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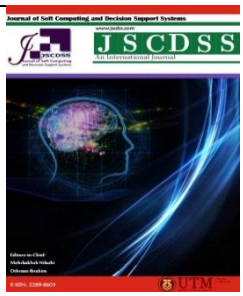

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Cloud Computing Adoption Behaviour: an Application of the Technology Acceptance Model

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Abstract

Cloud computing is considered as a new technology which significantly affects teaching and learning processes in educational environments. Utilizing this technology not only enhances the quality of teaching and learning, but also reduces overhead expenditures of educational institutions. Despite the worthwhile advantages of cloud computing, however, its adoption is still far from full potential, particularly in university settings. Thus, this research is aimed to develop a theoretical research model for the adoption of cloud computing in university settings. For this purpose, Technology Acceptance Model is chosen as theoretical foundation and collaboration, mobility, and personalization are added to it as antecedents of perceived usefulness and perceived ease of use.

Keywords: Cloud computing, Adoption, Technology Acceptance Model, University settings

1. Introduction

Nowadays, cloud computing is increasingly becoming a ubiquitous computing tool and a powerful platform in every aspect of the society. Grid computing, utility computing and virtualization technologies can be considered as precursors to cloud computing (Sourya, 2011). Fig. 1 demonstrates the evolutionary steps of cloud computing from 1990 to 2008. Grid computing is the use of distributed parallel computing devices which are connected to each other and worked on a single problem (Craig et al., 2009). Grid computing leads to utility computing which is a model of renting computer capacity such as storage, hardware, CPU, network bandwidth, pay based on demand and consumption (Sourya, 2011). Software as a Service (SaaS) provides users commercially available software through the internet, charging for used services instead of offering licensed applications (Craig et al., 2009). Cloud computing is considered as a broader form of utility computing and grid computing. Column (2008) argued that it is very difficult to explain cloud computing in a unique definition, the fundamental features of this technology are that applications run somewhere on the "cloud", Scalability, performance, reliability, all without any concern as where the applications actually run. Cloud computing helps organizations by offering high degree of returns on investments.

The National Institute of Standards and Technology (NIST) defined cloud computing as:" a model for enabling ubiquitous, convenient, on-demand network access to a shared computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of three service models, and four deployment models" (Mell and Grance, 2011). Private cloud, public cloud, community cloud, and hybrid cloud are four main deployment models of cloud computing. Furtheremore, cloud services are categorized into Infrastructure As a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS), (Cooke and Kirby, 2008; Mell and Grance, 2011).

Higher education is one of the basic foundations which has strong interrelationship with government and other business organizations (Jain and Pandey, 2013; Pardeshi, 2014). Therefore, educational institutions are constantly looking for the new technologies for their software and IT hardware in order to make students more satisfy and to follow the rapid developments in digital technologies (Sultan, 2010). Nowadays, cloud computing has considerable importance in higher education (Thomas, 2011). Cloud computing is the latest technology which can significantly improve the quality of teaching and learning in educational environments. This technology improves the accessibility of education, especially in remote and underserved communities. Furtheremore, it offers variety of internet-based application platforms and solutions according to the demand of users (Miseviciene et al., 2011) and learning needs of student and lecturers (González-Martínez et al., 2015). On the other hand, since universities face some limitations such as budget constraints, limitedon-campus computing resources, and lack of unified storage