International Journal of Strategic Information Technology and Applications
Volume 7 • Issue 3 • July-September 2016

Perceived Use and Acceptance of Cloud Enterprise Resource Planning (ERP) Implementation in the Manufacturing Industries

Adewale Adeboye, Southern Wesleyan University, Minneapolis, MN, USA

ABSTRACT

The purpose of this study was to gain an insight into perceived use and acceptance for implementing an enterprise resource planning (ERP) system and the decision whether to contract out the ERP service to a cloud provider. A non-experimental, quantitative method of analysis was used for this research and a survey instrument developed by Venkatesh (2003) was used to gather data from information technology professionals in the United States. The data generated were tested using Chi Square and Multiple Regression. Chi square was used to test the hypotheses and the result establishes a pertinent relationship between the dependent variable and the independent variables. Multiple regression analysis was also conducted on the four independent variables and all of the independent variables tested have a p- value that is greater than 0.05 (p>0.05). Hence, it was concluded that the null hypothesis be accepted for all the four independent variables tested.

KEYWORDS

Cloud Computing, Cloud ERP, Cloud-Based ERP, Enterprise Resource Planning, ERP, ERP Implementation, ERP System, Infrastructure as a Service, Platform as a Service, Software as a Service, UTAUT

INTRODUCTION

Cloud computing has become a technology trend that has reshaped how information systems are operated and utilized, impacting the use of Enterprise Resource Planning (ERP) systems from a stand-alone application running within an organization to being relocated in the cloud to allow the organization to use this enterprise application in a more cost efficient manner (Rabay'a, Dweib, & Abuzir, 2013). Organizations have experienced a number of failures while attempting to implement an ERP system. Many organizations have not been able to leverage the benefits of the integrated ERP process. A number of reported failures in implementing an ERP are prevalent in the literature including, Whirpool, Waste Management, Inc. and W.L. Gore and Associates. Prime examples of ERP failures are noted in the inability of Hershey Candy Company to ship during the Halloween season, Nike losing shoe orders, FortMeyer's inability to process customer orders, and Marin County

DOI: 10.4018/IJSITA.2016070102

having to abandon a $30 million investment in implementing SAP software and related services from Deloitte Consulting. The main reason for failed ERP rollouts in the manufacturing sector is that most manufacturing systems are tailored toward material requirements planning (MRP) and standard inventory processing, whereas an ERP focuses on tangible and intangible functions of manufacturing (Garg & Garg, 2013).

Cloud-based ERP systems can provide many advantages to the normal implementation of the same systems as a stand-alone application running within the company computing environment, including increased scalability, system performance, cost saving through shared tenancy, and a lower entry investment (Rabay'a et al., 2013). In addition, cloud computing offers the subject matter experts (SMEs) with new choices for administering the ERP infrastructure. The SME also can benefit in the same manner as large companies through cloud services managing and maintaining the ERP. Cloud based ERP software packages have numerous advantages that do not exist in the traditional customer installed system (Rabay'a et al., 2013), including increased scalability, performance, distribution of financial investment through multi-tenancy, and a lower obstacle to implementing ERP systems. Using the cloud provides small to mid-sized enterprises with a variety of options for maintaining the inherent infrastructure necessary to run such a system and implementing the many features a cloud ERP offers the user. A cloud based system is an on-demand ERP alternative that leverages zero installation effort by the user, is fast and easy configuration, and has immediate access.

LITERATURE REVIEW

Gap in Literature

The enterprise resource planning (ERP) system is a technology tool that has been in existence for more than 15 years in a variety of small and medium enterprise (SME) environments (Karchur, 2013). With the increasing market competition and globalization, SMEs are increasingly implementing these tools; however, the high cost of deployment is generally a deterrent in plans to use ERP (Mahara, 2013). Many organizations opt to find more cost effective solutions such as ERP in the cloud as a feasible possibility, therefore eliminating hardware and software costs that potentially lower financial investment. Organizations are expecting the adoption of cloud computing to provide some benefits to them, often the most important being a reduction in their capital expenditure (Durkee, 2010). The problem however is the fact that there are very few literatures that have discussed cloud enterprise resource planning implementation extensively hence organizations have limited resources to fall back on in order to expand their knowledge and views of cloud ERP implementation. The information obtained from this research may serve as guidance to organizations and give them a good understanding of the likely benefits and risks that could arise from the adoption of cloud computing during enterprise resource planning (ERP) implementations.

Cloud Computing

The idea of cloud computing is a nebulous concept. This method of computing is as old as the mainframe computer (Hoy, 2012). However, in the cloud, the modern web browser and ubiquitous Internet connectivity has replaced the isolated mainframe with its dumb terminals that often connected over dial-up or serial communications facilities (Delozier, 2013). Cloud computing, at the time of this research study, was a new approach to information technology that allows the delivering of services over the Internet (Kiadehi & Mohammadi, 2012). It has become a dominant concept in the information technology (IT) field due to its ability to transform a significant portion of the infrastructure and operationalization of the industry (Madhavaiah, Bashir, & Shafi, 2012). Cloud computing has expanded