

# Cloud Computing an Emerging Technology to Save Money, Time and Resources

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**Abstract-** This paper is highlighting the trend of use of cloud computing. Cloud Computing gives range of computing resources like servers and storage of emails, documents, voice, etc. over the internet. It provides hosting environment which is instant, secure, scalable, flexible, and helps to save money, time and resources. Because of metaphor for the internet it's called cloud computing where internet is cloud. In simplest words, cloud computing means keeping and retrieving data and programs over the Internet instead of our secondary memory of computer. This paper describing about the use of Cloud Computing in Organization, Advantage of Cloud Computing, Problems with Cloud Computing, Stack of Cloud Computing, Leaders of Cloud Computing and Future Forecast.

**Index Terms-** Advantage of Cloud Computing, Cloud Computing, Future Forecast of Cloud Computing, Problems with Cloud Computing

## I. INTRODUCTION

Because of metaphor for the internet it's called cloud computing where internet is cloud. In simplest words, cloud computing means keeping and retrieving data and programs over the internet instead of our secondary memory of computer. When we store data on or run programs from the computer's secondary memory, that's called local storage and computing. Everything we need is physically close to us, which means accessing data is fast and easy for that single computer, or others on the local network. The cloud is not to have a dedicated hardware server in residence. Storing data on a home or office network does not count as utilizing the cloud. Cloud Computing means we need to access our data or programs over the Internet, or the synchronization of data with other information over the Net. Cloud computing is the provision of computing services over the Internet. Cloud services is for both individuals and businesses to use software and hardware resource that are managed by third parties at remote locations. Now a days cloud computing is used in several ways it is used as social networking, webmail, file storage, and online business applications. The cloud computing gives access to information and computer resources from anywhere that a network connection is available. Cloud computing provides a shared pool of resources, including data storage space, computer processing power, networks, and specialized corporate and user applications.

## II. RESEARCH ELABORATIONS

### Use of Cloud Computing in Organization

For a big organization it is important to know about what's on the other side of the connection, but as an individual user, we may never have any idea what kind of massive data-processing is happening on the other end. The end result is the same with an online connection, cloud computing can be done anywhere, anytime. Some organization goes for Software-as-a-Service (SaaS), where the business subscribes to an application it accesses over the Internet. Some opted Platform-as-a-Service (PaaS), where an organization can create its own custom applications for use by all in the company. Infrastructure-as-a-Service (IaaS) is another choice, where players like Amazon, Google, and Microsoft provide a backbone that can be hired by other companies. Cloud Computing is becoming giant business. The market is on its way to generating \$100 billion a year.

The deference between local computing and cloud computing sometimes indistinct because the cloud is part of almost everything on our computers these days. We can easily have Microsoft Office 365, one of the versions of Office 2013 that utilizes a form of cloud computing for storage Microsoft SkyDrive. Microsoft also offers a set of Web apps that are close versions of Word, Excel, PowerPoint, and OneNote that we can access via our Web browser without installing anything.

Cloud computing is assuring access to computing services from any place in an economical, adaptable and upgradable way, that is why organizations processing personal data are interested in its use. In cloud computing the service providers are third party. The essence of fairness practical acceptability of the service is therefore trust. The client, or the data controller, is the one who has to make a risk assessment, alone or with the assistance of adequately qualified third parties. Based on the results the client has to make a decision whether or not to trust a certain cloud provider in modern era we all want to store a large amount of data, but due to limited storage capacity of data storing, that is cloud computing, which focuses on those techniques that provide data security in cloud environment. Cloud computing delivers computing power, software services, storage services and even a distributed data center infrastructure on demand. With the development of parallel computing, distributed computing, grid computing, a new computing model appeared. The concept of computing comes from grid, public computing and Software as a Service. It is a new method that shares basic framework. The basic principles of cloud computing is to make the computing be assigned in a great number of distributed computers, rather than local computer or remoter

server. The running of the enterprise's data center is just like Internet. This makes the enterprise use the resource in the application that is needed, and access computer and storage system according to the requirement.

Some research work introduces the background and principle of cloud computing, style and actuality. Also introduces the application field the merit of cloud computing such as to do not need user's high level equipment, so it reduces the user's cost. It provides secure and dependable data storage center, so user needn't do the awful things such storing data and killing virus, this kind of task can be done by professionals. It can realize data share through different equipment. Cloud computing is a computing style that provide power referenced with IT as a service. Users can enjoy the service even he knows nothing about the technology of cloud computing and the professional knowledge in this field and the power to control it. Some of major security issues faced by the customers or users we have highlighted the major problems pertaining to cloud computing like confidentiality, integrity and availability and the like. Players across the IT industry have announced cloud computing efforts of varying shapes and sizes, leading analysis to attempt to attempt to identify various characteristics, such as infrastructure outsourcing, software as a service, and next generation distributed computing, to describe these efforts.

### III. ADVANTAGE OF CLOUD COMPUTING

There are lots of benefits of cloud computing like Increase volume output or productivity with lesser manpower. Which reduces cost per unit of project or product. It help to access to our information with minimal spending on technology infrastructure. It gives access of out information worldwide where they have an Internet connection. It help to get more work done in less time with less manpower. It saves money sending on hardware, software or licensing fees. Cloud is accessible 24X7 and 365 days from anywhere which makes our life much easier! It is cost saving because we pay for what we use. Easy on installation and maintenance, we can get almost unlimited storage, it is highly automated and Flexible with better mobility. Resources are shared and back up and restoration is available in both automatic and manual mode. Cloud computing increases collaboration by allowing all employees wherever they are to sync up and work on documents and shared apps simultaneously, and follow colleagues and records to receive critical updates in real time. Businesses using cloud computing only use the server space they need, which decreases their carbon footprint. Using the cloud results in at least 30% less energy consumption and carbon emissions than using on-site servers. And again, SMEs get the most benefit: for small companies, the cut in energy use and carbon emissions is likely to be 90%.

### IV. PROBLEMS WITH CLOUD COMPUTING

Cloud computing is having certain issues, problems & risk associated with it. Some problems with clouds are Information Security, Compatibility, Standardizing Cloud Technology, and Monitoring.

Information Security is one of the most major issues of cloud computing. It is completely based on the internet which makes it at risk of hack attacks. But it's also true that now a days all the modern IT systems are connected to the internet. In cloud computing it's easier for companies to quickly recover from such attacks because of its distributed network system.

Compatibility with all IT systems in a company is another issue with cloud computing. Cloud Computing is most cost efficient option for companies. But problem is to replace much of its existing IT infrastructures in order to make the system compatible on the cloud. Hybrid cloud is one of solution for this problem.

Lack of standardization in the system is another issue of cloud computing. There is no proper standards for cloud computing are set yet so it's almost impossible for a company to find out the quality of services.

All the data is handled by service provider when cloud computing responsibility is taken by service provider. Monitoring of processes is another issue of cloud computing.

### V. STACK OF CLOUD COMPUTING

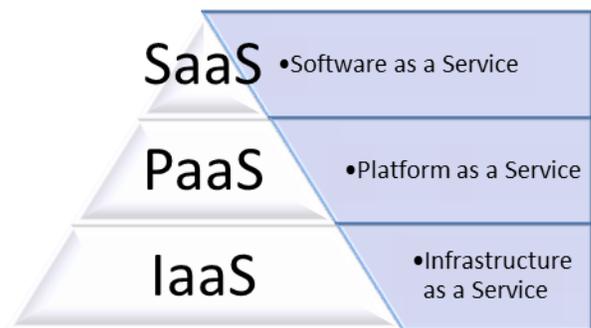


Figure 1: Stack of Cloud Computing

Software as a Service (SaaS). This type of cloud computing is also referred to as software on demand. A popular example of SaaS is Google docs. SaaS allows people to access the functionality of a particular software without worrying about storage or other issues.

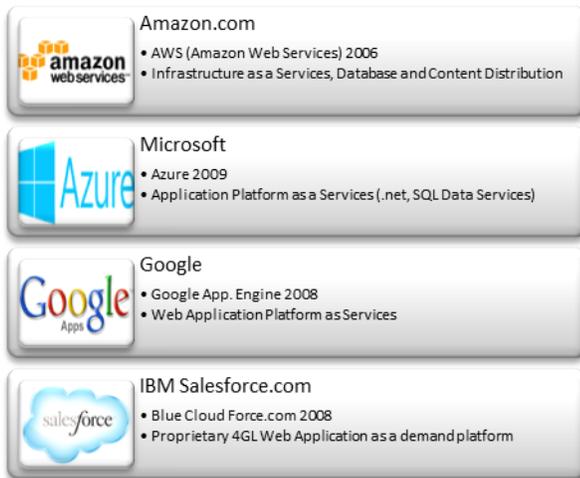
Platform as a Service (PaaS). With this, organizations can run their own software without having to worry about maintaining hard drives and servers. Instead, they can run their own applications on the cloud service's platform.

Infrastructure as a Service (IaaS). With IaaS, organizations have access to the unlimited storage potential of the cloud. They can grow and shirk their storage space as needed. This means that they do not have to worry about having dedicated servers on site. It also means that they can weather increased use of their sites or applications as needed.

Network as a Service (Naas): The least common model, where the user is provided with network connectivity services, such as VPN and bandwidth on demand.

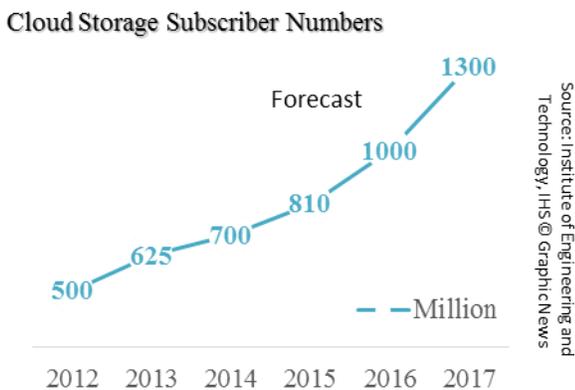
### VI. FINDINGS

#### Leaders of Cloud Computing and Future Forecast



**Figure 2: Leaders of Cloud Computing**

Amazon, Microsoft, Google, IBM are biggest leaders of cloud services. Amazon is providing Infrastructure as a Services, Database and Content Distribution since 2006 as Amazon Web Services. Microsoft is providing Application Platform as a Services like .net, SQL Data Services since 2009 as Windows Azure but from 3rd April 2014 it's renamed as Microsoft Azure. Google is providing Web Application Platform as Services since 2008 as Google App. Engine. IBM Salesforce.com is providing Proprietary 4GL Web Application as a demand platform since 2008 as Blue Cloud Force.com.



**Figure 3: Cloud Storage Subscriber Numbers**

Figure 1 is showing cloud storage subscriber numbers. In 2012 it was 500 million subscriber, in 2013 it was 625 million, and there is a chance to be 700 million subscriber in 2014. Forecast of Institute of Engineering and Technology is that it's going to be 810 million in 2015, 1000 million in 2016 and it will touch 1300 million in 2017. So we can see market growth of cloud computing is going to be very high.

According to International Data Corporation, Indian Cloud Computing market was estimated at \$535 million in 2011, is likely to grow by mote the 70%. Cloud computing refers to pay-per-use model of computing where applications and software are accessed over the internet and not owned by users. Research firm Zinnov has estimated market growth will reach \$1.8 billion by 2015. Software as a Services (SaaS) is expected to reach

\$650million of that revenue rest will be achieved by Infrastructure as a Services (IaaS) and Platform as a Services (PaaS).

## VII. CONCLUSION

The future of cloud computing is bright for the companies that implement the technology now but, like everything else, cloud computing too has its pros and cons. While the technology can prove to be a great asset to companies, it could also cause harm if not understood and used properly. For good service it require technology to ensure uptime, and robust in other word more powerful & healthy. Centralization of data is required with more capability. Hybrid Cloud Computing, commodity hardware, low power processors, and modular and social software are going to be solutions to increase efficiency of cloud computing. Right now we are in the early days of cloud computing, with many organizations taking their first, tentative steps. But by 2020 cloud is going to be a major and permanent part of the enterprise computing infrastructure. It opens doors by making applications and technology more accessible than in previous years. Companies that would normally require enormous amounts of startup capital may only need a fraction of what was previously required to succeed.

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