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Research paper

Cloud-Based ERP Implementation in SME's: A Literature Survey

Ghaith Jaafar Mohammed, MA Burhanuddin

Faculty of Information and Communications Technology
Universiti TeknikalMalaysia Melaka, Malaysia
**Corresponding author Email:ghayth_jm90@yahoo.co.uk*

Abstract

Cloud based Enterprise Resource Planning (ERP) can be instantly deployed as it does not need a high upfront investment. These enterprise systems are substitutes to on-premises ERP systems. Cloud ERP also known as SaaS (Software-As-Service) ERP. Current studies show that there are many organizations have been adopting cloud ERP recently. They have observed the welfares and opportunities offered by cloud computing. This paper aims to provide a detailed overview on the benefits, opportunities, and advantages of cloud ERP. This paper would be useful for future adopters and decision makers of cloud ERP in SMEs.

Keywords: Cloud Computing; ERP; Enterprise Resource Planning; SMEs; Cloud-Based ERP.

1. Introduction

A significant issue facing ERP system is the physical location for its data servers. For commercial and basic cloud computing, the service is transparent to the user, without any complications as to the technicalities, server location, and host-server interactions. However, such is not the case for cloud-based ERP systems, as data is more crucial for a company, they prefer to have servers hosting these systems based within their own geographical locations. The following issue pertains to the business model of ERP delivery, which affects the costs of the service. Various models exist in the market, from fixed/variable, SLA-related and Pay-as-you-go schemes. As ERP is a type of service, it falls under the SaaS model. As customized cloud-based ERP systems tend to be quite expensive, commercial alternatives are more preferred by SMEs with limited resources and finances. Larger companies tend to prefer customized forms of these systems and are willing to pay the additional costs to accommodate their business needs. This study consists of the relevant literature, publishing and hypotheses which specifically focus on the issues related to cloud-based Enterprise Resource Planning, taking into account the objective to give ensuing discussion and analysis.

2. Erp System

The definition by [7] is generally utilized in IS inquire about and portrays ERP as a business programming bundle that guarantees consistent joining of all the data coursing through an organization, including the monetary and bookkeeping data, human asset data, store network data and client data .

Table 1: ERP Definitions

References	Definition
[7] [16]	Configurable IS bundle that coordinates data and data based procedures inside and crosswise over practical regions in an organization.
(Davenport, 1998 [7]; M Lynne Markus et al., 2000 [19])	Software bundles that empower the mix of exchange situated information and business forms all through an association consistently fusing all the data moving through an association.
[11] [14]	can possibly interface and mechanize all parts of the business, joining centre procedures and primary managerial capacities into a solitary data and innovation engineering.

3. Cloud Computing

Cloud computing is model which packages different kinds of existing IT technologies into one bundle of service. The current IT technologies are already being implemented individually, such as Web 2.0 and virtualization, but on the other hand some of their abilities are chosen to enable the cloud environment [28].
According to [10], people used the cloud in the late 1990s to signify everything that relates to the internet. The word "cloud computing" was initially used during the Search Engine Strategies Conference in San Jose in 2006, when Eric Schmidt, Google's former CEO tried to describe the history of internet and computer architecture [17].
In general, cloud computing the three dimensions consists of:
Software as a Service (SaaS): This provision furnishes cloud clients with a wide scope of access to applications from a few organized

devices. The applications are leased to clients over a subscripted time (pay-per-use).
Platform as a Service (PaaS): This service is identified with SaaS. It furnishes clients with the capacity to lease framework with a view to inspire a stage to fabricate their very own applications. These applications are worked with programming tools and in an arrangement provided by the supplier.
Infrastructure as a Service (IaaS): The IaaS is built based on SaaS and PaaS. The users are offered with the ability to outsource basic computing resources (networking components, storage etc.) that are to be used in their operations. Users have control over the deployed operating system, applications and storage while the CSPs are responsible for the management and control of the cloud infrastructure [15].

4. Cloud Based ERP

Cloud ERP is considered to be as business software bundles that empower the reconciliation of business procedures and exchange situated information all through the association utilizing a model that empowers pervasive, advantageous, on interest arrange access inside insignificant administration exertion or specialist co-op response. The cloud ERP is considered to be a relatively new face in the market.
It very well may be overseen by the association itself or by an outsider inside or remotely. In people group cloud, foundation is shared between numerous associations with normal concerns, for example, security, approach, mission, and consistence. These mists are overseen and facilitated inside or remotely through an outsider. Half and half cloud is a blend of at least two cloud foundations that stay one of a kind substances yet are limited together to give preferences of different cloud structure.

5. Literature Review

A literature review is a strategy to gather information from the current writing. The literature review in this paper depends on an audit approach and dissected in the grouped configuration. The examination methodology are complete and orderly. This methodology is portrayed by receiving express systems and conditions that limit predisposition. The survey papers are from presumed distributed diaries. The hunt procedure was limited through the paradigm that the articles should have been distributed in journals review by peers or conference procedures.

Table 2: Topics Analyzed and Corresponding

NO.	Searched Topics
1	Cloud Computing integration and ERP in SMEs
2	Criteria related review with selection of Quality of Services (QoS)
3	A framework that can measure the precedency of selecting cloud computing services

Table 2: Summary of Reviewed Papers with their findings

Author and year	Title	Findings
Saini, S. L., Saini, D. K., Yousif, J. H., & Khandage, S. V. (2011) [26]	Cloud Computing and Enterprise Resource Planning Systems	The reviews for the development of Low cost ERP Solution to Indian industries on Mobile using latest technologies such as SaaS, Mobile computing, Cloud Computing etc. is developed.
Somani, Dadhich, (2013) [30]	ERP Cloud Computing model	By coordinating the cloud and ERP, will enhance the use proficiency of big business IT assets and so forth.
Nwoke, M. E., & Okide, S. (2018) [23]	Design and Implementation of a Web-Based Enterprise Resource Planning (ERP) System	This paper shows the implementation of an online information system for the company will be a big relief for clients, it will Facilitate register with the company, supply raw materials, order goods etc. The hassle and inconveniences involved in travelling to the company's offices to do registration and transact other business with it will be removed. Improving accountability and resource management by provides online security for logging in by the introduction of SMS coding, it also provides the cooperation, coordination, and integration among the functional units. And block the tedious data entry within the organization.
Ambavane, S. A., Pawar, A. S., Verma, V. H., & Marathe, P. (2018). [2]	Cloud Computing and SaaS (ERP) Implementation.	This paper is centralized around SaaS benefit which incorporates security issues and its answers. They have referenced different security counteractive action systems which should be viewed as when need to execute SaaS. By selection the SaaS security procedures and standard SaaS security evaluation can empower SaaS merchants to support client trust in the security of their answer and empower its quicker and more extensive reception.

6. Conclusion

The key advantages that drive associations to receive distributed computing; a portion of these advantages are cost decrease, adaptability, and green IT. Right now, as recognized from the different examinations, it has given a basic audit and investigation of the current work and methodologies with respect to movement to cloud situations, to investigate how the security issues are considered in these methodologies. This paper additionally tended to existing speculations which are utilized to gauge the acknowledgment of receiving advances and surveying other proposed models so as to see the conceivable components that influence an association's choice to embrace cloud-based ERP.

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