



The Strategic Importance of ERP System Evaluation and Selection

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An Enterprise Resource Planning (ERP) system is an integrated enterprise information system that automates the flow of material, information and financial resources among all functions within an enterprise using a common database. ERP systems are meant to replace older systems usually referred to as 'legacy systems' in order to help organizations integrate their information flow and business processes (Abdinnour-Helm *et al.*, 2003). An ERP system is, technically, the logical extension of Manufacturing Resource Planning (MRP II). From a limited inventory control focus, MRP II systems were expanded to include sales and operations planning, a financial interface, and different forms of simulation (Wallace and Kremzar, 2001). MRP II systems integrated the material planning with related business processes, and they were regarded as an effective planning tool for all resources of a manufacturing company. With the advent of advanced information technologies, a new challenge facing companies became that of controlling all the major business processes within a single IS architecture. Although MRP II was the logical progression for production and materials planning, companies quickly realized that profitability and customer satisfaction should be incorporated. These requirements generated the need for integrating capabilities such as finance, forecasting, sales order processing, sales analysis, local and global distribution, quality control, and reporting and monitoring tools.

Organizations worldwide have made substantial investments in implementing ERP systems, which, however, has proven to be an unexpectedly difficult process with uncertain financial benefits. A common problem when adopting packaged software is the issue of "misfits", i.e., the gaps between the functionality offered by the package and that required by the adopting organization. (Soh *et al.* 2000). One important reason for the misfit of ERP is the fact that many organizations choose to purchase standard software products based on business practices that have been deemed the most appropriate for achieving organizational goals. ERP products offer the integration of business processes and functions across the organization based on a way of working considered the "best" for particular industries by software vendors, management consultants and industry-based experts (Lee and Lee, 2000; Shanks and Seddon, 2000). These 'best' practices are typically designed with a software company working in a partnering relationship with a major industry customer to develop a package to meet the unique requirements of a particular industry. Despite the popularity of ERP packages, the problem with gaps between the espoused theory of a best practice solution and the theory-in-use experienced by those who install software with such a design remains (Shanks and Seddon, 2000; Robey *et al.*, 2002). This is because too often ERP adopting companies fail to understand the business requirements that the ERP systems are expected to solve and they install their ERP systems hurriedly without fully understanding the implications for their business or the need for compatibility with overall organizational goals and strategies (Hicks and Stecke, 1995). In most cases adopting companies choose their ERP system without following a systematic methodology, adopting some evaluation criteria without taking into account tailor made objectives that reflect specific needs and requirements. The result is disappointing performance of the system. Hence, an ERP system evaluation and selection methodology should be an inextricable part of any adoption strategy. This is a highly critical step because it combines the uncertainty of the match between company needs and vendor offerings, with the fact that once a solution has been selected, this decision will influence all of the company's major business processes over a long period of time (Davenport, 1998; Raden, 1999).

In this context we propose a model for ERP system evaluation and selection methodology, which integrates the necessary actions to be taken, in order to determine tailor made ERP objectives encompassing specific strategies and individual needs.

A Structured Methodology for ERP System Evaluation and Selection

As illustrated in figure 1, a company that wishes to choose an appropriate ERP system should primarily conduct an in depth analysis of its strategy and needs, based on six imperatives which represent the building pillars on which the investigation is actually based and are critical for implementation and operative success:

- o Strategy analysis,
- o Investment concerns,
- o Process assessment,
- o User needs identification,
- o Technology requirements,
- o Vendor analysis.

This analysis leads to a number of ERP objectives to be achieved, which integrate all the expected benefits pursued in order to derive value from the system in place. As depicted in figure 1, the methodology comprises a set of levers that constitute the mechanism for the realization of the identified ERP objectives. These objectives, in turn, can be used as evaluation criteria for a multiple criteria model of a strategic decision making process.

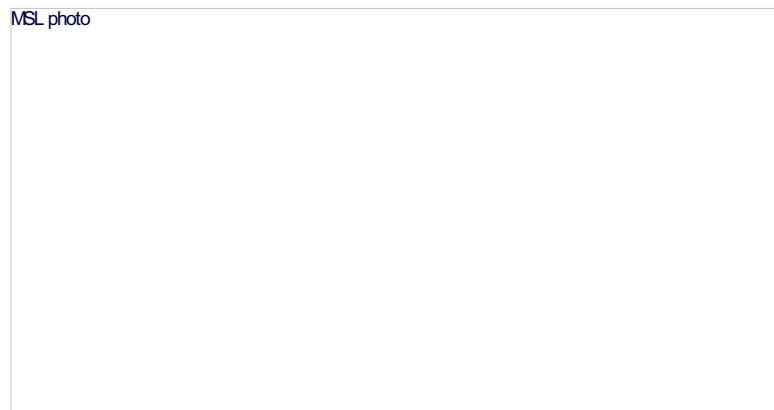


Figure 1. The ERP system evaluation and selection model

The methodology integrates the main activities, issues, dynamics, and complexities involved in the evaluation and selection phase, which is perhaps the most critical stage of the ERP implementation cycle, as it will affect all business operations. The ERP objectives should originate from individual organizational needs. An organizational analysis based on the six imperatives is flexible enough to translate the business needs into tailor-made ERP objectives. In this way it can be used in all kinds of organizations and industry sectors.

The framework can easily direct companies when they have to choose amongst alternatives of software packages. Moreover, it suggests a detailed list of objectives for system evaluation and selection and can potentially contribute to ERP implementation success because of its meticulous approach, which addresses and synthesizes all contextual issues relating to ERP system evaluation and selection.

To conclude, we argue that while software vendors recognize the industry context as influencing the appropriate 'best' practice design of an ERP system, they fail to acknowledge how the contextual specificity within an organization makes it difficult if not impossible to meet all business needs with a standard organizational solution. The six imperatives analysis can help decision makers recommending a solid methodology, which ensures that all requirements are met through a mechanism where actions are consistent with objectives and objectives are interrelated and closely connected to each other.

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