Cloud Computing Adoption and Impact in Emerging Market

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Abstract

Cloud computing is a buzz word in the recent few years, which provides paradigm shift from computation as a product to a computation as a service. Instead of purchasing costly software and hardware which requires installation, maintenance and configuration, the cloud computing provides the usage of cloud application and infrastructure based on pay per usage scheme. In the emerging markets with large population, Entrepreneurs, Universities do not have mass computation power to run their application and to meet the changing requirements. Thus cloud computing offers infrastructure and advanced IT applications to meet the rapid changing requirement in the IT requirement. The tremendous opportunities and challenges in the area of cloud computing and its impacts in the growing economics.

Keywords: *Emerging Markets, Economy, Cloud Computing*

Introduction:

World's major economics are slowing down, sign layoffs, delayed investment a recession shows that the future is uncertain from the economics point of view. Customers are expecting for value for their money in terms of computations. In the recent years global and ambitious multinational companies are looking for more opportunities in the emerging economics in the emerging economics as compared to developed nations. According to study conducted by custom research in Brazil, China, Germany, India, UK and the US, affinity with cloud services is especially high in emerging markets. Multinational companies have already shown their presences in emerging economics with their data centers. Cloud computation in developing economics with large populations shows more impact in the sector of egoverence,education,social networking where more data storage and computation power required .The major importance is given in these economics to reduce the infrastructure cost .

There are few challenges need to be addressed effectively in these economics. In developing countries, poor broadband connectivity is the major concern to access the applications from remote locations, as cloud services demands better broadband connectivity to run their applications. The majority of businesses in emerging markets are still quite hesitant when it comes to moving their organizational processes to the cloud because companies and their IT departments are hesitant to leave the legacy paradigm of their current infrastructure. Another major challenge is security, many

organizations are concerned about the security of their confidential and valuable data. Educating the staff in the organization about the cloud computing is also important to get benefit of the cloud computing. To successfully use and benefit from cloud computing, an enterprise must prepare them strategically, culturally, and organizationally, taking a prospective view of cloud computing.

Literature Review:

- According to John P Veigas, Nitesh Naik & K Chandrasekhar Cloud computing is a buzz word in the recent few years, which provides paradigm shift from computation as a product to a computation as a service. Instead of purchasing costly software and hardware which requires installation, maintenance and configuration, the cloud computing provides the usage of cloud application and infrastructure based on pay per usage scheme.

- Jay dip sen recognized that Cloud computing transforms the way information technology is consumed and managed ,promising improved cost efficiencies, accelerated innovation, faster time to market, and the ability to scale applications on demand.

- Shyam Kumar Doddayula and Amit Wasudeo Gawande analyzed that In the current economic climate where the expectations of efficiencies and cost savings are growing from IT organizations, enterprise private clouds provide a good opportunity to get started with cloud computing.

- Kunal Sharma, Susheel Thakur, Arvind Kalia recognized that Cloud computing has recently emerged as a new paradigm for hosting and delivering utility-oriented IT services to users over the Internet. Cloud Computing has emerged as rapidly developing paradigm for managing and delivering IT services over the Internet.

- Ezer Osei Yeboah-Boateng, Kofi Asare Essandoh explained that Cloud computing services are being touted as a major enabler for small businesses lately. This new paradigm is seen to offer unique opportunities to small and medium enterprises (SMEs) worldwide and developing economies are no exception.

Objectives:

- To understand the concept adoption of cloud computing.
- To analyze adoption of cloud computing impact on emerging market.

A Survey of cloud computing adoption in Emerging Markets

Cloud computing has been a major focus in business and government agencies in the major developing economices.These are some of the innovations and experiences of major industrialist and its contribution in the emerging markets. Study by the research firm International Data Corporation suggested that developing markets such as India, Brazil, Russia and China are the important market forces to drive the global shift toward the cloud computing. In the following sections, we provide a brief survey of cloud computing in the six emerging markets: India, China, Russia, Brazil, South Africa and South Korea.

A. **Cloud Computing Adoption in India:**

India is an emerging market in adopting IT infrastructure. India and other emerging markets are proceeding towards adopting cloud operations to overcome their old infrastructure used in their existing business applications. One of the biggest opportunities will be in mobile services. Carriers will increasingly use clouds to develop innovative new services, launch them, and cloud computing adoption and impact in emerging markets.

B. **Cloud Computing Adoption in China:**

The People Republic china as world's second largest economy after United States. It has been the fastest major growing economy with consistence growth of 10 percent over the thirty years. In china, cloud computing is and will continue as an emerging technology for the future. The Chinese government is making large investments in cloud initiatives, with an investment planned for the development of key cloud computing hubs.

C. **Cloud Computing Adoption in Brazil :**

Brazil's population is currently just over 200 million, making it the fifth largest country on the planet. The potential market for cloud in Brazil is huge and it is growing rapidly. Outsourcing is a key component of Brazil's IT market.JDJ's Christian Gallegos published an article on cloud computing in Brazil, stating an estimated IT outsourcing figure in Latin America of around USD$9 billion market. In the next five years, the most important applications from Brazilian big companies will be based on Public Cloud but it is very possible that in ten years data centre will not be part of the assets of the companies as probably, everybody will be based in the public cloud.

D. **Cloud Computing Adoption in Russia:**

The cloud computing scenario in Russia is emerging as a growing trend in cloud computing applications. As per the CEO of consulting firm Hyper Stratus.Bemard Golden, the data centre infrastructures receive new pressures, cloud telephony and technology will begin to play a larger role in Russia's participation in cloud –based voice and web industries.

E. Cloud Computing Adoption in South Africa:

Cloud computing is making headlines and South African businesses and organizations are starting to look for ways to integrate it into their operations. Part of this recent growth in interest could be attributed to its cost effectiveness in that application development, maintenance, data storage and IT infrastructure in the cloud are in the hands of the third party service providers and the service is completed scalable according to an organization's needs

One of the main concerns raised about migrating to the cloud is data security.

F. Cloud Computing Adoption in South Korea:

Government and large corporation adoption is driving cloud computing closer to the mainstream in South Korea. As in other countries, companies in Korea are looking to cut down on expenditures and will seek to leverage opportunities and will seek to leverage opportunities provided by new communication technologies such as cloud computing. However, according to the Korea Times many companies are concemed with the security of the cloud. The country already has a somewhat shaky security environment as a result of widespread distributed denial of service attack that crippled over 80000 computers last year.

Analysis of Our Study:

As explained in the above section, we present in brief the following analysis of our study. We observed that the BRICSS nations are spending huge amount for public cloud computing.
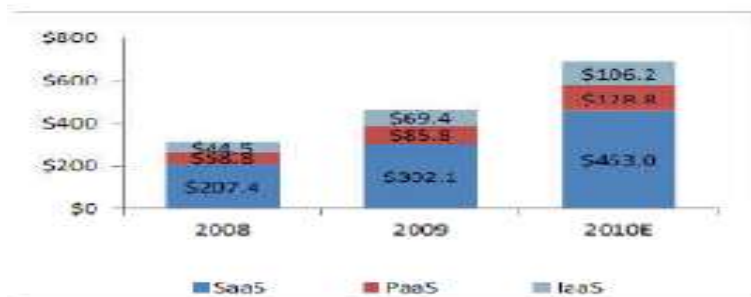

Fig. 1: Evolution of Public Cloud Spending (US$

The following are few major projects in the public sectors in the BRICSS Nations:

A. In India:

- Huge investments in e-governance initiatives in India administrators in India are trying to implement cloud computing in e-goverence.
- Government is making headway into the cloud computing space by conducting various awareness programs for IT departments.
- UID Authority is creating platform onto which they would like to get solution providers and start-ups.

B. In China:

- Stimulus package of US$39 billion to positively impact the IT spending of various industry verticals.
- Specific focus on cloud computing in the 12th five year plan.
- E-goverence spending on a fast pace in China with astrong focus on cloud; 12 large golden shine projects towards e-goverence initiatives.

C.In Russia:

- Government is trying to diversify the Russian economy by reducing its dependence on oil and gas exports.
- It has made developing hi-tech sectors and encouraging research the focal point of the economics agenda.
- Government is currently developing a modern centre for R&D near Moscow and the first innovation project is cloud computing based projects worth US $29 million.

D.In Brazil:

o Huge investments in the national broadband plan to triple access to broadband services by 2014.
- Similar to India's UID project, the government of Brazil has a civil digital identification project with projected investments of approximatelyUS$800mn.
- As a part of its ongoing Growth Acceleration Plan science and technology with focus on cloud computing.

E.In South Africa:

o Starting to consider projects involving cloud computing technology by hosting services online.
o IT is moving from paper based ledgers to state of the art systems.
o Advanced public service agencies such as SARS are running.

G.In South Korea:

- The Korean government is currently working on a smart initiative that aims to use the cloud as well as advances of digital equipment and wireless technology to allow government employees to work from anywhere.

- The goal is to have around 30 percent of public employees work from home or nearby smart works centers by 2015.

Adopting Parameters of cloud computing in emerging economies

In our evaluation based on the above analysis on the impact of cloud computing we have been emphasized on the following Parameters:

A. Economics:

The major benefit of cloud computing is in indirectly through its impact on the growth of gross domestic product. Greater GDP is associated with increased income, poverty reduction, increased income, poverty reduction, increased employment, and increased life expectancy.

B. Social Impact:

Any individual can use computing with minimal initial investment with only basic computer configuration which is free from others interference

C. Agility:

Business agility is the ability of a business to adapt rapidly and cost-efficiently in response to changes in the business environment.

D. Job Creation:

In the developing countries, there is a huge population, the adoption of cloud computing may   lead to number of new jobs.

E. Software Piracy Reduction:

  Adoption of cloud computing may reduce the software piracy. Many organizations were   finding it as difficult, by the introduction of cloud computing which requires vey less software at the user side will definitely.

Cloud Computing Impacts on Emerging Markets:

While cloud computing1 is still emerging as a computing style, it has already begun changing how IT delivers economic value to countries, industries, and businesses. Adoption of cloud technologies is as disruptive for existing IT approaches as it is for business and existing revenue models. In some ways,

it's the climate change of business opportunity: Cloud will cause the melting of barriers to IT innovation and adoption, which will cause extreme and unpredictable competition that, comes from agility, and will also likely result in the rising sea level of business value and opportunity.

This research expands that analysis to estimate the impact of cloud computing on the internal IT organization. This white paper, commissioned by Microsoft, examines the impact cloud computing will have on IT employment around the world. It follows on research IDC has conducted on the economic impact of cloud computing since 2009 and the economic impact of IT since 2002.

Economic Impact of Cloud Computing — Jobs:

Cloud computing comes in many forms, from the use of third-party resources to store data, called the "public cloud," to delivery of IT services within an enterprise based on virtualized infrastructure, self-configuration, and automated provisioning, called the "private cloud." Cloud computing also comes in a wide range of "hybrid" offerings. The use of the term "cloud" in this paper refers to public, private, and hybrid clouds. Cloud-related employment or skills refers to advanced or specialized skills supporting all cloud offerings and the key technologies that enable cloud infrastructure.

The primary benefit of cloud is that it frees up resources for enterprises to use in other ways and lowers the cost of many IT functions. When properly applied, a relatively small investment in innovative, flexible, and aligned IT spending "in the cloud" can be leveraged into a significant return in business revenue.

Impact on IT Organizations:

Most agree that cloud computing could become the key delivery model for computing by 2030. In this research, we found that more than half of enterprises worldwide felt "cloud computing" was a high IT priority. Additionally, almost two-thirds of enterprises are planning, implementing, or using cloud computing in some fashion. However, more than three-quarters of enterprises have security, access, or data control concerns with the public or private implementation of cloud computing.

We also found that nearly every IT organization is seeking some type of cloud-enabling capability virtualization, performance monitoring, service management, provisioning, performance optimization, or automation — yet IT hiring managers' report that the biggest reason they fail to fill open requisitions for cloud-related IT jobs is the candidates' lack of sufficient experience, training, or certification. Simply put, the workforce isn't ready.

Cloud computing is a complex environment with a variety of enabling technologies. Most organizations will need technical proficiency and even expert proficiency in a wide range of these technologies to be successful. However, cloud computing is more than simply a technical paradigm: At its most beneficial, cloud computing reflects a fundamental shift in the relationship between the business and the consumption of IT.

Research Methodology:

This is conceptual study which critically examines the cloud computing adoption impact on emerging markets. Secondary data was collected for the study. In this paper we analyzed the cloud computing impact on Emerging Markets.

Conclusion:

With respect to the potential and impact of cloud computing in the developing world, however the findings and conclusions drawn from surveys, studies and experience of companies specifies that developing markets such as Brazil, Russia, India China, South Africa and South Korea have the greatest potential in the mid to long term for cloud related services.

The survey conducted in this paper indicates the parameters associated in the field of cloud computing for the developing countries and their impact of adopting cloud related services in their emerging markets stating the requirements for future development of these countries.

The impact of cloud computing has affected the entire economy of these developing countries giving rise to their growth in commercial as well as noncommercial.

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