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ERP and Application Status: A Review of Vietnam's SMEs

Minh Duc Le
Lecturer of Department of E-Commerce, Vietnam-Korea Friendship IT College, Danang, Vietnam.

Abstract

This article was studied due to the necessity of applying ERP systems in small and medium-sized enterprises (SMEs). By researching, this study analyzes the evident problem in applying ERP systems in SMEs in Vietnam. It presents a review of ERP systems and states the operational definition as well as the reason of the low rate of ERP application in SMEs in Vietnam. The implications will be consistent with the Vietnamese SMEs to deploy ERP into effect.

Keywords: ERP System; ERP Application Status; Small and Medium-Sized Enterprises.

1. Introduction

Over the past few years, Information Technology and Information Systems play an important role in the business environment. In regards to growing global competition, numerous state-of-the-art information systems have been developed. Most of these new systems are Enterprise Resource Planning (ERP) systems. More broadly called enterprise system, ERP system "comprises of a commercial software package that promises the seamless integration of all the information flowing through the company–financial, accounting, human resources, supply chain and customer information" [6]. ERP systems are designed to console both the functional and operational processes of the value chain of a firm, including human resources, accounting and finance, customer and sales, and supply chain management [24]. ERP systems attempt to integrate all business processes into one enterprise wide solution to enhance data homogeneity and integration of modular applications [17]. Thereupon, a signified benefit of ERP systems is to streamline the workflow across various departments, ensure a smooth transition and quicker completion of processes, and enable all the inter-departmental activities to be properly tracked and none of them to be "missed out" provided that processing all business acts in accordance with information processing [23].

Several enterprises have made large investments in implementing ERP systems with the goal of enhancing their performance. ERP might help enterprises obtain competitive advantages in the global market, reduce cost, and achieve high quality production system. Small and Medium-sized enterprises (SMEs) also have the intention to integrate IT systems with the information system. ERP systems are adopted by enterrprises to support an integrated, packaged solution to their information needs. To date, prior research studies have documented mixes evidence on addressing the best critical factors for ERP projects success. Factors which are unique to ERP implementation consist of understanding corporate cultural change, business processes reengineering (BPR), and using business analysts on the project team [29]. Nevertheless, the result of implementing ERP does not always prove successful. Many studies were investigated in order to determine factors relating to the failure of ERP systems at the various stages of ERP implementation life cycles. Several companies had installed ERP systems, yet had to abdicate their implementation [27]. It is depicted that a load given to failure factors are poor technology planning, user involvement and training, overruns of budget and schedule, and adequate skills availability [20, 32].

Review of the literature, however, illustrates that most of the studies were conducted in developed economics such as the US, the UK, the European, Canada, etc [2, 13, 24]. Nevertheless, there have been some studies that were executed in the developing nations such as South American region [4], China [16], Malaysia [18, 20], Indonesia [9] and in the Middle East region [11]. More recent studies have suggested ERP system effects at micro levels, such as

order-fulfillment performance [5], process efficiency and effectiveness [12], job performance and job satisfaction of users [20, 28]. For that reason, this study aims to provide an overview of ERP systems, review the ERP application status in SMEs in Vietnam, and shed light on deploying ERP systems into effect in the Vietnamese SMEs.

2. An Overview of ERP System

2.1 Concept of ERP System

The prior study suggests different ways of defining ERP: that is, from a business perspective, a technical perspective or a functional perspective. One way of looking at ERP is a combination of business processes and information technology. Watson and Schneider (1998) defined ERP as an integrated, packaged software-based system used to handle the majority of an enterprise's system requirement in all functional areas, such as marketing, sales, human resources, finance, accounting, and manufacturing. O'Leary (2000) defined "ERP systems are computer-based systems designed to process an organization's transactions and facilitate integrated and real-time planning, production, and customer response" [21]. According to Shang and Seddon (2002), an ERP system is designed to automatically organize activities, decisions, and information flows across different departments of an enterprise through a unified database which stores all data for the various system modules [26]. ERP systems provide a seamless integration of all information flows in an enterprise to dismiss cross-functional coordination issues in the business process [6]. ERP is the leading approach to integrating business management and information technology. Through implementing an ERP system, enterprises can exchange information with customers and suppliers, make accurate data available in real time, and reduce the overall costs [1]. Therefore, an enterprise implementing an ERP system can gain benefits such as quick decision making, low inventory cost, fast and accurate information gathering, and increased interaction with customers.

2.2 Historical Evolution of ERP System

The fundamental structure of ERP has its origin over almost 50 years, driven by the changing business requirements and the new information technologies. During the 1960s, the primary source of competitiveness was cost. At that time, enterprises focused on cost minimization, high-volume production, and managing large inventories efficiently [1]. Most enterprises designed, built and implemented centralized computing systems, mainly automating the inventory control systems utilizing Inventory Control Packages.

Material Requirements Planning (MRP) Systems were born in the 1970s. The MRP System was designed to plan and schedule materials for complicated manufacturing processes. MRP was planning the part requirements for products in accordance withthe master production schedule (MPS) [25, 30]. MRP was essential for implementing the materials planning concept in production management and control [10].

Following this route, in the 1980s, new systems called Manufacturing Resources Planning (MRP II) were presented with a focus on optimizing manufacturing processes by synchronizing the production with material requirements. MRP II systems incorporated the financial accounting and management systems along with the manufacturing and materials management systems [1, 30]. Yet, the implementation requires information to be accurate. In case poor quantity information is applied in either the inventory segment or the bill of the material module, errors in automated planning processes will occur. The shortcomings of MRP II gave rise to the development of a solution called Enterprise Resource Planning (ERP) System.

The acronym ERP was first used in the beginning of the 1990s by the Gartner Group as an extension of computer-integrated manufacturing, MRP, and MRP-II [8]. Without replacing these terms, ERP came to represent a larger whole that reflects the progression of application integration beyond manufacturing. ERP is a renovated MRP-II system that involves graphical user interface, client-server architecture, and relational database management [1]. When implementing, ERP system distributes a unified database that stores all data for the software modules across an entire organization.

During the 1990s ERP vendors added more functions as add-ons to the base modules giving forth to the "extended ERP". ERP II, the web-based software, was first appeared in the early 2000s with the power of enterprise-wide inter-functional integration and coordination. The ERP extensions allow both employees and partners, such as customers and suppliers, to access to the system in real time. They were designed to integrate the enterprise's business processes to create a coherent information flow beginning with vendors, going through the manufacturing process, and finally ending with the consumer. Figure 1 summarizes the historical evolution of ERP systems.

Figure 1. Evolution of ERP

2000s	Extended ERP
1990s	Enterprise Resource Planning (ERP)
1980s	Manufacturing Resources Planning (MRP-II)
1970s	Material Requirements Planning (MRP)
1960s	Inventory Control Packages

2.3 Benefits and Challenges of ERP System

2.3.1 Benefits of ERP System

The benefits that a standard ERP system may bring to enterprises are evident in prior studies. Davenport (1998) claimed that implementing ERP systems brings many benefits to an enterprise, including reduction of cycle time, improving information flow, promotion of the e-business, and assistance in the development of new strategies. The need for accurate and real-time information and the standardization of business processes are the main drivers for ERP acceptance [28]. Markus and Tanis (2000) suggested that there should be a conjunction between expected ERP benefits and reasons for ERP adoption. Nah et al. (2007) cited the benefit of accurate and timely information, Poston and Grabski (2001) noted the resultant expected decision-making benefits, and Chand et al. (2005) discussed the reduced IT operating costs. Such benefits come from increased integration of applications and using ERP implementations as a platform for business process re-engineering [22]. Shang and Seddon (2002) reported that ERP benefits are distinguished into five major groups, include operational benefit, managerial benefit, strategic benefit, IT infrastructure, and organizational benefit. Garg and Venkitakrishnan (2004) identified the intangible benefits of ERP system implementation, include reducing quality costs, increasing flexibility, improving resource utility and information accuracy, better customer satisfaction, improved decision-making capability and vendor performance. These benefits, together with the other benefits proposed in the literature are summarized in Table 1.

Table 1: Benefits of ERP System

What Benefit	How
Reliable information access	Common database management system, accurate and consistent data, improved reports.
Avoid data redundancy	Modules access same data from the central database, avoid multiple data input and update operations.
Delivery reduction	Minimizes retrieving and reporting delays.
Cost reduction	Time savings, improved control by enterprise-wide analysis of organizational decisions
Easy adaptability	Changes in business processes easy to adapt and restructure.
Improved maintenance	Vendor-supported long-term contract as part of the system procurement.
Improved scalability	Structured and modular design with “add-ons.”
E-commerce, e-business	Internet commerce, collaborative culture.
Global outreach	Extended modules such as CRM and SCM.

Source: Rashid et al., 2002.

2.3.2 Challenges of ERP System

Table 2: Challenges of ERP System	
Challenge	**How To Overcome**
Time-consuming	Minimize sensitive issues, internal politics and raise general consensus.
Expensive	Business process reengineering cost may be extremely high. Cost may vary from thousands to millions of dollars.
Features and complexity	ERP system may have too many features and modules so the user needs to consider carefully and implement the needful only.
Conformity of the modules	The architecture and components of the selected system should conform to the business processes, culture and strategic goals of the enterprise.
Vendor dependence	Single vendor vs. multi-vendor consideration, options for "best of breeds", long-term committed support.
Scalability and global outreach	Look for vendor investment in R&D, long-term commitment to product/services, consider Internet-enabled systems.
Extended ERP capability	Consider middle-ware "add-on" facilities and extend modules such as CRM, SCM.

Source: Rashid et al., 2002

While ERP provides many obvious benefits, it does not mean that it has any challenges. Several ERP implementations failed in the past as these challenges, well sometimes firms believe that all challenges will vanish as soon as the project goes alive. ERP system integration can be an incompatible, complex, and arduous undertaking due to the fact that radical business process re-engineering and hesitant changes (organizational, managerial and cultural) are likely to follow [14]. ERP systems are seen as rigid, inflexible, and unable to support uncertainty. ERP customization to fulfill specific needs is a challenging and costly investment since ERP systems offer best practice solutions that may not necessarily align with the adopting enterprise's operations. Laukkanen et al. (2007) emphasized that customization also takes time and impacts on future upgrades of ERP systems. Therefore, ERP customization presents a dilemma. ERP is a long-haul investment in which it is difficult to realize the return on investment [6]. Implementation, maintenance, technical, and user support costs can make ERP costly. Elbertsen et al. (2006) concisely depicted that the challenges posed to size-restricted enterprises by costs associated with an ERP system are "High start-up fees and fees for annual maintenance may reduce the propensity to adopt the technology". Nevertheless, Marnewick and Labuschagne (2005) stated that the expected benefits of implementing an ERP system are critical in defining the purpose of the ERP system. Equey and Fragnière (2008) similarly concurred that the benefits of implementing outweigh the challenges of implementing and using an ERP system.

2.4 Success and Failure Factors of ERP System

ERP system is a helpful system in enterprises, if they have the ability to face the risks and the challenges of ERP, so they can gain from it. There are some organizations could not bear the hardships, nevertheless, many organizations are good with the ERP as a result of good endurance and confront the challenges. Results are discussable where this system runs and output might be going live or making issues. There are several critical factors such as the role of top management and a clear business vision contribute to the ERP success or failure. ERP studies on critical success factors highlighted that business process reengineering, top management perception and support, effective project management, user involvement, education and training of staff, and vendor support play certain roles to possess higher places through ranking [19]. On the other hands, the result of implementing ERP does not always prove successful. Several large enterprises installed an ERP system but had to discard their implementation [27]. SMEs are now starting to undertake ERP. Yet the efforts might be expensive due to the complexity of implementing the system. A load given of failure factors in SMEs by Noudoostbeni et al. (2009) had depicted that poor technology planning, user involvement and training, overruns of budget and schedule, and adequate skills availability may be considered as critical issues. In comparing critical success and failure factors of ERP system, the benefits of applying are able to revive adequate approach toward making clear decision in terms of enterprises' investment.

2.5 User Acceptance of ERP Systems

Despite several benefits of the ERP systems, the acceptance of these systems still depends on the fact that whether the systems can be successful in meeting the business needs and enhancing its efficiency. If the implementation of the ERP systems results in improved business performance, the acceptance of these systems is more likely to high. The use of ERP systems has changed significantly over the past few years to include any type of enterprise, regardless of industry, size, or location. Often, there is a tendency to group small and medium enterprises together in a homogenous group, even though these enterprises have different characteristics and unique requirements. However, the size of enterprises does affect ERP adoption and, by implication, acceptance. The study of Iskanius et al. (2009), exploring the experience of ERP system use in small enterprises, is a good case in point of ERP studies on size-restricted enterprise. It was found that ERP systems in small enterprises are relatively less utilized compared to the use of ERP systems by large enterprises. Iskanius et al. concur with the findings of Koh and Simpson (2005) that a lack of knowledge could be attributed to the lack of ERP system use within this category of enterprises.

3. SMEs and ERP Systems in Vietnam

3.1 SMEs in Vietnam

SMEs in Vietnam act jointly approximately all sorts of industries, in view of that, they have a diversion in their range and significance. SMEs are business establishments that have registered their business pursuant to law and are classified into three levels (micro, small and medium) in line with the sizes of their total capital or the number of employees (under the Decree No. 56/2009/ND-CP dated 30th June 2009 by The Vietnamese Government). The definition for each sector is described concretely as in Table 3.

Table 3. SME Definition in Terms of Sector in Vietnam

Types of SMEs / Sector	Micro Enterprises	Small-Sized Enterprises		Medium-Sized Enterprises	
	Number of Laborers	Capital (Billion VND)	Number of Laborers	Capital (Billion VND)	Number of Laborers
Agriculture, forestry, fishery	≤ 10	≤ 20	10-200	20-100	200-300
Industry and construction	≤ 10	≤ 20	10-200	20-100	200-300
Trade and service	≤ 10	≤ 10	Oct-50	20-50	50-100

Source: Decree No. 56/2009/ND-CP of the Vietnamese Government

According to data released by the General Statistics Office of Vietnam, the majority of active businesses in Vietnam are SMEs as defined in the Government's Decree mentioned above. The number of SMEs grows steadily from 2009 to 2016 (see Table 4).

A study which was conducted by Agency for Enterprise Development, Ministry of Planning and Investment of Vietnam reported that approximately 97% of enterprises from the total establishments in Vietnam which numbers 473,548 are SMEs in the three main economic sectors: manufacturing, services, and agriculture in 2016 (Vietnam SME White Paper 2014). SMEs use over 30% of total investments, employ over 77% of laborers and produce over 40% of consumer goods and exports. SMEs contribute 41% GDP and nearly 40% of the state budget (Vietnam Statistical Yearbook, 2016).

Table 4. Number of Acting Enterprises as of Annual 31st Dec. by Labor Size					
Year	**Micro Enterprises**	**Small Enterprises**	**Medium Enterprises**	**Large Enterprises**	**Total**
2009	162,785	74,658	5,010	6,389	248,842
2010	187,580	79,085	5,618	7,077	279,360
2011	216,732	93,356	6,853	7,750	324,691
2012	225,037	93,036	6,735	7,864	332,672
2013	252,291	104,499	7,838	8,585	373,213
2014	271,971	112,650	8,449	9,256	402,326
2015	295,061	122,214	9,166	10,042	436,483
2016	320,111	132,598	9,945	10,894	473,548

Source: General Statistics Office of Vietnam GSO

SMEs are the engine of growth in Vietnam as small business plays the same role in developed markets. Based on a report of Vietnam E-commerce and Information Technology Agency, it can be clearly seen that most enterprises have implemented information system business in varying degrees, and additionally, information system investment mainly concentrates on performance and delivers clear business results. SMEs play an important role to support the nation's economy – strengthen Vietnam's industrial base as well as provide the necessary supports to enhance Vietnam's development across the economic sectors.

3.2 Status of Applying ERP Systems in Vietnam

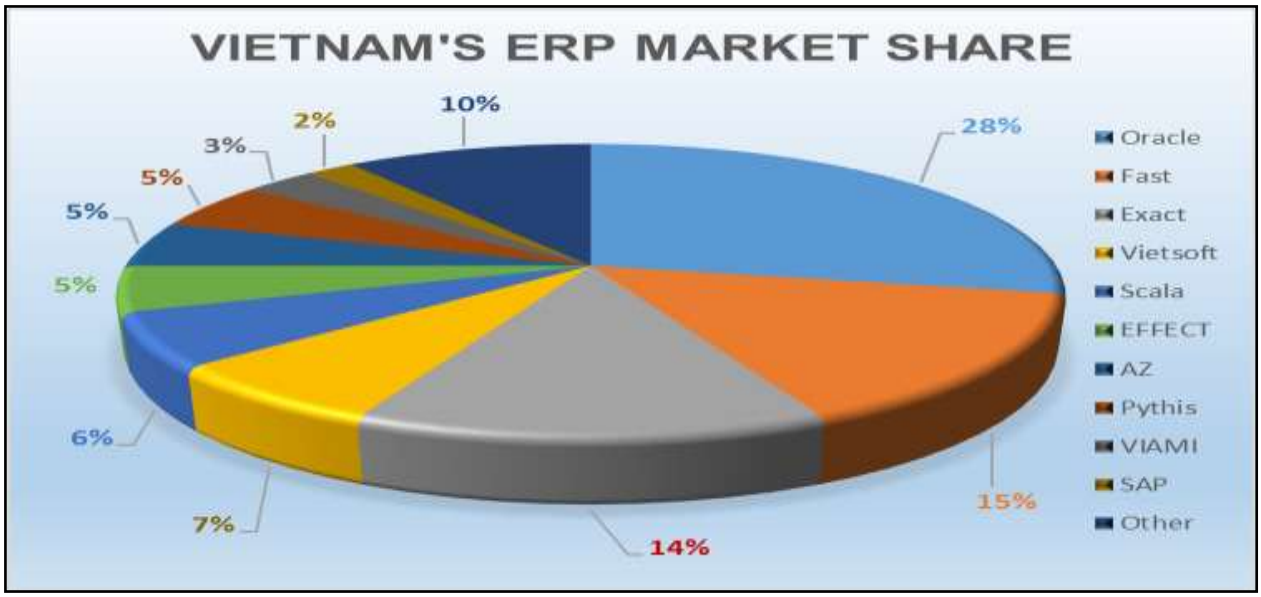
3.2.1 ERP Market in Vietnam

In the early 2000s, ERP solutions were first entered in the Vietnamese enterprises which were prospecting for ways to help their business more efficient and effective. While management experts considered this solution as "an important and essential tool for integration", the status of ERP market in Vietnamese enterprises is still limited. A survey carried out by the Vietnam Chamber of Commerce and Industry reported that by the middle of 2006, only 1.1% of the Vietnamese enterprises successfully implemented ERP solutions. Based on a report released by the Ministry of Industry and Trade, the rate of enterprises using ERP packages was 17% in 2014 (VECITA, 2014). When compared to many developed countries, the IS implementation among Vietnamese SMEs is considered to be at a basic level and the degree of ERP implementation remains a relatively low rate. Most enterprises are still not aware of the importance of ERP solutions as well as their material, technical basic and financial resource are not sufficient for implementing ERP. Some vendors, which provided ERP solutions, recognized that the number of experts in this field in Vietnam is quite low.

Yet Vietnam's ERP market is still small, it is a growing market that has changed dramatically, and the local market is increasing fast as enterprises recognize the benefits of ERP. There was a strenuous competition among foreign and domestic ERP vendors. Since some high-end ERP vendors such as SAP and Oracle entered the Vietnamese market, it was dominated by foreign solutions rather than local ones and Oracle was seen as the leading vendor in the ERP market in Vietnam. Figure 2 summarizes the ERP market share which indicates the percentage of ERP projects implemented in Vietnam from 2005 to 2015 (http://erp.mediaz.vn).

Until 2006, Oracle was the only ERP solution vendor for the whole market of enterprises in Vietnam. Oracle Suite combines the most complete and effective functions for managing human resources with open and flexible technology to enable enterprises to increase productivity, performance, and accuracy to promote their business strategies. To date, however, most of leading ERP vendors in the world have appeared in Vietnamese market, including SAP, IBM, Microsoft, Tectura… Despite the fact that these providers have put forth many efforts up to now, they have not gained a foothold in the Vietnam's ERP market.

Figure 2. Vietnam's ERP Market Share



3.2.2 Types of ERP Packages in Vietnam.

In Vietnam, there are some types of ERP packages which have been implemented such as Ordered software written by a group of native computer programmers; Ordered software written by a domestic company; Ready-designed ERP software developed by native companies; Low-level foreign ERP software; Medium-level foreign ERP software; High-level foreign ERP software.

There are two main ERP market segmentations in Vietnam. The first one focuses on ERP solutions for enterprises having a large size, and the second one for those which have medium or small size. The statistics from Table 5 reveals that the implementation average cost for an ERP project in Vietnam which applied foreign ERP solutions such as Oracle or SAP was from 3 to 21 million USD, whilst most Vietnamese ERP solutions cost under 100,000 USD (Effect Vietnam, 2016).

Table 5. Average Cost of Implementing an ERP Project in Vietnam

ERP Solutions	Average cost (USD)
SAP	16,800,000 – 21,300,000
Oracle	12,600,000 – 14,800,000
Microsoft Dynamics	2,600,000 – 3,000,000
Scala	7,000 – 200,000
Exact	50,000 – 100,000
AZ	70,000
Pythis	30,000
Fast	25,000
Effect	8,000 – 50,000
Vietsoft	6,000 – 40,000
Viami	2,000 – 30,000

Source: Effect Vietnam, 2016

3.2.3 Operational Definition of ERP Systems in SMEs in Vietnam

Enterprises in Vietnam are increasingly seeking ways to make the operations more efficient and effective. Deployment of an ERP system in-house can help an enterprise's administrators monitor, manage and improve their business practices and procedures. However, ERP solutions are still out of reach of many Vietnamese enterprises since the investment was too large for SMEs to deploy. Besides, ERP systems are extremely complex and difficult to implement, extend and customize. Also of consideration is the fact that an ERP implementation is done after a round of business process reengineering. It is observed that many processes in SMEs would not be amenable to change to suit standard ERP systems. Consequently, several SMEs do not involve ERP as a viable option. Instead of that, the best match is choosing a similar system replacing the fragmented legacy solutions.

This enterprise system package implemented in Vietnamese SMEs may be called as a semi-ERP or ERP-like system which is not a fully featured ERP solution. The ERP-like packages are generally provided by domestic vendors with far lower cost and ease to deploy. These systems compose of an integrated database and a model base, and could perform automatic execution of different activities, provide information required for decision making, for policy setting and for control, enable the discharge of the basic functional responsibility of each department, interact with the related modules of others departments as required and create/maintain the information support needed for the enterprise. However, these systems are mostly lack of production/manufacturing and/or material requirement planning module which are viewed as the heart of every ERP system (VECITA, 2014).

Vietnamese enterprises including SMEs presently consider that ERP systems might enable them to straighten out their business process and increase competitive strength in the market. SMEs are looking at ERP in a different light, as more affordable options become available. For the reasons mentioned above, the enterprise systems deployed in Vietnam's SMEs should be comprehended as the ERP-like systems.

Implementing an ERP system is considered an essential strategy for setting up new robust enterprise practices for improving the SME survival rate. However, SMEs show resistance to ERP adoption owing to the constraints and challenges involved in the global and domestic contexts, and these need to be explored from the perspectives of both ERP consumers, as well as vendors. To achieve this, in the next sections, the author identifies the constraints and challenges that could influence the ERP implementation by SMEs in Vietnam.

3.2.4 Constraints of ERP Implementation in SMEs in Vietnam

Implementing ERP systems generally requires significant input from the enterprise in terms of time, effort, and budget. Comparing to large enterprises, SMEs have limited resources, time, skills, and money. SMEs also lack the advanced technology, IT infrastructure, and the quality and quantity of available business data. These limitations become a barrier in implementing ERP or adjusting to ERP after its deployment. Several researchers have indicated different major constraints faced by SMEs in ERP implementation. The main constraints faced by SMEs for ERP implementation are shown in the following.

The first is long implementation time frame. For implementation, ERP system requires more time than any other software package. As a result, the extensive usage of SMEs' resources for a long time may negatively influence the core business of an enterprise.

The second is resource-intensive nature of a standard ERP package. ERP implementation requires intensive training, appropriate workforce allocation, and top management support and commitment. Also, this requirement becomes more accentuated in the case of requiring a customization of the ERP system.

The third is high cost of ERP implementation. ERP is known for its high customization, training, resource, and some hidden costs. Financial constraints play a key role in the rejection of fail implementation of ERP by SMEs. Besides, SMEs generally require solutions at a reduced price from a limited number of ERP vendors. It is, however, not possible for ERP vendors to offer all SMEs packages at a reduced price.

3.2.5 Challenges in Implementing ERP in SMEs in Vietnam

While opting for a business software application in general, and an ERP solution, in particular, is not quite simple, Vietnam's SMEs suffer more problems than most in this regard. ERP is a relatively new marvel in Vietnam, in consequence of that buyers often have hazards in evaluating the market for these systems and related services. SMEs have limited financing capacity to employ world's top ERP solutions and resultantly choose the domestic providers with lower cost. However, almost domestic ERP packages do not have production/manufacturing module, and the linkage among the modules is still relatively sparse.

Besides the fact that a noticeable challenge of ERP is that the cost spending for an ERP system is still extremely high for many Vietnamese SMEs, issues and lags in ERP implementation might be a major problem interfering the

long-term success of ERP adoption. Thus, ensuring a quality ERP system after being implemented is markedly important to SMEs in Vietnam. In some reviews of prior studies, adopted SMEs on ERP have carried successful and adequate experiences with local and international vendors. The various ERP implementation challenges faced by SMEs in Vietnam are indicated as follow:

ERP Selection: Most SMEs in Vietnam develop incomplete definitions of functional requirements. SMEs do not identify and analyze the ERP features based on their culture and environment. Executive officers responsible for implementing ERP in SMEs usually serve the implementation phase from their past experiences without developing or improving new functional requirements accroding to the existing environment. Even though, in some cases, top management is embraced in the selection of the ERP solutions without knowing the system characteristics, which regularly do not qualify the SME's requirements.

Internal Change Management: Effective change management is required for implementing ERP systems due to business process reengineering. Without a proper change management process, an enterprise will not be able to implement ERP successfully.

Flexibility and Competitive Advantage Decrease by Business Process Reengineering: SMEs often have unstructured processes that have emerged over years. Thus, in most SMEs, implementing an ERP system requires complete or partial business process reengineering, which affects not only the procedures but also the organizational structure of SMEs. It is observed that almost SMEs mainly concentrate on day-to-day survival instead of long-term strategies. Consequently, it is critical for SMEs to retain flexibility, by then, there is no need to rush for ERP to achieve any benefit against flexibility. Moreover, ERP implementation may reorganize business logic or create conflict with current business practices, which can, in turn, lead to the loss of competitive advantage of SMEs.

Customization: Leading ERP vendors generally have trouble in offering customization to SMEs. The ERP vendors often aim at developing the main target market from large enterprises. Thus, when SMEs require customization, the vendors take time to understand the business of SMEs and to design software packages. In contrast, SMEs find that small ERP vendors are insufficient (not competent enough) to match their requirements. Thus, they approach the top ERP vendors and finally end up with an understanding that no ERP vendor, either leading or small, can provide an appropriate solution for their requirements.

Confidentiality: Almost leading ERP vendors do not offer source codes with the ERP package offered to SMEs. SMEs are unwilling to disclose their confidential business information owing to the fact that leading ERP vendors are limited in number within the SME market, and they can also be a vendor for some other competing SME. A lack of sufficient details becomes a barrier for vendors in ERP customization with the anticipation to fully match the minutest of details of the requirements of SMEs.

Availability of Skilled Resources: SMEs commonly do not have business and technical specialists within the enterprises. The insufficiency of specialized resources required for initiation, implementation, and adoption of new technology, like ERP sytems, generally creates a negative influence on SMEs. Even when SMEs have skills, it is not easy for SMEs to retain experienced staff. This is due to their high demand and tendency to be approached by rivals.

Lack of Organizational Support from Top Management: Any ERP system implementation process is passed over a period of time. During the implementation period, the management interest and commitment of SMEs, often being the understanding of aspects of ERP implementation, like scope, size, and technical problems at the top management level, decline in most cases. Typically, there is a lack of commitment for allocating resources required for implementing ERP systems successfully.

Inadequate End-User Training: Insufficient training of the ERP system for end-users is one of the main causes for unsuccessful ERP implementation. A good training program for making use of the functionality and features of the ERP system is very important. Every SMEs' staff should entirely learn how to interact with the ERP system and business processes, as ERP will impact the operations of the whole enterprise. Inadequate training and/or lack of understanding of how ERP will change the current business processes which are hindrances to a successful ERP implementation.

4. Conclusions

ERP systems are different from other innovations of IT due to the socio-technical challenges that result from the complexity involved in the implementation process and the different types of users. Enterprises need to streamline processes to increase productivity, improve efficiency, lower costs, empower employees, and gain flexibility in today's dynamic business environment. To obtain all of these objectives and to achieve greater business value from their information systems, enterprises have integrated data across processes, which is the core goal of an ERP system. While there is an increase in awareness about ERP systems as well as their benefits, their acceptance and adoption are still slow among SMEs. An integrated ERP system is required to possess characteristics and criteria for

obtaining user information satisfaction, better system usage, scalability, flexibility, and full benefits that would drive its implementation among SMEs. Traditionally ERP systems are widely used by large enterprises for managing functional and operational areas of the enterprise. Yet, recently this trend is changing as ERP systems have also been introduced to the medium and small enterprise environment. ERP systems are now considered an essential enterprise management aid that may contribute to the sustainability and growth of non-large enterprises. The use of ERP systems within SMEs also leverages enterprise growth. The market for ERP systems for large enterprises has become saturated and ERP system vendors are progressively competing in developing and marketing ERP systems that cater to the needs of SMEs. Therefore, this study discussed an overview of ERP systems and review the application status of ERP to unearth the current information system challenges and constraints in SMEs in Vietnam, especially when SMEs were found to be difficult and expensive to integrate data with the growing franchises. The SME required a single integrated system to support its enterprise-wide dynamic processes consistently with a common approach and seamless access to a common pool of data. By identifying key barriers and constraints, SMEs adopted a new integrated ERP system that had resulted in some positive outcomes. The contribution of this study, from a theoretical point of view, lies in reviewing the application status in SMEs in Vietnam that could be essential in indentifying the acceptance and adoption of new information technology. This research was conducted to seek support for the ERP implementation to explore technology acceptance and utilization issues among ERP users in order to enhance the success of IS implementation in this arena.

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Authors' information

Minh Duc Le, She is a lecturer at E-commerce Department of Vietnam-Korea Friendship Information Technology College, Vietnam. She received her Ph.D. degree in MIS from Soongsil University, Korea, and prior to that, she earned B.A. from Posts and Telecommunications Institute of Technology and MBA from Danang University of Economics, Vietnam. Her major research interests include Digital Economy, Business Consulting, ERP, Behavioral issues in E-commerce.