Increased MSME and Global Entrepreneurship Due to Cloud Computing

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Abstract

There has been a significant increase in the number of medium, small and micro scale enterprises (MSME) around the world which has helped young entrepreneurs to build small scale businesses. Cloud computing has been one of the primary enablers of the same because of the multi-tenant, ubiquitous, on demand computing services it provides. Cloud computing is a computational model where users are provided with on demand computational services through the Internet by the Cloud Service Providers (CSP). Cloud computing requires data to be resided on remote servers that can be accessed as per the user requirements. It eliminates the need to develop or build on premise infrastructure as through its various service models, it can deliver software, hardware, databases, and data over the Internet with a minimal rental charges. Small and medium scale enterprises have gained and are gaining from this model as it frees them from unnecessary computational complexities and helps them in concentrating in their businesses. It has also served as a profitable and viable business model for service based IT industries as a piece of software that is hosted on the cloud can be used by a number of clients, giving rise to the MSME industry.

Keywords: Cloud Computing, MSME, SaaS, Entrepreneurship.

1. Introduction

Cloud computing is a new dimension in the modern era computing and Internet as it helps in delivering resources like software, hardware, processors, storage capacity etc.
Cloud computing is a better way to handle business processes because the organizations are asked to pay only for what they use. Using the various cloud service models viz. Software as a Service, Platform as a Service and Infrastructure as a Service; cloud service providers can deliver various kinds of computing resources to the clients, without their explicit involvement in maintaining the underlying infrastructure. Typically, a cloud appears to be a complete black box to the users and there is a high level of functional abstraction in the functioning of cloud computing. The primary advantage of this abstract infrastructure is that the users are now free of the complexities associated with building the systems as it is the responsibility of the CSPs to deliver and maintain the services.

This advantages and services of cloud computing soon made it favorite for the small and medium scale enterprises (SME). In any country, SMEs form the backbone of the country’s economic development. From the current Indian scenario, SMEs contribute the Nation’s economy by 45% of the industrial output, 40% of exports, 42 million in employment, create one million jobs every year and produces more than 8000 quality products for the Indian and international markets [1]. As a result, SMEs are today exposed to greater opportunities for expansion and diversification across the sectors. Thus is clear that Small and Medium scale industries form a major economic part of a growing developing nation like India. Moreover, growing SME industry can eventually create huge number of job for upcoming bright young professionals and it can develop a platform for them to start with. As more and more such industries come up, it can significantly reduce the problem of unemployment, especially for a country like India.

Despite their high enthusiasm and inherent capabilities to grow, SMEs are also facing a number of problems like sub-optimal scale of operation, technological obsolescence, supply chain inefficiencies, increasing domestic and global competition, fund shortages, change in manufacturing strategies and turbulent and uncertain market scenario [1]. To survive with such issues and compete with large and global enterprises, SMEs need to adopt innovative approaches in their operations. In this scenario, cloud computing can be adopted as an advanced computational business model that meets the technological aspects of the SMEs as this provides a leased basis computational services as per requirements.

In this paper, we are basically going to discuss the advantages gained out of the adoption of cloud computing for MSME industries and provide some statistical evidences for some SMEs that have gained from it. In section 2, we discuss the importance of cloud computing in terms of small and medium scale industries. Further we discussed how this has been already adopted in some of the countries and have significantly gained technological advancements. Finally, we show the survey conducted on a small sample of new Entrepreneurs about what and how they feel about cloud computing.
2. Importance of Cloud Computing

The term ‘cloud computing’ appears to be a different thing to different people. But regardless of the terminologies, in simple terms, Cloud computing can be termed as the computing model where computing services are delivered over the Internet. The notion of cloud computing has various advantages that can leverage the operational power of SME industries and this can significantly help new business to come up. The most important advantage one can think of is that in cloud computing, the user is free from all the overhead in having an on-premise computational system. The system is hosted somewhere remotely from the client. The user can have access to that system over an Internet connection on a paid basis and as per their needs. This eventually leads to a number of important features and advantages which are listed below [2]—

- **Lower Cost**: Implementing the cloud technology helps the organization to reduce its infrastructural expenditure as now it will not have to set up its own extended physical infrastructure, because the cloud offers Infrastructure as a Service (IaaS) that include resources like hardware, processors, databases etc. This significantly reduces the labor cost as it is not mandatory to have a huge number of manpower to maintain the setup. It requires only a few people capable of handling the applications and to co-ordinate with the cloud managers.

- **Effective Disaster Recovery**: An organization needs to design and develop its own disaster recovery strategies as a part of data security. But when the organization has adopted cloud, data security is reserved under the responsibility of the cloud service providers as part of their terms and conditions. The disaster recovery services provided by the cloud will be more secure and automated which basically simplifies the task to be performed by the organization.

- **Highly Scalable**: When there is a sudden increase in the requirements, the organization needs to adjust itself according to the demands. This procedure will be simplified by hosting the company's application on the cloud infrastructure. So whenever demand increases, the organization has to only request for the extra resources that are necessary. The required resources may comprise of computing facilities such as storage, software, hardware, processing power etc.

- **High Mobility**: Adopting the cloud technology helps the organization to develop a mobile environment for itself. The employees of the organization need not chain themselves to their desk, but instead they can gain access to information from any location and at any point of time as long as they have access to the internet. This serves as one of the major plus points to the organization's growth as the employees can view and edit the documents simultaneously and irrespective of location.

- **Increased Storage**: Cloud storage means storing the data in a remote server and the management of the server is handled by the cloud service provider. The cloud computing technology facilitates the organization to achieve larger
storage areas as compared to the storage areas available in private computer systems. There is also a provision for the organization to adjust itself to the altering storage requirements. Therefore cloud storage is very user friendly and flexible as it can be accessed from anywhere and anytime.

- **Highly Automated Services:** Cloud technologies provide automated services that allow the organization to shift their focus on other important issues as they no longer need to update the software themselves. The responsibility of performing crucial tasks like server update and software updates are to be under taken by the service providers.

- **Increased Efficiency:** Finally, all the above advantages make the functioning and operations of an organization highly efficient and effective in their business models. As cloud services can provided with many of its service models, organizations can opt for the services as per their requirement. On one hand, it eliminates the unnecessary complexities of maintaining systems and on the other hand, it can take all the technical advantages due to the leased scheme.

### 3. Cloud and SME

Online technology services help aspiring SMEs enter the big leagues. The right technology is important for any business to out front in its competition and boost productivity, efficiency and innovation. However, SMEs have traditionally been limited in their ability to access the right systems – mainly due to high technology costs, lack of IT support, and changing usage models. With the invention of cloud computing, most of these technological issues and challenges have been mitigated to a large extent. With its various service models, it lets SMEs access business applications over the Internet, as and when they need it. These applications and data are hosted from the service provider’s data centre, meaning that SMEs have zero upfront investments, with access to advanced IT services on a subscription basis. Many of the SMEs who are previously limited by access to technology have gained enormously due to this. Compared to an onsite IT deployment, this one-stop service helps an organization fulfill their communication and collaboration requirements without worrying about ongoing maintenance and software updates. This significantly reduces the time from having to deal with different systems and vendors and thus increasing the productivity and efficiency.

Freedom of choice of online service deployment is certainly essential for any business to grow and with MSME industries in concern, it is better to be the same. Based on a survey conducted on SME industry in Ireland in 2012 [3], it is evident that organizations want a simplified IT solutions to their problem without agreeing in taking the associated complexities. Cloud based industries can definitely be on an upper hand in this, as the organization leveraging cloud services can gain significantly in terms of productivity and efficiency. Apart from this, as organizations now do not require much concentration on their IT requirements, they can expand their business that can eventually create job prospects and employability.
Apart from all the advantages cloud provides, one reason that is restricting organizations to adopt the technology is due the security concerns [4]. Findings from an August 2010 Springboard study of 74 companies in Singapore show that 55 per cent of respondents indicated they were currently on the cloud or had plans to do so. However, some SMEs are hesitant because they are unsure if information passing through the cloud is secure. As in the cloud computing domain, all the data resides in some remote servers, data security poses a serious challenge that can eventually reduce all the aforementioned gaining that an organization can leverage. But researchers and cloud service providers have understood the significant challenges well in advance and have taken various security measures to provide security and privacy to user data. Moreover, they are required to follow various security guidelines and meet with certain compliance regulations to ensure data security on the cloud.

4. Current Scenario of Cloud Based SME Around the World

There is a large number of SMEs around the World have understood the importance of cloud computing and have successfully opted to gain the advantages in their businesses. According to a recent research conducted by Sage Ireland [3], 22% of small and medium-sized enterprises (SMEs) in Ireland are already using cloud technology and further 16% have plans to adopt cloud computing in their businesses. Almost same results follows in Singapore also where 55% of SMEs, which actually constitutes about 50% of total companies have gone for cloud computing. The best impact of cloud computing on SMEs is cited in where more than 60% of the SME industries have already adopted cloud technologies for their operations and various IT related services.

SME industry in India is the highest growing among all the SMEs in Asia; the scenario is quite similar but the speed of adoption of cloud quite slow. According the Software giant Microsoft, Leveraging latest IT tools and techniques can help India's small businesses boost revenues by USD 56 billion and help create over a million jobs. According to the government data, micro, small and medium enterprises employ about 59.7 million persons spread over 26.1 million enterprises. In value terms, MSMEs accounts for about 45 percent of the manufacturing output and around 40 percent of the total export of the country. BCG, a consulting firm for Microsoft, surveyed Brazil, India, China, Germany and the US and found SME revenue could grow by a combined USD 770 billion in these five primary countries if more SMEs could achieve the growth rates of those SMEs that use modern IT tools [5].

It has been observed that uses of Internet among the SMEs have steadily grown during the last ten years, though the percentage of Internet access is very low as compared to the total SMEs. BCG surveyed 4,000 SMEs in five countries, which included 750 surveyed in India, during July 2013. The research revealed nearly 90 percent of SMEs in India have no access to the Internet, compared with only 22 percent of SMEs in China and 5 percent of SMEs in the US. Figure-1 [6] depicts the scenario of Internet usage by the SMEs.
5. Our Survey Based Results
As a part of our project work to deploy cloud services for SMEs in Indore, India, we started our work with a survey that was conducted on service based IT startup companies in Indore, Bhopal, and Dewas districts of Madhya Pradesh, India. We reached about 50 such small scale development organizations and have enquired about their requirements, their strategies, their functioning schemes and whether they have anything about cloud to say. As was expected, the survey revealed that almost 42% are completely relying on cloud based technologies (SaaS in particular) for their development environment. 29% are hosting their web based applications using IaaS and SaaS, 16% are partially using SaaS for their various web based related projects, 5% are using PaaS (Ubuntu-One in particular) and the rest of them have already planned to implement cloud technologies to deploy.

6. Conclusion
Cloud computing is considered to be the biggest innovative technology paradigm. With most of the organizations considering cloud opportunity, it is no more a buzz work. With almost everyone, irrespective of the size of the organization, evaluating the cloud adoption is seen as a definite component of the strategy and planning. Cloud solution is an appropriate platform with respect to computation, data storage, processing and handling and information system management, especially for MSME industry and for young Entrepreneurs having limited IT budget with the efficiency and customer response factor is ever growing. MSMEs are constantly expanding in business and reach. With the cloud computing technologies, enterprises can now smoothly address growth plans without any hesitation.

References
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