

Factors Affecting University Students' Intention to Use Cloud Computing in Jordan

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ABSTRACT

The aim of this study is to examine the factors affecting students' intention to use cloud computing in the Jordanian universities. To achieve this purpose, a quantitative research approach which is a survey-based was deployed. Around 400 questionnaires were distributed randomly to Information Technology (IT) students at four universities in Jordan and only 236 valid questionnaires were received. Using multiple regression technique, the results revealed that perceived usefulness, perceived ease of use, perceived security, perceived speed of access, and perceived cost of usage were significantly influencing the students' intention to accept and use cloud computing while the Affect was not. Furthermore, the results indicated that the developed model explains 50.4% of the variance in the students' intention to use cloud computing. Practically, the results of this study are considered fruitful for the universities and students to increase the usage of cloud computing in the educational settings.

KEYWORDS

Cloud Computing, Education, Intention to Use, Jordan, TAM2

1. INTRODUCTION

Cloud computing is one of the hottest innovations in the field of Information Technology (IT). Cloud computing provides innovative solutions for major problems facing different industries. Among the most important contributions of the cloud computing are the cost-effectiveness, improved scalability, usefulness, ease of use, worldwide accessibility, and greener computing (Behrend et al., 2011; DiMaria, 2013; Changchit, 2014; Marston et al., 2011; Solms and Viljoen, 2012). Moreover, the education industry is not far away from getting the benefits of such technology.

Practically, students need their files in classrooms for different academic purposes such as to submit assignment, review material and for academic discussion. Mostly, students rely on flash drives to fulfill the academic purposes as well, but flash drives could fail or get lost (DiMaria, 2013). Sultan (2011) stated that 66% of USB drives are lost; hence the cloud is more secure. On the other hand, students could rely on cloud computing to overcome similar problems. In an educational setting, students could use cloud computing for completing assignments, online classes, group projects, creating and editing papers and presentations (Changchit, 2014). In addition, Cisco Systems defined cloud computing as "attractive advantage to higher education because of its potential to reduce information and communications technology costs by virtualizing capital assets such as disk storage and processing cycles into a readily available, affordable operating expense." (DiMaria, 2013). The main essence of cloud computing is to provide computing capabilities anytime, anywhere over the

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internet. Consequently, the educational environment could be improved to allow students to access learning resources anywhere and anytime (Wu, 2013).

To add more to the previously stated, cloud computing usage and acceptance has been examined and tested in different industries for example, in IT companies (Opitz et al., 2012), in high technology industry (Low et al., 2011), in small and medium enterprises (SME) (Alshamaila et al., 2013; Gupta et al., 2013), and in hospitals (Lian et al., 2014). However, there is a little emphasis on the usage and acceptance of cloud computing in educational and universities' settings (Taylor and Hunsinger, 2011). According to Blue and Tirotta (2011), students have a little experience with cloud computing technologies. Moreover, the successful implementation of cloud computing in educational settings requires careful attention to a number of factors from the perspective of the student and the university (Behrend et al., 2011). Specifically, students' behavioral intention toward cloud computing is still vague (Shiau and Chau, 2014). Therefore, the aim of this paper is to examine the factors influencing IT students' intention to use cloud computing in the Jordanian universities.

The first section of this paper introduce the motivation, problems, and objectives of this study, the next section presents the roles and importance of cloud computing in education. The third section includes the construction of the research model and the proposition of the research hypothesis. The fifth section presents the research methodology. The next section shows the research results followed by the discussions and implications of the results. The last section presents the research conclusions and recommendations for future research.

2. CLOUD COMPUTING IN EDUCATION

National Institute of Standards and Technology-NIST defines Cloud Computing as 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 and Grance, 2011; Plummer et al., 2008). In other words, cloud computing is the ability to use a diverse computing resources anytime and anywhere over the internet.

The interest of cloud computing has increased dramatically by academic organizations (Bouyer and Arasteh, 2014). Hence, cloud solutions seemed to be a perfect solution for the IT enterprises who suffer from budget concerns and economic woes (Teng and Magoules, 2010). Behrend et al. (2011) stated that “With its emphasis on the delivery of low-cost or free applications anywhere on the Internet, cloud computing is a promising prospect for educational institutions faced with budget restrictions and mobile student population”. In addition, cloud computing environment constitutes the basic infrastructure of the virtual education and virtualization system (Bouyer and Arasteh, 2014). Moreover, cloud computing became a popular way to deliver technology to education environments and other organisations (Behrend et al., 2011; Shiau and Chau, 2014). It is a technological innovation that both reduces IT costs for the university and eliminates many of the time-related constraints for students, making learning tools accessible for a larger number of students (Behrend et al., 2011). As a conclusion, cloud computing could reform the traditional education system in the universities and could shape the future for the students' education.

Many studies focused on the benefits of cloud computing in education (Bouyer et al., 2013; CISCO, 2012; Douglas et al., 2010; Google, 2012; Kalagiakos and Karampelas, 2011; Praveena & Betsy, 2009; Sultan, 2010; Vulic et al., 2011) including the delivery of various services quickly, minimizing costs, reducing risk and enhancing security, and reshaping teaching and expanding collaboration. Moreover, Bouyer and Arasteh (2014) pointed out that “Applying cloud computing in higher education institutions improves the efficiency of existing resources usage, as well as the reliability and scalability of software tools and applications for e-education”. Students could utilize the cloud computing services over the internet in saving their files, using diverse applications and software, and obtaining hardware and computing infrastructure support. Douglas et al. (2010) have

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