Chapter 65
ERP On-Premise or On-Demand

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ABSTRACT

This article contends that vendors are now pushing into the small to mid-size organizational markets with simplified, less-risk, less-reward systems while consultants have project experience and have thorough contracts isolating their role. However, SMEs that adopted ERP on-premise solutions before are now facing a dilemma: continuing with ERP on-premise upgrades or switch to on-demand solutions. This article contains data surveyed from Chief Information Officers (CIO) of SMEs with respect to indicators of ERP adoptions. Cost, reduced demand for own IT resources, outage/accessibility and performance were found to be the most critical and important factors to assess ERP adoptions for SMEs.

INTRODUCTION

Enterprise Resource Planning (ERP) solutions have evolved from reorder point and materials management focused systems (MRP) based on mainframes to responsive and integrated resource planning systems based on client-server architectures and web platforms. Through data standardization and process integration, ERP systems have the potential to facilitate communications and co-ordination, enable the centralization of administrative activities, reduce information systems (IS) maintenance costs and increase the ability to deploy new IS functionality (Gattiker & Goodhue, 2000). ERP systems are adopted for strategic, technical, and operational reasons including: providing an integrated "enterprise" wide application with real-time data access available across the entire organization, simplifying and standardizing systems and business processes, and replacing legacy systems. When they are properly implemented, ERP systems are able to bring operational, managerial, strategic, information technology (IT) infrastructure and operational benefits to their customers (Shang & Seddon, 2000). Motivations which have become more dominant

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include pressure to keep up with competitors on a global scale, mergers and acquisitions and the need for restructuring, and combining and integrating business processes. ERP systems have spread rapidly among organizations and according to Allied Market Research (2015), ERP market size is expected to reach $441.69 billion by 2020.

During the last decade many small and medium-sized enterprises (SMEs) have tried to adjust their business operations to cope with dramatic changes in the market. SMEs are trying to adopt better solutions to improve the effectiveness and efficiency of their business processes. Benefits from ERP systems are obvious. Gattiker and Goodhue (2000) describe the ERP benefits in following aspects: (1) improving the integration of information flow between sub-units; (2) centralizing the administrative activities, such as accounts payable and payroll; (3) reducing costs of system maintenance; (4) increasing the ability to deploy new IS functionality; (5) enabling transformation from inefficient business processes to accepted best practices. In this case, an ERP system seems to be one of the best solutions to SMEs (Olson & Satre, 2007). Since the majority of large companies have already implemented ERP systems, today ERP vendors are shifting their focus towards SMEs. Several reasons have encouraged the interest of ERP vendors towards SMEs. These include saturation of the market as the majority of large enterprises have implemented ERP software, the pressure for supply chain integration between large small enterprises, the high amount of SMEs compared to the number of large enterprises, and the technologies development alongside the availability of relatively inexpensive hardware.

In recent years, after many SMEs adopted various ERP packages from different ERP vendors, a new approach is available for ERP adoption called cloud computing, which supports an on-demand delivery of computing, storage, applications and collaborations over the internet. A recent International Data Corporation (Mahowald & Sullivan, 2012) report shows global revenue in cloud software market reached $22.9 billion and will grow to $67.3 billion in 2016. This projection includes revenue generated by the shift from on-premise to on-demand providers as well as by the planning activities and service architecture requirements behind the shift. Cloud computing can be adopted as one of the following services (Bhardwaj, Jain, & Jain, 2010; Kim, Kim, Lee, & Lee, 2009; Linthicum, 2010; Velte, Velte, & Elsenpeter, 2010; Wang & He, 2014):

- **Software as a service (SaaS):** Providing software subscription services;
- **Storage as a service:** Providing remote storage resource services;
- **Database as a service:** Providing remotely hosted database services;
- **Information as a service:** Providing remotely hosted information services;
- **Process as a service:** Providing business processes based on remote resources;
- **Application as a service:** Also known as SaaS;
- **Testing as a service:** Providing testing services for local or remote systems;
- **Platform as a service (PaaS):** Providing a complete platform to support application development, interface development, database development, storage, information and testing;
- **Infrastructure as a service (IaaS):** Providing a service to access computing resources remotely;
- **Security as a service:** Providing core security services remotely over the internet;
- **Integration as a service:** Providing a complete integration stack service.

Typically, a cloud ERP model refers to a traditional ERP solution which is hosted off-site. This model has the possibility to access real-time data without complex and costly remote-access technology. As a comparison, the SaaS model has a smaller technology footprint which is best suited for organizations