Enterprise Resource Planning (ERP): Implementation Guidelines & Issues

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Abstract: **In the present industrial scenario, Enterprise Resource Planning (ERP) systems are in great demand both by manufacturing and service organizations. It provides an integrated solution for information system needs of an organization. ERP system modules are highly complex and well integrated information system modules. The implementation of these ERP modules is a difficult task. It places great demands in terms of time and resources. Most of the ERP implementations programs fail because they do not realize predetermined corporate goals. This article identifies issues and procedures for implementation critical to a successful application of ERP.**

Key Words: **Enterprise Resource Planning; Project management; Business process re-engineering; Implementation procedure; Critical success factors.**

1. INTRODUCTION

ERP provides uninterrupted integration of all the information falling through an organization – financial and accounting, human resource information, and supply chain information system and customer information [1]. ERP integrates all functions and departments throughout an organization into one IT system so that employees can make enterprise wide decisions by analyzing enterprise information on each business operations. ERP provides a single database that contains all data for various software modules across the entire company [2]. All people in different departments can view the same information and update it. Data once entered in any of the functional modules becomes available to every other module that needs this data. ERP seeks to streamline, standardize and integrate the various operations and information runs in the organization by reenergizing its resources, that is, material, man, money and machinery, through information powered technology. Integration takes place in real time [3]. Most of the modules of an ERP software are state of art processes of sales, marketing and financial departments such as purchase order or customers order processing and fulfillment, shipping, invoicing, preparation of profit and loss statement, balance sheet etc.[4], that are common to all industrial segments. ERP also enables integration of different functional and geographically distributed enterprise units [5].

Figure 1 shows the various components of ERP and Extended ERP. Extended ERP components focus on such operations that

meet the organizational needs beyond the organization system boundary [6].
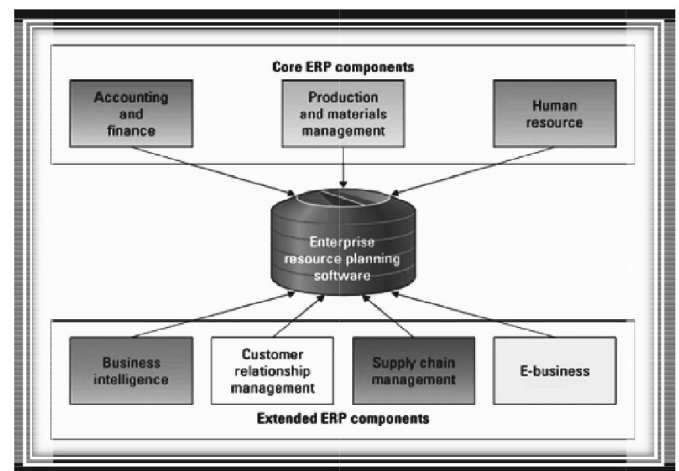
Figure 1: ERP and Extended ERP components

Although ERP systems provide competitive advantage, the high failure rate is a major concern. It is reported that nearly 70% of ERP implementations fail to deliver desired benefits and are ultimate failures. [7]. These projects delivered only 30% of projected benefit, costing 178% over the budget and took 2.5 times the implementation time.

Admitting the popularity of ERP, rate of failure of ERP implementation is high. Reports presented that ERP failure rates are in the range of 67%–90%. 35% of ERP implementations are not useful or cancelled [8]. According to a survey, 70% of ERP application fails to deliver expected benefits. Failure is a core part of ERP projects and success cannot be assured even in best desirable conditions [9]. Also ERP failures into their core operations lead businesses to bankruptcy or jeopardizing.

It is common belief that implicating an ERP system will improve organizations' performance. The achievement of overall cost savings and quality improvements relies on how fairly the chosen ERP system becomes fit to the organizational working culture and how well the ERP system streamlined with the strategy, business culture and structure of the

organization[10]. An ERP implementation edits backbone and front-end functions vigorously. Organizations select and implement ERP systems for many tangible benefits and strategic reasons. A number of benefits may be gained on successful running of ERP system. ERP system may edit organizational business process, efficient management of customer services and decision making. Although the ERP system is costly but organizations those have successfully launched ERP system in its place are gaining extra ordinary benefits[11].

Many ERP systems failed due to vague planning, poor management and lack of support of business management. The system that could not be completed on time and within the given budget got rejected by the companies and was not able to produce the benefits that lead to failure [12]. Organizations get hampered by the failure rate of ERP system implementation. The application of ERP system needs a typical change into the work processes and managed for its success. Researcher says that excellence of ERP systems is very much dependent on mutual understanding between the business processes and ERP system [13]. There are so many challenges that commonly faced by organizations during ERP implementation that had been addressed in past research. Leon [14] mentioned that 69%, 28% and 13% failure rate of the ERP systems are due to process, people and technological problems respectively. It shows that problems from people are more critical as compared to the others. It is noted that unfavorable governmental policies, organizations with inadequate IT infrastructure, and lack of IT/ERP experience and low IT maturity create problems during ERP implementation. Several factors may affect ERP adoption in organizations [15]. These factors include change management, lack of top management support business requirement gap, user involvement and vendor support that may consequently cause failure of ERP implementation.

This paper briefly discusses the various issues and guidelines for successful ERP implementation.

2. IMPLEMENTATION GUIDELINES

Here are certain general guidelines for successful implementation of ERP.

1. First the management has to understand the corporate needs and desired operational environment for ERP implementation.
2. A business process redesign exercise has to be done prior to starting ERP implementation.
3. Organizations have to select a good implementation methodology.
4. ERP project execution team has to train and give the education to the end users and employees.
5. Management has to establish good communication network across the organization [16]. They have to establish a project steering committee; an operational-

level project team, consultants from the vendor side and a full-time project manager and project leader.
6. Management has to provide a strong and effective leadership so that people down the line are well motivated.
7. Organizations have to acclimatize the new system and do the required changes in the working environment for the effective use of the ERP system.

For successful ERP implementation, high level of data integrity is required. Inventory records, bills of material, formulas and other data must be accurate as well as complete.

3. ERP IMPLEMENTATION ISSUES

The implementation of ERP system has been uncertain for many organizations. Seeing the many articles of significant failures, the implementation of ERP software and correlated changes in business processes has verified not to be an easy task[17]. Many organizations perceived that the implementation of ERP systems can be a tremendous disaster unless the mode is handled carefully.

There are several reasons and issues why many organizations that implement ERP never get beyond class C may be as follows:

• *Strategic goals are not properly defined*

Many times ERP implementation starts without a clear understanding of the assistance that will be achieved. As a outcome, they are not measured against the pre-implementation. Also organizations generally target too much on renewal the systems and functionality they have and fail to gain enough about the capabilities the ERP system can hand over to them. Also many organizations go through ERP implementations without a step-by-step roadmap, thus making it difficult to achieve steady improvement.

• *Poor project management*

Sometimes management is surprised by the size, scope, and complexity of an ERP implementation [18], due to which management sometimes does not have proper project management planning and control. Some important processes like documentation, redefining and integrating process, or testing before going live must be done.

• *Inadequacy in top management commitment and leadership*

Organizations' executives are not fully and willingly committed to the system[19]. They are not able to divine and plan for the changes necessitated for ERP, or not brutally participate in the implementation.

• *Lack of alignment of the ERP and business processes*

Many organizations try to pin point the opportunities for organizational growth and improvement and also foresee the software to cover up the shortcomings[20]. They do not evaluate their alive business processes. They have to do Business Process Reengineering (BPR) to minimize the risk combined with inadequacy in alignment of the ERP system and current business processes[8].

• *Selection of Poor ERP system*

ERP system implementation breakdowns also occur because the new system's output capabilities and input requirements are mismatched with the organization's alive business models and procedures.

• *Organization is not committed to upgrade and change*

People always feel convenient with the way of working and have scare and unfamiliar about alteration brought about by any new system[17].

Management must confirm that robust training and education must be provided by ERP software vendor to raise the knowledge base and comfort level for changing the system.

• *Failure to control due to project complexity*

Management normally loses the control on project due to project intricacy and complexity of ERP system implementation.

• *Imprecise and inaccurate data*

Inaccurate data listed into the database of ERP system will have a negative response throughout the enterprise because of the integrated nature of ERP[12]. It will be a reason for the system to lose its reliability. Inaccurate data will lead to errors in planning, anticipating and market management, production planning, capacity acquisition, and the like.

• *User hesitancy for new system*

Some employees may be not interested or feel frustrated by having to learn a new software system. They may feel that new system will be irrelevant and consume their precious time out of their schedule for training.

The users will also be concerned that their job may at worst be eliminated, or at best be changed from their "usual" way of doing things.

• *A great implementation team is not selected*

A great implementation team has to be selected for the proper implementation of ERP.

• *Lack of in house skills*

Consultants normally act as knowledge providers within an organization. An organization cannot fully depend and rely on consultants to implement an ERP system, as consultants have limited knowledge of the organization's operations . Close working relationship between consultants and the organization's project team will lead to a valuable skill transfer in both directions [13].

• *It's not priority number one*

Organization people who are required to be committed to ERP are already very busy with their first priority: getting customer orders, meeting payroll, meeting the production target, solving the quality issues, making shipments, keeping the equipment operating and running the business efficiently. All other activities become secondary [9]. Implementing ERP will not be priority number one for them, but it has to be fixed as a high preference within the organization, preferably the number two priority, jus after running the business.

4. CONCLUSION

The prime industrial information systems' software developers that emerged from the 1980s and early 1990s are representatives of industries as well as competitors in a common marketplace. ERP system developers have to downsize their products and offerings to be attractive to SMEs.

To minimize risk of *inadequacy in* alignment of the ERP system and business processes, management has to reengineer business processes, develop detailed specification of requirements, conduct system testing and monitor the system's performance prior to implementation. Project managers should exercise close control on ERP project management activities to ensure that the consultants' services are up to a professional standard, and BPR is conducted effectively and professionally. The organization could minimize the business risks associated with the ERP system failure through the formulation and effective design of a steering committee.

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