

# Cloud ERP Systems for Small- and-Medium Enterprises: A Case Study in the Food Industry

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## ABSTRACT

Organizations recognize the need to adopt Enterprise Resource Planning (ERP) in order to become more competitive, efficient, and productive, although the adoption and implementation of an ERP system is a costly and risky endeavor. Recently, cloud computing has become a viable and competitive means by which most organizations, especially Small and Medium-sized Enterprises (SMEs), can implement an ERP system in a short time frame and cost-effective way. The authors' research examines the feasibility of cloud-based ERP systems for SMEs through a case study. The case emphasizes the potential of cloud-based ERP systems for SMEs as well as some of the challenges and peculiarities involved in their efforts to obtain an affordable and versatile ERP system. Their findings can potentially guide SMEs to make well-informed decisions throughout their cloud-based ERP adoption process.

## KEYWORDS

Business Processes, Case Study, Cloud Computing, Enterprise Resource Planning (ERP), Small and Medium-Sized Enterprises (SMEs), Software as a Service (SaaS), Supply Chain, Vendor Selection

## INTRODUCTION

Small and medium-sized enterprises (SMEs) play an important role in the socio-economic development of nations by creating jobs and boosting the economic recovery, which are important to the creation of wealth (Coyte et al., 2012). In order to expand their business initiatives, reduce costs and improve on production capacities, SMEs need to adopt new innovations that can bring about the desired boost to their business models (Alizai & Burgess, 2009). The enacted capabilities of SMEs' Information Systems (IS) could play a crucial role in this process (Bhatt et al., 2017; Salleh et al., 2017). As such, a reliable and responsive supply chain is one of the principal drivers of achieving these goals, and enterprise resource planning (ERP) happens to be one of the primary vehicles to help drive supply chain objectives. An ERP system can offer multiple values to any organization planning to streamline their operations to achieve profitability and gain an edge over their competitors.

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Many organizations adopt information technology solutions, such as ERP systems, to efficiently manage their business processes and to streamline the flow of information between units within the enterprise, as well as to collaborate with suppliers, partners, and customers. Therefore, the successful adoption and deployment of ERP systems are crucial for the competitiveness and survival of organizations. However, the selection and implementation of an ERP system presents a huge challenge for SMEs, especially because of the high costs associated with the process. In addition, SMEs generally have a modest investment in technology (Oliveira et al., 2014). Although the traditionally locally hosted ERP systems, often called on-premise systems, are more common in large organizations, cloud-based ERP systems are becoming more relevant for SMEs in recent years, due mainly to the possibility of getting started at a low cost and a small scale. The advent of cloud computing, sometimes known as on-demand services (Chen & Wu, 2012), has provided SMEs with an unprecedented opportunity to adopt a wide range of application services, via the cloud, that are tailored for the needs of their business. As such, the Software-as-a-Service (SaaS) in the cloud has become a promising and affordable alternative for delivering enterprise applications to firms of all sizes, especially SMEs (Haselmann & Vossen, 2011). Lee (2017) demonstrated that the increased knowledge of cloud computing has decreased the perceived risk of cloud adoption, influencing a firm's decision in adopting cloud services to reduce costs and improve efficiency. Fan et al. (2015) stated that the enhanced benefits and lower switching costs associated to the cloud solutions significantly affect the intension of adopting these services at the firm level.

Rodrigues et al. (2016) identified cost, trust in the solution provider, and availability as the most important factors for SMEs to adopt ERP in cloud. A comparative analysis of large enterprises and SMEs in Germany revealed that cost reduction is the main driving factor for SMEs to adopt cloud ERP and improve operational performance (Karunagaran et al., 2017). In addition, Johansson et al. (2014) conducted interviews with several organizations and found that SMEs are well-positioned to deploy cloud-hosted ERPs, as many of the benefits are more applicable for them.

A prediction from Gartner group (Rayner, 2014) indicated that, due to lower costs, better functional fit, and process flexibility of cloud ERP, highly customized on-premise ERP systems would be relegated to legacy ERP status sooner than later. In addition, a recent survey by the same research group revealed that half of the organizations, most of which were SMEs, planned to migrate their core ERP systems to cloud within the next five years. Despite such evidence of impressive activity and growth, the lack of a commensurate benchmark is one of the challenges SMEs envisage in trying to measure the success and impact of such initiatives.

This paper presents a case study of a retail organization (referred to as RETAIL\_ORG hereafter, which is an SME in western Africa and the exclusive distributor of some African specialty brands in North America) on its efforts to obtain a cost-effective and efficient cloud-based ERP system on a limited budget. More specifically, it examines the factors involved in adopting and implementing a cloud-based ERP solution within an SME.

The remainder of the paper is organized as follows. The next section provides a review of ERP systems in SMEs. The following sections describe our research methodology and the case study of RETAIL\_ORG. The lessons learned and conclusion sections wrap up the paper.

## **ERP SYSTEMS IN SMALL-AND-MEDIUM-SIZED ENTERPRISES**

In the course of selecting the best overall ERP system for a company, an important decision concerns whether the organization should implement a cloud-based or an on-premise ERP. It is generally recognized that cloud-based ERP systems are becoming more popular for SMEs because of their cost effectiveness and flexibility. Cloud-based systems can be subdivided into three service delivery models (Xu, 2012): Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). According to (Duan et al., 2012), Software as a Service is concerned with the delivery of an application to multiple end users or customers through an underlying object code and database.

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