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Recommended Citation  
Using the Multi-Theory Approach to Investigate the Factors that Affect the Adoption of Cloud Enterprise Resource Planning Systems by Micro, Small and Medium Enterprises in the Philippines

Research-in-Progress

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Abstract

The ASEAN Economic Community (AEC) encourages Micro, Small and Medium Enterprises (MSMEs) to heighten their competitiveness by applying information and technology (ICT) solutions. However, MSMEs are faced with challenges, specifically, the lack of ability to be globally competitive, to develop market driven product based on customer needs, and their inability to fully leverage the benefits provided by the digital and internet economy. Today, cloud computing can be a promising alternative for MSMEs to exploit the benefits of technology. Cloud computing, particularly cloud ERP (or software as a service) has created positive impact to the operations of global enterprises. For us to better understand the factors that will influence the adoption/rejection of Cloud ERP for MSMEs, it will be grounded on Technological, Organizational, Environmental Framework and Salim’s Process-View Approach for the technology adoption process. While majority of research are descriptive studies of Cloud ERP and is viewed from a vendor’s perspective, this study will investigate the factors that influence the acceptance/rejection of Cloud ERP for MSMEs, particularly the key decision makers. This research study will use both quantitative and qualitative approach in the analysis of data. This mixed-method approach has gained popularity among IS researchers to develop novel theoretical perspective in information research.

Keywords: Cloud ERP, Cloud Computing, small and medium enterprises, ICT adoption

Introduction

The Asia-Pacific Economic Council (APEC) Small and Medium Enterprises (SMEs) Summit held last November 2015 in Manila, Philippines aimed to convince the Micro, Small and Medium Enterprises (MSMEs) to open a fresh mindset and to leave the traditional MSME framework behind. It hopes to motivate APEC entrepreneurs to re-think and re-create the way they do business to ensure that the delivery of their products and services satisfy the needs of the 21st century global marketplace. Though MSMEs comprise 97% of all enterprises and generate more than 70% of all jobs
in the APEC Region, they only accounts for 35% of annual global exports. This is since MSMEs lack the knowledge to be globally competitive, and do not possess the capability to fully obtain leverage on the benefits provided by the digital and internet economy.

As the global community becomes more and more reliant on ICT to receive, process, and send information, the MSMEs in the Philippines face challenges and competition among themselves. For MSMEs, the barriers to adoption are both internal and external. Indonesian MSMEs share the dilemma in ICT adoption decision, which is hindered by the high cost, security concern, and limited ICT skills (Setiowati and Daryanto 2015). Malaysian MSMEs only use it for basic functionalities and do not activate new information services or improve internal or external communication (Selamat et al. 2013). Chinese MSMEs encounter technical problems, infrastructural issues (poor internet connection), limited human resources, problems linked to economic situation, and lack of legislative and government support. Collaborating with their Chinese partners with no ICT also makes their investment under-utilized (Skoko et al. 2008). In the Philippines, the Commission on Information Communication Technology (CICT) recognizes that the two key challenges of the MSMEs are the cost of technology and the lack of IT skills of its personnel (Philippine Digital Strategy 2011-2016).

Today, the emergence of a phenomenon known as cloud computing can be a promising alternative for MSMEs to exploit the benefits of technology. Cloud computing, particularly cloud ERP (or software as a service) has created positive impact to the operations of global enterprises.

The use of cloud ERP has been studied by scholars mostly using descriptive methods (Haddara et al. 2015; Kinuthia 2014; Ruivo et al. 2015; Saleh et al. 2012). The need for a practical and empirical research on cloud ERP to avoid pitfalls and misinterpretation in the adoption of cloud ERP was expressed by Hao and Helo. While most the researchers agree on the benefit of cloud ERP for MSMEs in a global context (Seethamraju 2014; Lewandowski et al. 2013; Johansson, et al. 2015; Salim 2013; Grubisic 2014; Rodrigues et al. 2014; Salleh et al. 2012), it is important to see how such technology can be used in the local context, as Philippine business is largely composed of SMEs.

In the Philippines, 99.6% of registered businesses fall under the MSME category that employ about 70% of the country’s workforce. However, its contribution to the country’s GDP is only 35.7% (Senate of the Philippines, 2012). With the ASEAN Economic Integration on hand, the use of Cloud ERP can reduce the operational cost, improve business efficiency and profitability and minimize the barriers in doing business in the ASEAN and international market ask that authors follow these basic guidelines when submitting to PACIS.

Research Questions

This study aims to determine the factors that will influence Philippine MSMEs to adopt/reject Cloud ERP, particularly those who are members of the Philippine Franchise Association (PFA) in Metro Manila, Philippines with the trading sector as the primary focus of this study.

The above discussions gave rise to the following questions:

1. What is the current technology adoption process of Philippine MSMEs on Cloud ERP?
2. At what stage are the Philippine MSMEs in the technology adoption process on Cloud ERP?
3. What are the drivers/barriers that will influence the adoption/rejection of Philippine MSMEs on Cloud ERP?

Theoretical Foundation

This study provides a significant contribution to the body knowledge on Cloud ERP by providing new insights and empirical evidence in technology adoption process. This study will be grounded on two well-established IT/IS theory, namely the Technological, Organizational and Environmental Framework by Tornatzky and Fleischer (1990) and Salim’s Process-View Approach (2013) will be used as it clearly explains the transition factors that an SME will undergo when deciding whether to adopt or reject Cloud ERP.

The barriers and drivers on Cloud ERP adoption among MSMEs are grouped per several categories: (1) Technological, (2) Organizational, (3) Environmental, (4) Economic, (5) Business Model, (6) Innovation, (7) Human, and (8) Vendor (Salum et al. 2015). The barriers and drivers in Cloud ERP adoption were found to be comprehensive and complete to be the basis for the conceptual framework for this study (Figure 1).
Integration and interoperability are two well-known issues in cloud computing because cloud-based systems are standardized and the environment is strict (Lechesa, Seymour, and Schuler, 2012). There are no interoperability standards within the cloud computing arena which create a possible lock-in scenario for the clients. Likewise, there is a lack of standard (Garverick, 2014) for cloud ERP systems and given the MSMEs limited resources, they are not keen on spending effort in creating definitions nor standards.

Low awareness about Cloud ERP reduces technological readiness of MSMEs for the adoption of cloud ERP. Since Cloud ERP providers are in the best position to implement and support a stable system because of their high technical expertise and well-trained IT personnel (Saeed et al., 2012), the risk is now on the cloud ERP providers because they have enough expertise to manage such risks as compared to internal ICT staff of MSMEs.

To ensure that the ERP system itself and the network provides 100% availability or very close to that, it is vitally important that Service Level Agreements (SLA) are entered between the vendors and the clients (Saeed et al. 2012; Lechesa et al. 2012). Clash issues may emerge if SLAs are not properly defined between the cloud provider and customer (Marston et al. 2010).

In terms of laws and regulation, MSMEs need to be assured that Cloud ERP complies with legal requirement in terms of the data it provides. Data sovereignty should be considered in choosing cloud ERP to protect the digital information (Liu 2014). While cloud ERPs have a data center and can be located anywhere, it is still subject to the laws and jurisdiction where the data is stored (Oliveira et al. 2014).

Given the benefits that Cloud ERP can bring, MSMEs can focus more on their business rather than worrying the technical aspect of ICT, thus avoiding system mismatch between software functionality and business requirements (Zhong et al. 2014). In almost all ERP implementation, whether cloud or on-premise, top management support plays an important role in cloud ERP adoption because it guides the proper allocation of resources, the integration of services, and the need to re-engineer business processes (Lian et al. 2014, Oliveira et al. 2014). The Chief information officer (CIO) innovativeness and perceived technical competence also influence MSMEs to adopt Cloud ERP (Lian et al. 2014). There is now a shift of the role of the MIS Department for maintenance of IT resources to maintaining business relationships with Cloud Service Providers.

To identify where the Philippine MSMEs are currently in the technology adoption process for Cloud ERP, the transition factors mentioned in the Priori Cloud ERP Adoption Framework (Salim 2013) will serve as the guide (Figure 2).
**Methodology**

Since the research will employ discovery of new factors related to Philippine MSMEs in the local context, this research study will use a “mixed-method” approach. Using both quantitative and qualitative analysis has gained popularity among IS researchers to develop novel theoretical perspective in information research. It combines the strength of quantitative and qualitative method which in-turn overcomes the deficiency of both methods.

The quantitative research instrument used for collecting data in the study will be through an online survey questionnaire made using Google Forms. The final survey questionnaires will be distributed to all the members of Philippine Franchise Association (PFA). The data will be analyzed using descriptive analytics to identify the factors that will influence the adoption/rejection of Cloud ERP. After the survey, qualitative analysis shall follow. Selected participants shall be invited for an interview to validate their understanding on the questions and provide insights on the topic. The respondents will be grouped per the nature of their business since different industry may have a different point-of-view on the research topic. The researcher shall follow the inductive approach in the analysis of the interview results.

**Current Stage of Research**

Survey questionnaire was deployed online to the thirteen (13) members of Philippine Franchise Association (PFA) under the Retailers Category operating within the Metro Manila, Philippines last December 2016. There are 11 members who responded with the majority having position as decision makers such as the owner, general manager, franchise, and operations manager. The schedule for Proposal Defense to De La Salle University’s College of Computer Studies (DLSU-CCS) Dissertation Panel will be on the first week of March 2017. A full roll-out of the online survey questionnaire shall be distributed from April to July 2017 in time for the Franchise Asia Philippines 2017 to be held at the SMX Convention Center, Pasay City, Philippines. Descriptive analytics will be used in the analysis of quantitative data. Focus group discussion shall be conducted from August to September 2017 to validate the response and identify additional factors using inductive approach. Final presentation to DLSU-CCS Dissertation Panel is targeted by 3rd week of November 2017 for approval.
References


