

The Role of Enterprise Resource Planning (ERP) for Small and Medium Enterprises (SMEs)

¹Manouchehr Jofreh, ²Khadijeh Jahanian, ³Afsaneh Bahrami and ⁴Teymour Jabbari,

²Katayoun Alimardani, ¹Mostafa Mardi, ²Behzad Divsalar

¹Department of Management, Islamic Azad University, Central Tehran Branch, Iran

²Department of Management and Economics, Islamic Azad University,
Science and Research Branch, Tehran, Iran

³Department of Economic, Islamic Azad University, Khomeinishahr Branch,
Khomeinishahr, Iran

⁴Department of Management and Accounting, Islamic Azad University,
Jouybar Branch, Jouybar, Iran

Abstract: Enterprises nowadays strive to keep transforming their business processes in accordance with the fast changing customer demands so as to survive the intense global competition. Also, nowadays with progressing globalization, Small and Medium Enterprises (SMEs) cannot withstand in front of the severe competition and facing with increasing pressure to improve data management, increase transparency and standardize process. In this study an attempt has been made to highlight how E.R.P. is assisting to SMEs so that they can manage and analyze their business data very rapidly for quickly responding to business changes. How this Planning can be beneficial for strengthening activities related with SMEs in the current scenario. Findings show that by implementing ERP among SMEs, managers can handle challenging situations and overcome the global competitiveness.

Keywords: Competitive, Enterprise Resource Planning (ERP), facilities, small and medium enterprises

INTRODUCTION

Enterprise Resource Planning (ERP) systems experienced rapid growth in the 1990s because of the year 2000 problem and introduction of the Euro disrupted legacy systems. Many companies took this opportunity to replace such systems with ERP. This rapid growth in sales was followed by a slump in 1999 after these issues had been addressed (Monk and Wagner, 2006). Enterprise Resource Planning (ERP) is a technique involving the use of computer machinery for directing numerous functions like accounting, inventory control and human resource of any company. ERP is having its importance in every type of business activities; therefore, there is a need to emphasize its relevance in SMEs. In fact, their purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders (Bidgoli, 2004). On the other hand, Enterprise Resource Planning is a fully automated and integrated e-enabled system that encompasses all basic functions of an organization. It is a system designed for the optimal utilization of any enterprise's resources. It is a way to add various functions across dealing enterprise. There is a need of globalization to reach the international market and let

small and middle businesses enjoy the harvest of globalization. Implementing ERP in SMEs typically requires changes in existing business processes (Turban, 2008). In other words we can say that ERP is one of the most striking of those managerial waves, are comprehensive information technology packages built on the promise that all critical information should be totally integrated into one single information database. Value creation and economic returns is a difficult task for ERP because of the organizational changes needed by their implementation as well as the difficulty in predicting the return on investment. Small- and Medium-sized Enterprises (SMEs) plays a vital and pervasive role in Iranian economy. "Cost", "Complexity" and "Compatibility" are remarkable variables for adoption of ERP in this sector. Complexity and cost of ERP software reduces the willingness of organization to adopt ERP, the "Impacts" of ERP systems depend on organizational context and implementation process. A successful ERP system implementation in the SMEs can shorten production cycles, increases accuracy of demand for materials management and sourcing and leads to inventory reduction because of material management, etc., Moreover it can be used as a primary tool for re-engineering.

THE STATUS OF ERP IN SMES

The main argument of this study is that ERP could improve responsiveness and agility to change, but not to uncertainty. Therefore, SMEs could create a competitive advantage by being more responsive to change through the use of ERP as a production planning and control tool. These changes refer to any information update necessary, e.g., due date extension of customer order and dimension changes in product design, in the ERP system before generating purchase and work order. However, the changes are the effects from uncertainty. ERP systems could not deal with uncertainty due to its stochastic and unpredictable nature, which often occurs after purchase and work order are issued and released. As a result, many SMEs use a range of buffering or dampening techniques under uncertainty to be competitive in delivery. Bohórquez and Esteves (2008) stated that Enterprise Resource Planning (ERP) has significant impact on Small and Medium Enterprises. This study suggests that ERP could create a competitive advantage in meeting delivery performance in SMEs by holistically managing the underlying causes of uncertainties that significantly affect product late delivery in their specific manufacturing environments. Different types of uncertainty affect SMEs manufacturing environments respectively. It is important for SMEs in each manufacturing environment to recognize the significant underlying causes and tackle them with higher priority using appropriate buffering or dampening techniques. The findings on the significant underlying causes in this study can be used as a knowledge base for the SMEs in each manufacturing environment for uncertainty management. Since these findings are derived using a specific sample type, it is also crucial to recognize the business environmental factors considered in this study to find the condition which best suits the knowledge base. When the significant underlying causes of uncertainty are tackled holistically, the required changes in ERP systems would be reduced and the product delivery performance could be improved:

- Transferability, whether a given innovation is transferable depends on the preparations made and the effectiveness with which it can be communicated to potential adopters.
- Implementation complexity, is linked not only to the number of target users but also and particularly so from our point of view, to their organizational differentiation. The more business functions an innovation supports, the more difficult it is to ensure acceptance since the innovation must

address a number of distinct organizational subcultures.

- Innovation divisibility, streamlines potential difficulties involved in enterprise-wide usage. Divisibility is linked to innovation modularity and to opportunities for personalizing it.

Most SMEs operate in a highly dynamic world, where both internal and external requirements may change. Changes may come from the need to be more cost-effective, from customers in the form of requirements for new products and product variants, from government agencies in the form of regulations, or by advances in technology. Often the SME is the weaker part in a supply chain and thus the ability to adapt to changes imposed by customers or suppliers will be an important competitive factor. Most SMEs have utilized the flexibility that comes from having a lower number of orders, customers, employees, etc., when changing processes and practices. It is therefore important that this flexibility is retained when new IT systems are implemented. The use of commodity software, such as ERP systems, may force a more rigid structure on a SME and thus weaken their competitive advantage. In this way the SMEs will be able to utilize the computer as it was meant to be, as a programmable machine. Today, when most software comes in boxes, we tend to forget this opportunity. It is important that a company aligns its information systems with its business strategy (McGovern and Hicks, 2004; Levy *et al.*, 2001; Soh *et al.*, 2003; Yen and Sheu, 2004).

FACTORS IN A SUCCESSFUL ERP IMPLEMENTATION AMONG SMES

There is a small but growing literature on the impact of ERP systems; the majority of these studies are interviews, cases studies or a collection of case studies and industry surveys (McAfee and Upton, 1996; Davenport, 1998; Ross, 1998; Kearney, 2000). Once a small business has decided to install an ERP system and selected a vendor, there are a number of steps the company can take to ensure a successful implementation. The ERP implementation is more likely to succeed if the company positions it as a strategic business issue and integrates it with a process redesign effort. Of course, the ERP system should fit the company's overall strategy and help it serve its customers. It may also be helpful to find a passionate leader for the project and select a dedicated, cross-functional project team. The small business owner should make certain that these individuals have the power to make decisions about the ERP implementation process. That companies attack the implementation

project in short, focused on stages and working backward from targeted deadlines to create a sense of urgency. It may be helpful to begin with the most basic systems and then expand to other functional areas. Using change management techniques to manage the human dimension of the project, since ERP requires a great deal of support from affected areas of the company. Finally, once the ERP system is in place, companies need to interpret the data collected carefully and accurately if the system is to contribute to business planning. Although ERP systems may seem complex and costly, even small businesses are increasingly finding it necessary to invest in such technology in order to remain competitive. "ERP systems are being implemented today to provide a stable foundation for a growing number of businesses across all segments" The number of implementations down the supply chain and into Small and Medium-sized companies (SMEs) is steadily growing as the initial costs are reduced along with the overall cost of ownership. A standard ERP system may impose a rigid structure on a company and threatening the dynamic nature of many SMEs. Pre-configured and pre-tested versions are now effectively slashing the implementation costs while reducing the project complexity and risks. These new systems are providing a clean head start in development and delivering a stable and fully tested product to production. The methodology is continually evolving and the results are very positive.

Benefits and risks of implementing the ERP for SMES: Most of the times the technical benefits are concerning with the long term and the ROI, but companies should always see if an ERP helps to rationalize technical resources across the business. The whole company will be re-organized across process. Operational benefits should be the most significant through the whole implementation and the once that are much easier to evaluate. If an ERP changes the way of doing business in way that it takes its core competence, there is no use of being linked if the purpose of the company has disappear. The benefits on the financial are cannot be that great, especially when the main issue is not how much benefit will bring to the financial department, but more if there is sufficient resources to cover the cost of an ERP implementation. In addition, these benefits can vary from companies and depend on the functionality and applicability of each of these modules. Beside all the models benefits and despite the company does business, the overall benefit is the connectivity of information. According to Jutras (2007) Aberdeen's study of the role of ERP systems in globalization, enterprises that implemented ERP produced 66% more improvement in reducing total

time from order to delivery (Jutras, 2007). It has been found that, unique risks in ERP implementation arises due to tightly linked interdependencies of business processes, relational databases and process reengineering (Wright and Wright, 2002). There are three main factors that can be held responsible for failure of ERP system are: poor planning or poor management; change in business goals during project; and lack of business management support Over 70% of the Fortune 1000 companies have implemented ERP systems (Yen *et al.*, 2002). Many report successful implementation (Markus and Cornelis, 2000) even if success is a difficult criterion to define when it comes to ERP systems (Markus and Cornelis, 2000). The problems of getting ERP systems to work are well documented (Davenport, 1998; Parr and Shanks, 2000; Sarker and Lee, 2003; Scott and Vessey, 2000) and there are many failures even for large firms that have the resources needed to perform a careful planning and implementation (Bingi *et al.*, 1999; Griffith *et al.*, 1999; Hayes *et al.*, 2001; Mandal and Gunasekaran, 2003; Vogt, 2002). Small and medium sized firms may not have the resources to do a careful study of available systems, neither to plan nor to perform a low-risk implementation.

Challenges in front of SMES in the implementation of ERP: The explosion in the ERP business segment is accompanied by a lot of challenges. One of the key challenges faced by solution providers is that the SME sectors are poor paymasters. Vendors are offering ERP at an introductory cost. In fact, the cost of ERP software should not be viewed as an expense but as an investment, towards an ability that provides better profitability, market share and customer service. The costs will remain high but the advantages far outweigh the expense and ERP decisions are a "high-risk high reward" option. Considering the concept is just a decade old in Iran, SMEs are reluctant to invest in an ERP replacement as they lack domain-specific knowledge, technical knowhow and monetary resources to implement solutions. At the same time, educating these companies about the benefits of ERP is not an easy task. To conquer this problem, solution providers and implementers are spreading awareness in their target audience by organizing programmes, seminars and road shows in their target market. And then, there are the technical challenges of training, integration and implementation, which can take specific months.

CONCLUSION

From the above mentioned study we can say that ERP is the need of present scenario. ERP is however;

having cost related problem but it can provide assistance to deal competitive edge by reducing cost and giving compatibility to the market changes. This has further increased the significance of SMEs and the need to keep them technologically competitive. In the emerging global information economy, it is the smaller firms that could be the most significant winners. This, however, is to a great extent dependent on the quality and competitiveness of their products in the international market. E-business offers SMEs exceptional possibilities to compete on global markets and to weave strategic and networking alliances with other players around the world.

REFERENCES

- Bidgoli, H., 2004. The Internet Encyclopedia. John Wiley & Sons Inc., N.J., 1: 707.
- Bingi, P., M.K. Sharma and J.K. Godla, 1999. Critical issues affecting an ERP implementation. *Inform. Syst. Manage. J.*, 16(3): 7-15.
- Bohórquez, V. and J. Esteves, 2008. Analyzing SMEs size as a moderator of ERP impact in SMEs productivity. *Communications of the IIMA* 8, pp: 67-80.
- Davenport, T.H., 1998. Putting the enterprise into the enterprise system. *Harvard Bus. Rev.*, 76(4): 121-131.
- Griffith, T.L., R.F. Zammuto and L. Aiman-Smith, 1999. Why new technologies fail? *Ind. Manage.*, 41(3): 29-34.
- Hayes, D.C., J. Hunton and J. Reck, 2001. Market reaction to ERP implementation announcements. *J. Inform. Syst.*, 19(1): 71-98.
- Jutras, C., 2007. The 2007 ERP in Manufacturing Benchmark Report. Retrieved from: www.aberdeen.com/, (Accessed on: November 12, 2007).
- Kearney, A.T., 2000. Information Technology Monograph. Strategic Information Technology and the CEO, Agenda.
- Levy, M., P. Powell and P. Yetton, 2001. SMEs: Aligning IS and the strategic context. *J. Inform. Technol.*, 16: 133-144.
- Mandal, P. and A. Gunasekaran, 2003. Issues in implementing ERP: A case study. *Eur. J. Oper. Res.*, 146: 274-283.
- Markus, M.L. and T. Cornelis, 2000. The Enterprise Systems Experience-From Adoption to Success. In: Zmud, R.W. (Ed.), *Framing the Domains of IT Research, Glimpsing the Future through the Past*, Cincinnati. Pinnaflex Educational Resources Inc., OH, pp: 173-207.
- McAfee, A. and D. Upton, 1996. Vandelay industries. *Harvard Bus. School Case.*, Report No. (9): 697-1037.
- McGovern, T. and C. Hicks, 2004. How political processes shaped the IT adopted by a small make-to-order company: A case study in the isolated wire and cable industry. *Inform. Manage.*, 42: 243-257.
- Monk, E. and B. Wagner, 2006. *Concepts in Enterprise Resource Planning*. 2nd Edn., Thomson Course Technology, Boston.
- Parr, A. and G. Shanks, 2000. A model for ERP project implementation. *J. Inform. Technol.*, 15: 289-303.
- Ross, J.W., 1998. The ERP revolution: Surviving versus thriving. MIT White Paper, Cambridge, MA.
- Sarker, S. and A.S. Lee, 2003. Using a case study to test the role of the tree key social enablers in ERP implementation. *Inform. Manage.*, 40(8): 813-829.
- Scott, J.E. and I. Vessey, 2000. Implementing enterprise resource planning systems: The role of learning by failure. *Inform. Syst. Front.*, 2(2): 213-232.
- Soh, C., S.K. Sia, W.F. Boh and M. Tang, 2003. Misalignments in ERP implementation: A dialectic perspective. *Int. J. Hum. Comp. Interaction*, 16(1): 81-100.
- Turban, E., 2008. *Information Technology for Management: Transforming Organizations in the Digital Economy*. John Wiley and Sons Inc., Massachusetts, pp: 300-343.
- Vogt, C., 2002. Intractable ERP a comprehensive analysis of failed enterprise-resource planning projects. *Acm Sigsoft*, 27(2): 62-68.
- Wright, S. and A.M. Wright, 2002. Information system assurance for enterprise resource planning systems: Unique risk considerations. *J. Inform. Sci.*, 16: 99-113.
- Yen, H.R. and C. Sheu, 2004. Aligning ERP implementation with competitive priorities of manufacturing firms: An exploratory study. *Int. J. Prod. Econ.*, 92: 207-220.
- Yen, D.C., D.C. Chou and G.D. Chang, 2002. A synergic analysis for web-based enterprise resource planning systems. *Comp. Stand. Interface.*, 24: 337-346.