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Cloud Computing and Accounting: Some Issues with Special Reference to India

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ABSTRACT

Cloud computing and accounting have emerged as paradigm shift in the field of computing and accounting. Cloud computing is an internet-based computing system where services are delivered to the clients through internet and can be accessed from anywhere at any time with speed and convenience. In cloud accounting, on the other hand, the accounting functions are performed over the internet using cloud technology. Due to a number of advantages of cloud technology most importantly with respect to its flexibility, accessibility and scalability (i.e., cost effectiveness), it has been witnessing growing market footing worldwide in the corporate and social environment in recent times and most countries attaching importance on heir preparedness for the adoption and growth of cloud computing services. The application of cloud computing and accounting has also gained remarkable popularity in our country in the last few years and expanded across industries and firm sizes. Both national and international IT players have entered into the business of rendering cloud services in the country as well as government of our country is also implementing this technology to expand its various scheme and initiatives. In the present paper different issues related to cloud computing and accounting such as concepts of cloud computing and accounting, different models of cloud computing; and advantages and problems associated with cloud technology have been discussed in a nutshell. A modest attempt also has been made in the study to evaluate present scenario of application of cloud technology in the country and delineate the role that the government has to be played to accelerate the growth of the emerging sector and keeps the country moving towards cloud growth path.

Keywords: Cloud Computing, Cloud Accounting, Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS), Public Cloud, Private Cloud, Hybrid Cloud.

INTRODUCTION:

Cloud computing has emerged as one of the most surging topic in the field of computing technology worldwide in recent times and our country also gradually becoming the major user of cloud technology. Cloud computing is an internet based computing where services are delivered to the users through internet. In other words, cloud computing is a computing paradigm where systems are connected through internet that can be easily accessed from anywhere and anytime with speed and convenience. This means that cloud computing can provide unlimited computing power without significant capital investment and data can be retrieved from any location with the help of internet connection. Cloud computing is a paradigm shift in computing, where a large pool of systems and sub-systems are connected in private or public networks in order to provide vigorously scalable infrastructure for application, data and file storage. It has reduced significantly the cost of computation,

application hosting, content storage and delivery and can help specially those small enterprises who cannot afford huge investment in IT infrastructure by their own at their premises. It is based on the analogy that 'if you need milk, you need not to have a cow'. It, thus, can significantly impact the cost structure of all firms, especially of SMEs.

Cloud accounting, on the other hand, transforms the traditional system of accounting by delivering on demand access to company's data, documents and applications to accountants from anywhere around the globe with minimum effort using internet connectivity. The reason behind popularity of cloud accounting is the availability and accessibility of financial information from anywhere in the world at any point of time. As the businesses are becoming global, virtualization of accounting system has emerged as a pre-requisite of the move towards that direction.

REVIEW OF LITERATURE:

There exists a large number of studies conducted in the context of various countries globally which have analysed different aspects of cloud computing and accounting like its framework, its applicability, issues in its implementation, its prospects, its impact on accounting and business, etc. Some of the notable studies on this domain are Ebenezer et al. (2010), Parashar et al. (2010), Misra & Mondal (2011), Agundez et al. (2012), Christauskas & Miseviciene (2012), Avram (2013), Antwi & Kyei (2014), Avram (2014), Dimitriu & Matei (2014), Jhaveri & Agrahar (2014), Kamboj (2014), Shaban & Ali (2014), Shahzad (2014), Ozdemir & Elitas (2015), Wyslocka & Jelonek (2015), Salunkhe & Kelkar (2016), Wadhe (2016), etc. Parashar et al. (2010) in their study investigated the future of cloud computing in Indian context and opine that though enough potential exists to utilize cloud computing India, many hurdles the country has to face in its widespresd application as it is being new and still in Research &Development phase. In their article Christauskas & Misevicience (2012) discussed about the advantages and risks associated with cloud computing for small and medium sized enterprises in Lithuania. They pointed out that Lithuanian companies have a great opportunity to use cloud computing fruitfully but due to limited number of cloud developer in the country it has not become so popular. Ali & Shaban (2014) discussed about main driving forces behind cloud computing like wireless networks, reduced storage costs, improved software, etc. Kamboj (2014) in his study has analyzes the risk and challenges of cloud computing along with the way to overcome the risk and threats posed by cloud model. The author also suggested that the users should be educated and well aware about the risk and threats and should take into consideration its security issues along with its cost and features. Wyslocka & Jelonek (2015) have tried to outline the threats and barriers associated with cloud computing along with its benefits and prospects. In his article Wadhe (2016) has opine that cloud computing will bring revolution for India to develop new entrepreneurs and will act as the cost saving key pillar for developing new enterprises. But for that the country needs to develop a strong platform to make, manage and run the cloud applications.

OBJECTIVES OF THE STUDY:

Cloud computing offers a number of benefits within and outside of an organizations by providing advanced and up-to-date technologies. It is now utilized in almost all sectors in an economy. The present study aims at analyzing different issues involved in cloud computing and accounting. The major objectives of the study are:

(i) To study different models of cloud computing.
(ii) To outline the concept and benefits of cloud accounting to business.
(iii) To investigate the problems associated with cloud computing and accounting.
(iv) To analyse present scenario of cloud computing and accounting in India.

Different Types of Cloud Computing or Cloud Computing Models:

There are two basic models of cloud computing – Service Model and Delivery or Deployment Model. The Cloud Services Models are of three types as under:

1. Infrastructure as a Service (IaaS): It is the lowest model which provides processing, basic storage and computing resources as standardized services over the network. Servers, storage, networking hardware, data center space etc. are made available to perform the works of the clients. The clients typically install and deploy their own software on the infrastructure and use infrastructural resources from the cloud. Common examples of IaaS are Rackspace Cloud, Amazon Web Services, Cisco Metapod, Microsoft Azure, Google Compute Engine, etc.

2. Platform as a Service (PaaS): It is the next level after IaaS. Here the cloud providers offer the client the development environment as the service and the clients develop their own applications which is being run using infrastructure offered by the service provider. The service providers offer a combination of operating system and application servers that best suit the specific requirements of the users. Examples include: Amazon Engine, Apprenda, Google App Engine, etc.
3. Software as a Service (SaaS): It is the highest level of cloud computing model in which the cloud providers offer a complete application to the clients. In this model, the clients use the software application hosted by the service provider over the internet as an end product, pay as per the usage. The users do not have any control over the infrastructure, platform or the software. Examples are SaaS are Google Apps, Salesforce, Dropbox, Workday, Cisco WebEx, Netflix, etc.

Cloud Delivery or Deployment Model can be of three types - Public Cloud, Private Cloud and Hybrid Cloud.

1. Public clouds are owned and operated by service providers. They offer the service to the clients at an attractive, low-cost and pay-and-use model; and the providers enjoy the economies of scale by supplying the same standardized service to a large number of clients. Here, as the clients have to share the same infrastructure, they enjoy limited configuration, security protections, and modification flexibility.
2. Private clouds are developed dedicatedly for a particular enterprise. Unlike public cloud, it focuses on data security and provides greater control. Private cloud may be of two types - (i) On-premise Private Cloud: On-premise private clouds also known as internal clouds are hosted within one's own data center. This model provides more standardized process and protection but is limited with respect to size and scalability. It is best suited for applications which require greater control over security aspects; and (ii) Off-premise Private Cloud: This type of private cloud is hosted by a cloud service provider but provides an exclusive cloud environment and ensures complete privacy.
3. Hybrid Clouds is a combination of public and private cloud models in which the service providers utilize the services of third party cloud providers fully or partially. Users opt for this model to enjoy the flexibility of computing of the public cloud for basic and non-sensitive works; and keep confidential, business-critical data and applications safe under on-premises company firewall. Additionally, the resources of a public cloud help in managing unexpected and occasional surges in workload in a cost efficient manner. By opting hybrid cloud, companies can get rid of making massive capital expenditures in purchasing and maintaining additional resources which could remain idle for a long period to meet short-term surge in workload and can pay only for resources they temporarily use. It, thus, offers flexibility, scalability and cost efficiencies with the lowest possible risk of data exposure.

CLOUD ACCOUNTING AND ITS ADVANTAGES:

The term 'cloud accounting' refers to a system in which accounting functions are performed over the Internet. It is an online accounting system having a number of advantaged compared to traditional accounting software installed in the system of an enterprise. Here, the users does not require to install accounting software or have a server rather a cloud service provider arranges for remote servers and the applications and gives the user online access to these for a fee for managing and maintaining the financial records of the user. The basic difference between cloud accounting and traditional accounting software is that the former can be run on host servers through internet connectivity and can easily be accessed from any place at any time while the later can be accessed through the system of the user where it is installed. Cloud accounting is thus superior than traditional accounting with respect to its flexibility, accessibility and other potential benefits to its user.

The major benefit of cloud accounting is that it enables the users to access the accounts from any location having internet connectivity. Apart from this, cloud accounting provides a number of advantages to an organization as follows:

(i) Cloud accounting offers low-cost services which eliminate the necessity of incurring huge expenditure on expensive software, hardware and server. The services provided by the cloud accounting companies are accessible through internet from any location by multiple users and are charged according to demand-based usages of the customer. Moreover, it provides latest and updated version of the software eliminating time consuming updates of software.
(ii) By rendering flexibility, it helps to save time of the accounting personnel to work on their convenience and allow them concentrate on other internal or customer-centric services.
(iii) It facilitates easy sharing of files and exchange of information amongst different stakeholders like, employees, suppliers, customers, etc anywhere in the world with minimum time and cost.

(iv) Cloud technology processes and controls all the accounting tasks centrally, saves them in a remote server and support automatic cloud backup in a real time basis eliminating the possibility of data loss due theft or any other hardware or software related reasons.
(v) The data saved in the cloud can be accessed through any device like, laptop, smart phone, etc. and hence it the best suited system for the users who need to travel frequently.
(vi) It enables decision making and taking remedial measures with speed and accuracy as each member involved in decision making process can access the financial data and information simultaneously irrespective of their physical locations.

PROBLEMS ASSOCIATED WITH CLOUD COMPUTING AND ACCOUNTING:

Despite of a number of advantages of cloud accounting and accounting particularly with respect to its flexibility, accessibility and cost efficiency, it cannot be regarded as the ideal alternative for every organisation to leveraging information technology for superior business competitiveness. The decision to going cloud is a risk-based decision instead of a technology-based decision. As under cloud accounting the business-sensitive critical data and information can be accessed from anywhere through internet, the security aspect of those data and information cannot be negated. Though the client has private access to its data which cannot be accessed by any third party, there exist scope for using such data by the service provider for some illegal and unethical purposes. The problem becomes severe if the cloud service provider provides third party software solution without the knowledge of the customer to meet the customer demand. The decision to move to cloud accounting, thus, has to be made considering all these aspects As financial records are extremely important and sensitive for any organisation. Another serious threat to cloud accounting is posed by cybercrime which may result in unauthentic use or misuse of business critical data and information. To address the issue, more effective legal provisions are required to be formulated along with due concern on security aspect of data and information. Moreover, all the required business applications may not be supported in cloud accounting and most of the cloud accounting software does not provide the facility to back up data on the client's computer. As a result, if switching to other software is required, the data already entered into the earlier software either will be lost or the client need to pay for the earlier software to use its own data and information.

PRESENT SCENARIO OF CLOUD COMPUTING AND ACCOUNTING IN INDIA:

Cloud computing has been witnessing increasing market footing around the globe and more and more businesses are adopting different models (i.e., public, private and hybrid cloud) of cloud computing technology spreading its roots day by day in the corporate and social environment. As per the 'BSA Global Cloud Computing Scorecard, 2018', which makes ranking of countries on the basis of their preparedness for the adoption and growth of cloud computing services, cloud computing has experienced an exponential growth over the past five years and most countries are putting additional emphasis on privacy laws, cyber security laws, and cloud infrastructure to witness further expansion of this sector.

In pace with of global scenario, our country also has been progressing towards cloud computing environment. The application of cloud computing has gained momentum and witnessed a remarkable growth in India in the last few years and expanding at a rapid pace across industries and size of business. Due to its varied advantages, most importantly scalability and pay-as-you-use pricing models, almost all the sectors of the economy like, manufacturing, railways, banking and finance, advertising, healthcare, retail, education, etc. are switching to cloud services for better business performance and reaching their customers in a better way. In a study conducted by Cisco Consulting Services (CCS), it is evident that out of 600 IT firms surveyed in the country, 83% are highly satisfied and another 13% are somewhat satisfied with cloud services. Another study conducted by Forrester Research on twelve Asia Pacific countries, reveals that nearly 89% respondents in India think that cloud computing is germane to their organisations and about 79% already have undertaken cloud-related initiative or are planning to go cloud shortly. 'India Cloud Computing Market Forecast & Opportunities, 2020', has estimated the market for cloud computing services in India to grow at a CAGR of over 22% during the period 2015-2020. It is also estimated that cloud computing alone will generate over 2 million jobs by 2020. As per a report by NASSCOM, the Indian cloud computing market is expected to cross the mark of $16 billion by 202. In India, Software as a Service is the most popular cloud service segment which occupies over 40% share in the market.

Most of the major IT firms of the country like, Tata Consultancy Services, Infosys, Wipro, Tech Mahindra, HCL, Zenith Infotech, Synapse India, CtrlS, Ozonotel Systems, App Point, etc. have already entered into the

cloud services and the country has witnessed international IT players like IBM, Microsoft, Azure, AWS, Amazon, etc. as the vendors in the emerging cloud battle ground of the country. The Government of India is also implementing cloud computing technology to expand its e-governance and digital India initiatives throughout the country. The government has made plans for implementation of IT enabled services, applications and policies including launching of a national cloud 'Meghraj' to deliver full benefits of various government schemes and initiatives to the end users. With increased government spending on National Optical Fibre Network and various e-governance portals as well as growing application of cloud services amongst IT professional, SMEs and start-ups, the market for cloud in India is expected to flourish further.

In spite of remarkable progress of the country towards cloud computing path, India still lagging behind developed and many developing countries (with 20th rank out of 24 countries as per 'BSA Global Cloud Computing Scorecard, 2018') in policy implementation which are considered critical for the future of cloud computing in the country like, data privacy and security laws, broadband penetration, intellectual property rights, cybercrime etc. Thus, In order to capitalise the benefits of the cloud to accelerate the growth of the emerging sector, the government has to formulate a more comprehensive legal and regulatory framework that will ensure data privacy and security, robust enforcement of cybercrime and intellectual property protection as well has to promote development of necessary IT infrastructure particularly in rural and semi-urban regions across the country and confidence of users that benefits of cloud can be enjoyed without jeopardising the safety, security and privacy of business-critical information and data.

CONCLUSION:

In line with global practice, our country has also emerged as one of the major users of cloud technology in recent times. Due to its varied advantages, most importantly cost-effective, flexibility, scalability and accessibility, cloud accounting has increasingly been becoming popular to Indian business houses particularly among small-sized firms and SMEs. The application of cloud computing has gained momentum and witnessed a remarkable growth in India in the last few years and expanding at a rapid pace across industries and size of business. Almost all the major IT players in the country as well as renowned international IT firms have entered in to the business of providing cloud services in the country. The Government of our country is also implementing cloud computing technology to expand its e-governance and digital India initiatives throughout the country with the objective to deliver full benefits of various government schemes and initiatives to the end users. But, in spite of remarkable progress of the country towards cloud computing path, India still lagging behind developed and many developing countries in its preparedness for the adoption and growth of cloud computing services as well as in policy implementation in critical areas of cloud computing like, data privacy and security laws, broadband penetration, intellectual property rights, cybercrime etc. Thus, in order to capitalize the benefits of cloud computing and keep the country moving towards cloud growth path, the government our country has to formulate and implement a more comprehensive and straighten legal and regulatory framework that will ensure data privacy and security, robust enforcement of cybercrime and intellectual property protection; promote development of necessary IT infrastructure particularly in rural and semi-urban regions across the country and ensure the users that its benefits can be enjoyed without sacrificing the safety, security and privacy of business-critical information and data.

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