing technology.
- To study the challenges of cloud technology.
-

II REVIEW OF LITERATURE

Sunita Rani1 & Ambrish Gangal (2012) in their study made an attempt to study the various advantages of cloud computing. They further studied the various difficulties and problems associated with cloud computing and made an attempt to offer solutions for the various problems that arises in case of cloud computing.

Nancy Awadallah (2016) in her study made an attempt to study the role of improved cloud security. The author further studied the impact of cloud computing on the financial services industry. She also analysed the different areas that are to be concentrated by a company while implementing cloud based technology. The author concluded that trust and security are two main obstacles that companies faces while implementing cloud technology.

Gujun Yan (2017) in his study made an attempt to study the various characteristics of cloud banking. The author further studied the various advantages that can be acquired when implementing cloud based technology in banks. The various challenges that arise while implementing cloud technology in banks were also discussed by the author.

RESEARCH METHODOLOGY

The present study is a conceptual study based on secondary data which has been taken from various articles, reports, websites and books.

History of Cloud Computing

The concept of Cloud Computing has emerged in the year 1960. The introduction of salesforce.com in the year 1999 is identified as the major mile stone in the development of cloud computing. The expert tells that the concept of cloud was given by John McCarthy, the computer scientist who proposed the idea of computation which is delivered as a public utility. ² The idea of virtual

¹ <https://en.wikipedia.org/wiki/Cloud_computing>.

² <<https://www.computerweekly.com/feature/A-history-of-cloud-computing>>.

machines started arising in the year 1970s. The software's like VMware were used to implement one or more operating system all together in a remote environment. It was identified that in the year 1990 tele communication companies started providing visualised private network conditions. At present SoftLayer is identified as the largest provider of cloud computing infrastructure service.³

III Cloud Computing Models

- **Private Cloud**

In case of private cloud models the services are provided to those users who are internal in nature and such users may or may not be billed through IT charge back.

- **Public Cloud**

Under this cloud model there will be a third party who provides cloud services over the internet. Amazon Web Services (AWS), Microsoft Azure and IBM are the popular public cloud service providers. In a public cloud model the services are mostly provided on a demand basis.

- **Hybrid Cloud**

A hybrid cloud model is a combination of a private cloud model and public cloud model. A hybrid cloud model enjoys benefits of both private and public clouds. Those works which are sensitive and confidential in nature will be done in private clouds and the services of third party cloud service providers will be used to free from work overloads. The aim of the hybrid cloud model is to simultaneously enjoy the infrastructure benefits provided by the public cloud service provider and to maintain the confidentiality of the internal data.⁴

IV Benefits of Cloud Computing

- **Quick Accessibility**

Cloud technology allows employees to access digital tools quickly. Cloud based software's are easily accessible through all browsers.

- **Supports working from a remote environment.**

The cloud technology enables employees to work from any place according to their comfort which will result in increased productivity. Several studies reported that the productivity of the employees will be much more when they are working from their home rather than the office.

- **Reduced Cost**

The usage of cloud based technology reduces the workload of the IT teams and hence the cost can be reduced.

- **Multi site management.**

Using cloud based technology it is possible to operate different sites simultaneously from one site. It can really help the working of companies with different branches.

- **Improved Collaboration**

As the cloud computing allows the members to access the server from a remote place it is possible to access data easily. Moreover the data can be downloaded, uploaded and edited from anywhere in the world.

- **Good Security**

Small organisations won't be able to invest fund for establishing a recovery mechanism. Cloud computing technology enables smaller organisations to easily recover from disasters.⁵

V Challenges in implementing cloud computing technology

- **Security and Privacy issues**

The main issue that arise while implementing cloud technology is the security and privacy issues. The cloud service provider should be very much concerned about the security needs of the users of the cloud based services

- **Service Quality Issues**

Companies fear about the quality of the services offered by the third party cloud service providers and limits outsourcing of their works to the cloud service providers.

- **Fear of cyber attacks**

The various data stored in a remote cloud server will always be facing the risk of cyber attacks by an external hacker. The security level offered by the cloud service providers is a major factor considered by banks while outsourcing their works to clouds.

- **Denial of Service Attacks**

It was identified that as cloud is share by different users there is chance of more DOS attacks. Twitter faced a major DOS attack in the year 2009.

³<<https://www.ibm.com/blogs/cloud-computing/2014/03/18/a-brief-history-of-cloud-computing-3/>>.

⁴<<https://searchcloudcomputing.techtarget.com/definition/cloud-computing>>.

⁵<<https://dotcms.com/blog/post/11-benefits-of-cloud-computing>>.

VI CONCLUSION

Cloud Computing is a technology that is emerging now a days. It really helps in efficient management of data using remote servers. Companies can really make use of cloud computing technology for reducing their workoverloads. Efficient data recovery in case of disaster is one of the major benefits of cloud computing technology. Cloud technology has really reduced the workload of IT members and the cost of employing more staffs and IT infrastructure has also considerably decreased because of the arrival of cloud technology.

REFERENCE

Articles

- [1] Rani, S., & Gangal, A. (2012). Security issues of banking adopting the application of cloud computing. International Journal of Information Technology, 5(2), 243-246.
- [2] Awadallah, N. (2016). Usage of cloud computing in banking system. International Journal of Computer Science Issues (IJCSI), 13(1), 49.
- [3] Gujun Yan (2017). Application of Cloud Computing in Banking: Advantages and Challenges. Advances in Economics, Business and Management Research (AEBMR), volume 23, 29-32

a. Websites

- [4] <https://www.computerweekly.com/feature/A-history-of-cloud-computing>
- [5] <https://www.ibm.com/blogs/cloud-computing/2014/03/18/a-brief-history-of-cloud-computing-3/>
- [6] <https://searchcloudcomputing.techtarget.com/definition/cloud-computing>
- [7] <https://www.iqvis.com/blog/top-6-challenges-of-cloud-implementation/>

