

ERP SYSTEMS – SOFTWARE SOLUTIONS FOR COMPANY'S MANAGEMENT

Sabina POPESCU

*The Bucharest University of Economic Studies, Bucharest, Romania
sabinapopescu2006@yahoo.com*

Abstract

The paper aims to outline some evaluation criteria of an ERP system as arguments of the benefits that it offers. At the same time it highlights a number of aspects to be considered when purchasing and implementing these systems, with issues of cost, time, personnel training and the advantages that a company can get.

Keywords: ERP systems, Business value, System integration.

1. INTRODUCTION

The complexity and volume of increasingly large flows of information in today's society can be a serious difficulty for any organization, regardless of size.

Today, not a lack of information is a problem, but large amount of these facing businesses. The management of this information takes different forms of which the best known is the Enterprise Resource Planning system.

Enterprise Resource Planning is a software-based management system that integrates all activities of a company such as manufacturing, human resources, accounting, and distribution. Its use by companies can lead to a significant increase in its business value.

However, a system as complex as ERP raises a number of questions to decision makers who want to implement and use of this type of system, such as: what is expected from this system, what are the steps for its implementation, which provider ERP is the best, what pitfalls can hide these systems, etc. Answers to these questions can make a business succeed.

2. SPECIFIC CONCEPTS OF ERP LITERATURE

One such type of software-based management system has been a concern for many researchers. It can make a classification of this literature in two categories: conceptual theory and empirical theory.

2.1. Conceptual Theory

Within it are three types of approaches. The first concerns the general aspects of ERP systems, regarded as a fundamental concept for organizations (Al-Mashari, 2003; Kerbache, 2002; Beretta, 2002; Hitt, 2002). These publications cover various aspects of ERP issues such as expectations, motivations, and business value of these systems.

A second type of approach is considering the implementation of ERP and covers issues that relate to factors that ensure success and system evaluation criteria, implementation complexity, cost, implementation strategies (Umble, 2003; Clemmons, 2001; Davison, 2002; Hong, 2002; Scheer, 2000; Willis, 2002).

The third type of approach covers different aspects of modeling tools that provide ERP evaluation criteria in the context of increasing business value to the organization (Sock, 2000; Park, 1998; Stensrud, 2003).

2.2. Empirical Theory

This part of the literature treats issues that relate to the implementation of ERP and its effects on the organization using specific tools of research, i.e. case studies, questionnaires and interviews. Were studied from different perspectives important issues concerning the organization based on the management change, the role of people in the organization and decision-making, business process re-engineering (Bernroider, 2001; Motwani, 2002; Schniederjans, 2003; Ash, 2003).

3. ISSUES TO BE CONSIDERED IN THE ADOPTION AND IMPLEMENTATION OF AN ERP SYSTEM

3.1. Choosing an ERP vendor and its implementation

The large number of suppliers in the market at present requires first categorize them that can be presented briefly as follows:

Tier I - suppliers for large companies with complex activities or large geographical spread; the complexity of these systems is high and also their price may be high.

Tier II - suppliers for medium size companies; complexity is low and the price is lower.

Tier III - providers for small companies offering less complex and cheaper systems, usually used for single-site installations.

Implementation of an ERP system involves the certain steps that require attention from management at each stage. At the first step occurs the project preparation where are set people roles, budgets and the project plan to be followed. At the second step there is an analysis of existing business process and offers the possibility of creating a map of the new process. At the third step, which is the realization, is tested each process designed in a conference room pilot. At the fourth step, the final preparation, occurs the entire project process integration and testing it with all the complete data in extreme situations. At the fifth step occurs go live of the system. The scheme is shown in Fig. 1.

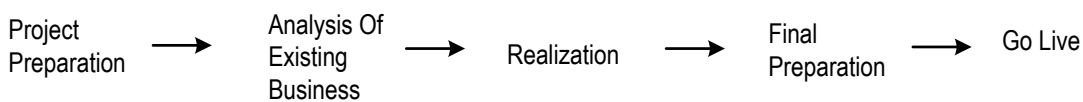


FIGURE 1 - THE FIVE STEPS OF ERP IMPLEMENTATION
Source: author

3.2. Establishing the benefits that can bring an ERP system

Better control of inventory such as parts, materials, supplies and equipment: ERP systems allow better tracking of items in the warehouse or in other locations. In this way eliminates the possibility of creating an overstock product, assemblies and avoid unexpected shortages. This is especially useful in production, services, and retail. In addition to matters affecting the quantity and location of items, through ERP systems can track and other items such as perishable items, expiration dates, warranties, maintenance schedules (machinery and equipment).

Shortened order-to-delivery time: Reducing delivery time is an important element for any organization. By integration of the activities of a company, ERP offers the possibility to reduce delays in creating and selling products and so improves customer relationships.

Reduced time spent on routine administrative tasks: By integrating applications employees, they can deal more on specific problems of the job and less time with administrative tasks, improving overall activity. This reduces the number of errors that is inherently repetitive by introduction of data.

More-efficient customer support: By construction, an ERP system allows the integration of business processes and thus provides customers with better support. The sales team can see better where the products are localized, which are in stock and which not, and which requires replacement or repair.

Better control of spending: ERP enables efficient activities concerning order purchase and payment of goods.

Increased accountability It can locate and better highlight the points where improvements can be made corrections or may offer prompt responses to customers.

Better overall visibility and control Integration activity offers the possibility to stakeholders to receive accurate and timely information for decision making. They can determine which the most efficient processes are or which the ones who need improvements are.

Enhanced competitive advantage The above are some benefits that ERP systems bring to the organization with the implementation. From their brief presentation, which is not exhaustive, come off the idea that ERP offers clear competitive advantages through flexibility relationships with customers, with market, through fair and accurate tracking of costs by highlighting activities that can be improved.

3.3 Elements of cost in evaluating an ERP

Traditional methods of evaluation and financial analysis are not always the best in evaluating ERP costs.

Total Cost of Ownership (TCO) can be expressed better the financial effort implied by an ERP. The purchase price represents a first step in establishing costs. In addition to this cost, should consider the time and effort to identify the ERP much more suitable for the company. Even when discussing the effort of their employees or outside experts, these costs are taken into account for determining the financial value. Must take into account the cost it involves implementation. Which can mean time and money. Employee training for the use of the software is a cost item consideration to determine the overall value.

Even after implementation, costs may increase with additional training of employees or because productivity does not increase immediately. Sometimes, the implementation may take longer than expected, which means more time and more money for consultants.

Calculations on the cost of an ERP can be offered by sellers and presented as ROI, for example. There are also a lot of spreadsheets, tools, guides that include the factors that can be directly measured up to the abstract ones. For a correct calculation, however, should not be overlooked benefits that brings by the ERP. For instance reducing the time for:

- Introducing repetitive data about activity to obtain reports.
- Use of time for the execution of routine tasks.
- Setting stock information related to: quantity, procurment and replenishment.

- Waiting and tracking deliveries.
- Making orders for supply.
- Less overtime by employees for proper completion of tasks.
- Fewer hours to correct errors.
- Reduce perishable items stock and removing expired products stock.

4. CONCLUSIONS

ERP literature is varied and includes multiple aspects. Different authors may have different criteria for determining the best ERP solutions, bringing extensive set of considerations or by detailing the facts presented.

Choosing an ERP depends on each company according to its business and its market presence. The successful implementation of an ERP specific steps depend on compliance project management. The costs involve the purchase and implementation of an ERP must be as comprehensive can be and should be evaluated and compared to the advantages that ERP offers.

Adoption of such a solution should not be viewed strictly as a software implementation. Success is related to development directions set by top management, strengthening market position facing the competition, cost reduction of basic activity. However a company that is thinking whether to adopt an ERP solution should consider the fact that maybe the competition has already done.

REFERENCES

- Al-Mashari, M. (2003). Enterprise resource planning (ERP) systems: a research agenda, *Industrial Management and Data Systems*, 103(1/2), p. 22.
- Ash, C. and Burn, J. (2003). A strategic framework for the management of ERP enabled E-business change, *European Journal of Operational Research*, 146(2), p. 374.
- Beretta, S. (2002). Unleashing the integration potential of ERP systems, *Business Process Management Journal*, 8(3), p. 254.
- Bernroider, E. and Koch, S (2001). ERP selection process in midsized and large organizations, *Business Process Management Journal*, 7(3), p. 251.
- Clemmons, S. and Simon, S. (2001). Control and coordination in global ERP configuration, *Business Process Management Journal*, 7(3), p. 205.

- Davison, R. (2002). Cultural complications of ERP, *Communications of the ACM*, 45(7) p. 109.
- Hitt, L., Wu, D. and Zhou, X. (2002). Investment in enterprise resource planning: business impact and productivity measures, *Journal of Management Information Systems*, 19(1), p. 71.
- Hong, K. and Kim, Y. (2002). The critical success factors for ERP implementation: an organizational fit perspective, *Information and Management*, 40(1) p. 25.
- Kerbache, L. (2002). Enterprise resource planning (ERP): the dynamics of operations management, *Interfaces*, 32(1) p. 104.
- Motwani, J., Mirchandani, D., Madan, M., and Gunasekaran, A. (2002). Successful implementation of ERP projects: evidence from two case studies International, *Journal of Production Economics*, 75(1/2), p. 83.
- Park, H., Kim, Y, Kim, C., Park, S. and Baik J. (1998). An object oriented production planning system development in ERP environment, *Computers and Industrial Engineering*, 35(1/2), p. 157.
- Scheer, A. and Habermann, F. (2000). Making ERP a success, *Communications of the ACM*, 43(4), pp. 57–61.
- Schniederjans, M. and Kim, G. (2003). Implementing enterprise resource planning systems with total quality control and business process reengineering: survey results International, *Journal of Operations and Production Management*, 23(3/4), p. 418.
- Sock, C. and Snyder, C. (2000). ERP Adoption: a technological evolution approach International, *Journal of Agile Management Systems*, 2(1) p. 24.
- Stensrud, E. and Myrtveit, I. (2003). Identifying high performance ERP projects, *IEEE Transactions on Software Engineering*, 29(5), p. 398.
- Stirna, J., (1999). Managing enterprise modelling tool acquisition process, *International Workshop on enterprise Management Resource and Planning System*, Venice, Italy, pp. 283–298.
- Umble, E., Haft, R. and Umble, M. (2003). Enterprise resource planning: implementation procedures and critical success factors, *European Journal of Operational Research*, 146(2), p. 241.
- Willis, T. and Willis-Brown, A. (2002). Extending the value of ERP, *Industrial Management and Data Systems*, 102(1/2) p. 35.