

Chapter 2

Cloud Computing Applications in Social Work and Education

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ABSTRACT

This chapter provides overall information related to cloud computing technology. Initially, it explains an overview history of the technology. In addition, the components of cloud computing and how these components interact each other are described for a better understanding of lay persons. The distinctive fundamental characteristics of cloud computing are also listed. The chapter illuminates the service and deployment models of cloud computing. Moreover, the benefits and challenges are examined. Another section of the chapter highlights possible implementations of cloud computing in education and compares these implementations between the developing and developed country perspectives. More specifically, the services currently being used in the education domain are also emphasized. Finally, the possibility of using cloud computing in social work as an information technology or systems solutions is considered.

INTRODUCTION

Internet is progressing rapidly from a conventional portal of supplying users with information only, to an essential necessity for users who want to store data, conduct computing, as well as operate software applications from anywhere in the world at any time. This can be accomplished with the advent of new innovations such as cloud computing, which is recognized as the fifth generation of computing next: client-server computing, mainframe computing, personal computing and the web computing (Khmelevsky & Voytenko, 2010; Rajan & Jairath, 2011). cloud computing has influenced and motivated Many users at individual and institutional levels due to the transparently of managed systems and applications, which enable users to access cloud resources via the Internet without the need for expertise or skills (Regalado, 2011). Consequently, cloud computing can be defined as the consequence of the progression

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of computer technologies besides their combination with the Internet to deliver a “Model for enabling ubiquitous, 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 provisioned and released with minimal management effort or service provider interaction” (Mell & Grance, 2011, p.2).

Cloud computing was also defined as a large group of computers connected to each other. They can either be personal computers or network servers. Through this formulation, a very wide range of authorized end-users can access applications and information stored in the clouds from anywhere at any time utilizing any smart device over the Internet. It is known that cloud providers keep the technologies and architecture behind the cloud hidden from the end-users, so what Procedure the cloud providers use is meaningless (Miller, 2009). For example, to clarify the definition of the cloud computing, we could compare it to a source of energy or gas. All these services are delivered to consumers in a seamless and simple way without the need to consider how to deliver them. Similarly, Cloud Computing offers computer resources to customers in a simplistic way and avoids a lot of complex operations and internal processes, because customers don't need to learn what's going on within the cloud; they're just interested in the performance of the output services (Jackson, 2011).

Cloud computing has become universally common as a means of providing technologies to educational institutions and other organizations. Industry leaders predict that incomes from cloud computing firms would exceed \$160 billion, they have described cloud computing is an innovative IT development, implementation, and distribution model that facilitates the delivery of products, services and solutions over the Internet in real-time with its focus on providing low-cost or free services anywhere on the Web. Cloud computing is an exciting future for educational systems struggling with financial restraints and dispersed student populations. Commercial service providers are keen to promote the educational use of cloud computing; for example, Google has developed a special educational version of their cloud-based applications in order to meet students requirements (Behrend, Wiebe, London, Johnson, & Technology, 2011; Fowler & Worthen, 2009). However, effective cloud computing implementation in educational environments demands a strong analysis of different perspectives by both students and academics. In order to facilitate the transition, educational institutions have to consider whether to create their own cloud infrastructure systems or using services offered by similar service providers through a public cloud. This decision must be taken after setting their own standards. Therefore, it is strongly advised that educational institutions classify which services they want to turn into before committing to this movement, they should create a service catalog, by defining and deciding which criteria they would need to use in order to exchange this data with their service providers (Al Tayeb, Alghatani, El-Seoud, & El-Sofany, 2013). In consideration of shortcomings in previous researches about the factors impacting students' acceptance of cloud computing technologies, this study intends to find out and examine the factors affecting the intention of adopting cloud computing among college students for Iraqi higher education institutions with the goal of understanding the variables that contribute to effective implementation [8]. The level of implementation of cloud computing in developed countries' universities is extremely high and studies have been undertaken in many developed countries such as Australia, United States and Turkey (Behrend et al., 2011; Ramachandran, Sivaprakasam, Thangamani, & Anand, 2014; Ratten, 2015a; Ratten, 2015b).

However, in comparison, the level of adopting cloud computing in universities in developing countries is extremely low and there is a shortage of studies in emerging countries such as Iraq and Saudi Arabia (Al-Ani, Ibrahim, & Sciences, 2012; Hashim, Hassan, & Sciences, 2015; Sabi, Uzoka, Langmia, & Njeh, 2016). Accordingly, this study conducted in Iraq in order to address that shortcoming. This study

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