

The Impact of Cloud Computing on Saudi Organizations: The Case of a Telecom Company

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Abstract

The concept of cloud computing is viewed as a source of development for the better delivery of services and information exchange. Cloud computing has attracted substantial attention for its efficiency and effectiveness in services and better processes. The evolution of clouding has brought new opportunities for organizations. However, lack of knowledge of clouding impacts on enterprises often hinders chances to success. It has been reported that cloud computing research is still in its infancy; hence, many concerns related to its reliability and effectiveness are raised. This research investigates cloud computing impact in Saudi Telecom Company, in Saudi Arabia. The research studies a wide range of benefits provided by cloud computing that have a positive impact on enterprises. This research helps to bridge the current literature gap and provides practical suggestions for both researchers and practitioners.

Keywords: Cloud Computing , Enterprises, Impact of Cloud Computing.

Introduction

Cloud Computing is one of the emerging paradigm that represents a shift in the delivery architecture of information services and drags a considerable amount of attention recently. It is a modern and new style to provide computing and related technical information [1].

There are many definitions of cloud computing depend on the international bodies that have adopted the cloud. Cloud computing refers to the delivery of computing resources over the Internet[1] . In addition, the National Institute of Standards and Technology (NIST) defines cloud computing as " a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage applications and services) that can be rapidly and released with minimal management effort or service provider interaction"[2].

Cloud services let individuals and businesses to utilize software and hardware at remote locations. These services provide access to computer resources and information from anyplace that offer a network connection. Cloud computing offers a lot of benefits for enterprises such as flexibility, reducing the cost of computing, speed and integration [3]. There are several types of cloud computing service models which are based on the nature of services offered to the consumers. Some of the well-defined categories are Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) [4].

In order to adopt and implement the concept of cloud computing, the advantages of cloud computing in enterprises should be considered. Our focus in this research is about the impact of cloud computing on enterprise. When it is more understandable for enterprises what the impact of cloud

computing is, they could make a more informed selection about using cloud computing for certain operations. This research draws on the extant literature on cloud computing. The purpose of the mixture of this literature is to advance our knowledge and understanding of clouding in enterprises. Furthermore, this research hopes to cover the lack of the researches in this area of research in order to enhance the understanding of clouding impacts on enterprises.

Literature Review

Cloud computing is a new technical innovation that represents "the virtualization of computer programs through an internet connection rather than installing applications on every computer" [6]. Vaquero et al. have stated "clouds are a large pool of easily usable and accessible virtualized resources (such as hardware, development platforms and/or services)"[7]. It is the next stage in the development of on-demand information technology services and products[8]. A number of ICT scientists stated that cloud computing began when large-scale mainframes connected and became available via the academic network[9]. Cloud computing offers many benefits and overcome on the challenges of IT infrastructure of traditional information technology, which can provides to IT customers by virtual environment for all information technology services such as office automation and file storage services and other services[10].

According to Armbrust et al. reducing implementation and maintenance costs are some of the main benefits of cloud computing, and also increasing the mobility for a globalization purpose , all these benefits provided with flexible and scalable infrastructure that's lead organization for shrink time to market, and IT department can focus on innovation not on maintenance and implementation[11]. On the other hand, cloud computing can offer end users advantages in terms of mobility and collaboration [12].

Furthermore, cloud computing services can eliminate the redundancy of implementing similar processes within large infrastructure by different departments by allowing resource sharing and facilitating collaboration among different institutions [13].

Cloud computing assists in IT agility by moving up and down rapidly to meet new requirements and needs. Cloud technologies facilitate creating applications quickly and configuring services . The cloud computing adaptation is attracting unprecedented attention due to the enormous business and technical advantages of cloud computing.

In 2012, Global Cloud Survey of 10,500 Nonprofits, Charities, and NGOs from 88 Countries on Barriers and Motivators in Cloud Computing found that lack of knowledge is the most important barrier to cloud computing implementation, cited by 60% of the global respondents as a major obstacle and by an additional 26% of respondents as a minor obstacle[14]. Moreover, a new research conducted by IDC (International Data Corporation) shows a complete view on the cloud services in Saudi Arabia, the research illustrating the market indication for cloud delivery models [15].

After understanding the vital impact of cloud computing on the business area, the enterprises will start to implement the cloud concept. This research aims to study the impacts of cloud computing in enterprises and to advance our knowledge and understanding of this area of research.

Research Methodology

In this research a qualitative method has been selected. Qualitative methods are used for gathering data, reviewing the literature and collect information about cloud computing adoption in enterprises and the issues related to it. As Dornyei explained, "Qualitative research aims to broaden

the repertoire of possible interpretations of human experience. Thus, the rich data obtained from the participants' experience can widen the scope of our understanding and can add data-driven depth to the analysis of a phenomenon"[5]. To obtain data, interviews were conducted with a number of participants in a Saudi Telecom Company to investigate participants' view on the impact of cloud computing on enterprises.

Telecommunication Background

Telecommunication Companies are one of the largest industries that have gone through many stages of growth and diversification and will definitely need to go through a lot more in the future. Telecom Companies needs large amount of physical computers and servers to install their software applications and programs, and this resulted in high cost investments. All the Telecom's software and hardware needs continues management, maintenance, update and in-need recovery [16]. This fast growth and strong needs let many telecommunication companies to find new ways for provide better services, cost reduction and other opportunities. One of these ways is adopting the cloud computing concept.

The author explored and examined the impact of cloud computing technology on one of the telecommunications company in Saudi Arabia. Examined company has made a strategic alliance with Virtustream which is enterprise-class cloud software and services provider. Based on this alliance, in 2013, examined company adopt and implement a new cloud computing targeting small and medium-sized enterprises (SMEs) in Saudi Arabia.

Examined company offers cloud computing services through secure, reliable, and fast network connections to the company data centers. Previous research in Saudi Arabia has revealed that information security and loss of control are viewed as one of the main obstacles toward cloud computing adoption. While adopting cloud computing, the examined company aimed to make their services more reliable, better performance and high security and control. Through there cloud services platform, the company offers their customers cost reduction on their IT infrastructure and resources, data storage and control and service accessibility anytime anywhere[17].

Discussion and Findings

Cloud computing is a recently developed computing area that has been implemented by a large number of enterprises in the world. It has gained enormous consideration and it is poised to be a noteworthy element in the technology market . A senior manager at the examined company said ".. Telecom companies and other domains must consider the cloud as an integral part of their strategies...". He also added " ..Implementing the technology within an organization leads to effective services". Likewise, a CEO at the examined company stated "..We applied the latest technologies like cloud computing and thus, gain a competitive advantage in the market. “

This research has analyzed the contributions on the use of cloud computing for any domain in which cloud offers characteristics that can be advantageous for enterprises. The CEO mentioned that "... The usage of cloud in our company leads to the optimization of resources and hides all the weaknesses of the traditional way that was used before implementing cloud. " In addition, he said " ..Efficiency, less administration efforts, scalability , and faster return of investment, all these can be achieved by cloud computing".

The cloud computing can also be useful for cost saving, the senior manager indicated that

"...Decreasing cost comes from sharing resources among different locations and unifying the management of hardware and software."

According to the participants, there is confusion in the market regarding the technologies including cloud computing. There are concerns about accessibility, security and privacy and operations monitoring. The CEO pointed that "...Protection of customers data is a key in the telecommunication and other sectors, and there is a special concern about how clouding deals with this matter." The participants argued that cloud computing can be more secure and effective than traditional distributed systems, as a senior manager said "...Companies should implement updated tools, procedures and technologies like clouding to protect their data."

Moreover, flexibility and scalability are major benefits of cloud computing which are afforded by virtualization, as the senior manager said "...Cloud computing is quite valuable for us as it provides flexibility and we can scale now to what we require." Therefore, cloud computing is an essential player that can't be ignored these days, the CEO indicated that "...Clouding is an important assets that must be in consideration, it is an area which is rising in significance." He further added "... Companies need to be up to date and they should improve their services in order to attain sustainable advantage, and implementing cloud will be the suitable step for them."

This research indicates that cloud computing adds new value to enterprises. All participants agreed that cloud computing provides enterprises with a tool for successfully competing in the market. Enterprises must innovate and get the most from their resources to achieve their goals and expectations. Further, cloud computing helps enterprises to get more efficient use of their hardware and software. These findings are also consistent with previous research [10],[11],[12],[13],[18]. Thus, cloud computing is a valuable element for enterprises and it has become a competitive need. There is a positive correlation between it and services efficiency.

Conclusion

This research discusses the impact of cloud computing on enterprises and aims to understand the expectation placed upon cloud computing. Cloud computing provides a wide range of benefits that have a positive impact on enterprises. The participants in the case study indicated that cloud computing is a focal element for enterprises in all domains and it leads to an effective use of software and hardware. Embracing cloud computing has become a fundamental for enterprises to remain competitive. It has been realized that an enterprise with cloud technologies can offer a number of key advantages and they are the actual contributions of cloud computing.

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