Cloud Computing: Going Global

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Abstract:

Cloud computing is the concept that emerged recently. After its introduction, there is a massive change in industries. Specifically, industries holding IT resources welcome cloud computing services. Presently, the term 'Public Cloud' is also introduced in educational sector. Earlier research studies considered cloud computing as a beneficial factor. Cloud computing services are used globally and organizations have obtained more profit out of it. One such good example is Microsoft Azure. This paper briefly reviews those studies underlying the concept 'cloud computing'. It enables the readers to understand the utility of cloud computing in enterprises.

Keywords: Cloud computing, IT infrastructure, Computing resources, Data centers.

1. Cloud Computing Service

Till 1980's computers were used mostly for commercial purposes such as accounting, and for inventory management. Those days, the accounting function was managed by the department of Electronic Data Processing (EDP). The development of software was internal and few computer programming languages such as COBOL, Basic and Fortran was used. The system was fully centralized. It is mainly used for accuracy and data storage purpose. Later on, industrial growth paved the way for the widespread of IT communications. Companies started to implement IT solutions, specifically for cost saving purpose. Due to the development of software and technologies, IT infrastructure became decentralized (Tavakolian, 1991; Walker, 1993). However, several issues were raised in the development of IT system. One of the major issues was the underutilization of expensive IT infrastructure in data centres. In order to resolve the issues, firms once again centralized their computing resources. As a result of it, the end users started to work with desktop, laptop, tablet, I phone and smart phone through network technologies (Chen and Xin, 2005; Velte et al. 2010).

The phrase 'cloud computing' first appeared in a Compaq internal document in early 1996. As a symbol of internet, the word 'cloud' was used and 'cloud-like shape' was used to depict a set of systems with networking functions (Antonio, 2011). Industries get more benefits through cloud computing. Now, it is not mandatory for the organizations to have their own data centers. They have an option to rent software packages, storage space software, and either to build or access applications. Cloud computing can be accessed from anywhere by using device with internet connection. On the basis of usage, payment is collected from the end users. If the users are public, then it is called as public cloud. When the entire organization is a user, it is called as private cloud. If the selected people are given provision to become a user, it is called as community cloud. To avail more benefits, certain users will use all the three private, public, and community cloud which is called

as hybrid cloud. (Leavitt, 2009; Graham, 2010; Armbrust et al. 2010).

2. Research Proof

Cloud computing is an interesting concept and so many researchers have conducted study in this area. Cloud computing includes various characteristics namely (i) IT infrastructure facilitate end users, (ii) cost saving, (iii) user can avail services anywhere with the help of internet, (iv) the maintenance of cloud computing application is much easier, (v) multiple users can work with the same data at the same time (Amies et al. 2012).

Considering investment, it is a cost saving one. The cost is reasonably cheap for smaller internet based applications. There is no necessity for smaller organizations to make huge investments. There are some models that we can use to pay for availing the cloud computing services. For example in 'pay-per-use model', the organization will only pay when they use the services. Therefore, firms will only pay the operative cost. Initial cost is relatively low for new business and established firms owning IT resources. Cloud computing also offers services through different models such as Infrastructure-as-a-Service (IaaS), Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), and Storage-as-a-Service (Staas) (Furht and Escalante, 2010; Graham, 2010; Zhang et al. 2010).

Low et al. (2011) conducted research to identify the factors that aid implementation of cloud computing. The study identified three factors such as (i) 'technology' which include four parameters namely (a) relative advantage – it is perceived to be more beneficial, (b) compatibility – the consistency of innovation with present values and past experience, (c) complexity – innovation is perceived to be more difficult to use, and (d) data concern – data confidentiality, (ii) 'organization' includes two factors namely (a) top management support – management support for the adoption of technology, and (b) technology-readiness – managers perceive

that their organization have adequate resources, and (iii) 'environment' include two factors namely (a) regulatory policy – policies forced by the government to standardize cloud computing market, and (b) awareness – how a person understands other person's activity, which provide a context for his own activities.

Few research studies focused on studying the association between cloud computing and its profit to the organization. For example a study conducted by Anupama and Banerjee (2010) revealed that the organizations are very much benefited through the implementation of cloud computing. It is found that the entire process gets faster by attaining the targets on time. The utility of cloud computing is very high in IT companies. The major users of the firm were sales and project team.

Microsoft upgraded windows into cloud-based service. Microsoft Azure is categorized into eighteen products with an objective to render public cloud computing services. Azure is either used as an alternate data center or to prevent backup data files in the organization. It is operated globally in 140 countries. It offers 'pay-as-you-go' model which means the end users should pay as per their usage (Cloudelicious, 2018).

With regard to educational institutions, 'cloud computing' services are brand new. Sultan (2011) conveyed that the higher educational institutions should adopt cloud computing services which would be beneficial for the stake holders such as faculty members, researchers, and students. With the same view point, Vishwakarma and Narayanan (2012) concluded that these services would facilitate distance and online education system. Later on, 'educational cloud infrastructure' emerged which is an interesting concept that serves students' and researchers' to a greater extent. Many organizations have also adopted educational cloud to fulfill the requirements of research and development team.

Presently, advanced technologies led to growth in cloud computing. However, till date no researcher has derived the exact definition for cloud computing. This could be considered in further research studies. Based on the reviews in this paper, it is concluded that both the organizations and service providers are benefitted through this service globally.

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