Implementing Cloud Computing for the Development of Business Enterprise

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Abstract—This paper is based on uses of cloud computing for the expansion and development of business enterprises. It also focuses on the business models of cloud computing and its services that appropriate with customers needs in developing businesses. This research is carried out to find the most popular cloud services in developing business enterprises. In today's business world with the amount of economic downturn and loss happening every day, the need for reliable, yet affordable technology is needed more than ever; cloud computing fills that void. Cloud computing offers its customer's reliable service at flexible prices that do not break the bank

Based on the literature review, this paper discussed how the traditional E-commerce businesses and industry were influenced by cloud computing in technical architecture, service modes and the industrial chain. Besides, it analyzed the driving-forces which led to the changes of E-commerce in cloud era. Finally, it concluded that only when the E-commerce enterprises involved cloud computing in the business strategy and established the core competencies, could they realize the sustainable development in the cloud era.

Keyword—*Cloud Computing, Implementation, advantages, disadvantages and Business enterprise*

1. INTRODUCTION:

Cloud computing is a resource that is available to help business enterprises to meet their needs and accomplish their goals. Especially in small businesses, cloud computing is an excellent technological tool that can benefit the business. All businesses need to respond to competition by making better use of Internet services and offering more incentives than their competitors. Cloud computing can help business shift their focus to developing good business applications that will bring true business value.

Instead of running the applications on a PC or a LAN, they run on a shared multi-tenant. It is self-service oriented; to use any application that runs in the cloud, just logged in, customize it according to the customer need, and start using it. More Businesses are running all kinds of applications in the cloud nowadays, like CRM, accounting, HR, and custom-built applications. Cloud-based applications cost less, since the customer doesn't need to pay for all the hardware and software, facilities, or extensive configuration and maintenance of a full technology stack, to run them. Cloud provides more scalable, more reliable and more secure service. And over, upgrades are periodically completed by cloud providers to facilitate new features, security, performance enhancements automatically. Cloud technology follows pay-as-you go model. Finally, cloud applications and Adaptation of Cloud Technology, doesn't eat up the valuable IT resources of any company. And adopting Cloud, allows the customer to focus on deploying more applications, new projects, and innovation. Cloud computing is a modest idea, but it can have a huge impact on any business. This paper will discuss the use of cloud computing and how cloud computing technology focuses on delivering true value to the business.

II. OBJECTIVES OF THE STUDY

1. To find how cloud computing technology helps to develop business enterprises.

2. To study the different models which we can implement in our business.

3. To study issues of current business models and advantages of cloud computing technology over existing business models.

4. To find implementation of possible cloud computing models and use of technology towards improvement of business enterprises.

Research Methodology

This research is based on secondary data that has been collected by referring various research articles, books & websites. The collective data has been analyzed, compiled & then the outcome of all these are presented in this research article.

What is cloud computing?

Cloud computing takes the technology, services, and applications that are similar to those on the internet and turns them into self-service utility. The use of word cloud makes reference to two essential concepts.

Abstraction: Cloud computing abstracts the details of system implementation from users & developers. Applications run on physical systems that aren't specified, data is stored in location that are unknown, administrations of the system is outsourced to others and access by the users is ubiquitous.

Virtualization: cloud computing virtualizes systems by pooling and sharing resources. System and storage can be

provisioned as needed from a centralized infrastructure, costs are assessed on a metered basis, multi-tenancy is enabled and resources are scalable with agility.

Cloud Computing provides environments to enable resource sharing in terms of scalable infrastructures, middleware and application development platforms, and value-added business applications.

- Infrastructure resources

- Software resources

- Application resources

- Business processes

Characteristics of Cloud Technology

The characteristics of cloud technology are as follows

1. On-Demand Self Service: A customer can avail any contracted computing resource such as processing power, storage space, or application programs from a service provider without human interaction.

2. Broad Network Access: The computing resources can be accessed anywhere, anytime with any standard device which can access the web.

3. Resource Pooling: The computing resources of a provider are assembled to provide the confined service. The pooled resources may be geographically spread across multiple data centers. The computing resources of a provider are shared by several customers. The resources are dynamically assigned to customers depending on the demand.

4. Rapid Elasticity: Computing resources may be availed elastically by customers. A customer may request more resources when needed and release them when not required. From a customer's point of view the resources are unlimited. The customer pays only for the total resources used.

5. Measured Service: Cloud computing systems are adaptive systems. They automatically balance loads and optimize the use of resources. A user is permitted to monitor and control resource usage, thereby providing transparency in bills.

Cloud Technology Service Models

There are three basic categories of cloud service models are used. They are as follows

1. Software-as-a-Service (SaaS): Instead of installing software on the client's machine and updating it with regular patches, frequent version upgrades etc., applications like Word processing, CRM (Customer Relationship Management), ERP (Enterprise Resource Planning) are made available (hosted) over the internet for the consumption of the end-user.

2. Platform-as-a-Service (PaaS): Instead of buying the software licenses for platforms like operating systems, databases and middleware, these platforms and the software development kits (SDKs) and tools (like Java, .NET, Python, Ruby on Rails) are made available over the Internet.

3. Infrastructure-as-a-Service (IaaS): This refers to the tangible physical devices (raw computing) like virtual computers, servers, storage devices, network transfer, which are physically located in one central place (data center) but they can be accessed and used over the internet using the login authentication systems and passwords from any dumb terminal or device.

VII. CLOUD DEPLOYMENT MODELS

Cloud service deployment can be in any one of the following

1. Public Cloud: It is available from a third party service provider through the Internet and is very cost effective for SMBs to deploy IT solutions. For example, Google Apps.

2. Private Cloud: It is managed within an organization and is suitable for large enterprises (managed within the walls of the enterprises).

3. Community Cloud: It is used and controlled by a group of enterprises, which have shared interests.

4. Hybrid Cloud: It is a combination of public and private cloud.

Advantages of Cloud Computing

1. Flexibility: Cloud-based services can rapidly meet the business demand of any organization by providing various services.

2. No Up-Front Cost: Cloud computing services are typically pay-as-you-go, so there's no need for upfront cost of infrastructure. Since cloud computing is much faster to deploy, businesses (SMEs) have marginal project start-up costs and expectable ongoing operating expenses. It dramatically lowers the cost of entry for smaller firms trying to benefit from compute-intensive business analytics that were hither to available only to the largest of corporations.

3. Cloud computing can lower IT barriers to innovation, as can be witnessed from the many promising startups, from the ubiquitous online applications such as Facebook and Youtube to the more focused applications like TripIt (for managing one's travel) or Mint (for managing one's personal finances).

4. Increased collaboration: Cloud computing upsurges collaboration by allowing all employees to synchronize up and work on documents and shared applications simultaneously from their own place. It even allows them to follow colleagues and records to receive critical updates in real time.

5. Automatic software updates: Cloud service providers do the server maintenance including software upgrades, security updates, freeing up their customers' time and resources for different other tasks.

6. Document control: If a company doesn't use the cloud, workers have to send files from side to side over email. This means only one person can work on a file at a time and the same document will be duplicated in millions of formats and names.

7. Security: Businesses storing everything in the cloud, can access the data even anything happened to the machine.

8. Work from anywhere: Cloud computing allows employees to work from anywhere. This elasticity positively affects knowledge workers' work-life balance and productivity.

9. Environmentally friendly: Businesses adopting cloud computing uses only the server space they needed, so it decreases their carbon footprint and saves the environment.

10. Disaster recovery: When companies start trusting on cloud-based services, they need not have to device complex disaster recovery plans, because cloud service providers take care of most issues in a very fast manner.

11. Competitiveness: The cloud technologies grant SMEs access to enterprise-class technology by providing various ERP solutions. It also allows small and medium businesses to act faster than established, big competitors.

Limitations of Cloud Technology

Even cloud technology has several advantages, the organization adopting cloud has to keep aware of following limitations.

1. Failure of communication will cut off a cloud service.

2. Sending data on a publicly accessible communication system have the danger of eaves droppers tapping the communication line and stealing or corrupting data or stealing it from disk storage.

3. Deterioration of the quality of service of a cloud provider or a provider ceasing operations due to bankruptcy.

4. Complex legal problems may arise if providers' servers are in a foreign country and an organization's program and data are corrupted or stolen. An organization must clarify what laws apply while signing the Service Level Agreement with a cloud services provider.

5. A recent problem is the clandestine surveillance of data traffic on the Internet by the intelligence agencies of UK and USA. As cloud providers' infrastructure is spread throughout the world, so it may not be wise to use those services, particularly if the data to be processed or the program is sensitive.

Cloud Technology in Business Organization

The concept of cloud computing in business may sound ideal and easy to implement, but like all new technology being introduced into a business that already has a system and method in place it has both positive and negative aspects. As previously mentioned, cloud computing has both benefits and drawbacks, however it is vital to examine if these benefits and drawbacks are beneficial or detrimental to businesses when deciding whether or not to implement cloud computing. Although cloud computing has been recognized as a way to improve business, not all businesses are the same. There are some major consequences of adopting cloud in Business. They are Ease of use and convenience, Cost reduction, Reliability, Security and privacy, and

Sharing and collaboration. The literature support of these impacts is summarized below.

1.Ease of use and convenience: Small business employees often work outside the actual office location and hence having easy access to their data (using their mobile devices) is a big Plus. This need for employees to have access from remote locations as well as the increasing number of online transactions necessitates a cloud computing solution.

2. Cost reduction: Due to the subscription model, there is a huge cost savings for small firms. The access cost for small firms utilizing business analytics and intelligence, which needs lots of computing power consumption, has been lowered.

3. Reliability: Since the cloud is available round the clock, it is more reliable. Employees can even call up the cloud center (if needed) instead of depending on the in-house IT staff. Data redundancy is built-in by cloud storage solutions so that the files are always obtainable, even in times of network downtime, power failures, etc.

4. Security and Privacy: Organizations talking about cloud security are actually more concerned about having their own control (something like a private cloud) than any other serious issue. Cloud security is good, as risks get minimized due to authentication and encryption. Security is heightened by, for example, monitoring activities, tracking transactions, providing selective access to users, and utilizing strong password.

5. Sharing and collaboration: With the proliferation of social media and smart phones (mobile devices), startups and small companies have improved collaboration within their companies. Cloud file storage allows various SMBs stakeholders to share information and data (via emails, shared web-links, IM-instant messengers), store and retrieve information with each other.

X. Conclusion

Cloud computing is definitely making effect with micro as well as SMBs or SMEs and is slowly sneaking into their business strategy formulation and accomplishment now and in the near future. SMEs or SMBs are not insecure to integrate cloud into their business strategy in-spite of the few concerns being cited by industry specialists. As per this research review, the convenience and ease of use is the impact cited by SMEs to espouse cloud. The second impact to use and support Cloud Technology is privacy and improved security. The third impact for practicing and taking up of cloud is cost reduction. This means that SMBs or SMEs find the cloud easy to use, convenient, sufficiently secured for their business, their business privacy is well protected and lastly but not the least is that the Cloud helps SMEs to depose their cost in a significant way. The fourth impact, reliability is not an important factor for SMEs to adopt and use cloud technology. SMEs are concerned about cloud downtime and rely more on their physical devices

within their physical proximity for backup, storage etc. The fifth and the last impact is sharing and collaboration which indicates that SMEs have a higher need for sharing and collaboration, instead of preferring face to face meetings, phone calls, business travel, possessing physical devices etc. for their business needs, can go for cloud, since cloud provides the same effect in less cost. Making use of cloud computing correctly and efficiently in a business can not only increase profits for a company by allowing fewer employees to work remotely, but it can also increase the productivity of a company. Employees no longer need to wait for its members to gather to work on a single project, rather they can commute to the cloud via the Internet to work from wherever, whenever while still remaining up to date with their project partners. As more and more companies turn to cloud computing to save money and to increase business value. Cloud computing offers its customers the services it needs to be successful, innovative, and in step with their competition.

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