



Enterprise Resource Planning Implementation in Indian SMEs: Issues and Challenges

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ABSTRACT

To improve productivity and overall business performance, Enterprise Resource Planning (ERP) is one of the solutions for the Small and Medium Enterprises (SMEs) in order to face the global challenges. Though ERP systems, which evolved from Manufacturing Resource Planning (MRP II) systems, have many advantages, there are some failure stories also. The Indian firms and especially Small and Medium Enterprises (SME) are unable to decide upon proper implementation of these systems. On the basis of the case studies of ERP implemented Indian SMEs and in-depth interviews with the ERP vendors, this paper presents issues and challenges in front of Indian SMEs.

Keywords: Enterprise Resource Planning, Small and Medium Enterprises, Agile Manufacturing Business Process Reengineering.

1. Introduction

In the post liberalization and opening up of the economy business era, ease in international trade barriers, economic liberalization, globalization, privatization, disinvestments and deregulation have thrown several challenges to Small and Medium-Sized Enterprises (SMEs) in the fast developing economies like India. Compressed product development cycles, cut throat domestic and global competition, economic downturns, rapidly changing customer demands and volatile financial markets have all increased the pressure on SMEs to come up with effective and competitive capabilities to survive and succeed. Enterprise Resource Planning is often considered as one of the solutions for their survival. (Rao, 2000)

Up to mid-1990s, SMEs sector in India had operated under a much-protected economic regime characterised by limited competition and a highly regulated business environment. This business atmosphere had resulted in limited focus on process efficiencies, centralized control structures, highly formalized business settings and lack of professional business practices (Ranganathan and Kannabiran, 2004). However, following the economic liberalization and opening up of the economy to foreign Multi-National Companies (MNCs), Indian SMEs have been forced to adopt modern business practices and strategies, which in turn can provide SMEs a cutting edge over its competitors.

The authors in this paper have presented the issues and challenges in front of Indian SMEs about the benefits perceived and barriers observed in implementation of ERP in one of the industrially advanced city of India. The authors have presented this issue on the basis of discussions with the ERP vendors and few

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case studies of SMEs who have implemented ERP in their organization.

2. ERP Overview

2.1 Introduction

ERP system is an IT solution that helps organizations to achieve enterprise wide integration which results in faster access to accurate information required for decision making. ERP has its roots in manufacturing as the name is an extension of Manufacturing Resource Planning (MRP II) (Davenport, 2000). Today, an ERP system is considered as the price of entry for running a business and for being connected to other businesses, which allows for business-to-business electronic commerce (Boykin, 2001). Many multinationals restrict their business to only those companies that use the same ERP as them (Shehab et al., 2004). As SMEs have MNCs as their clients, they have to consider ERP systems as a requirement to allow for tighter integration with their larger counterparts.

Before ERP came into existence, different departments had their own software system to meet their requirements. This resulted in a fragmentation of information, as all of the information was stored separately on different systems in business units, factories etc. sometimes spread across the world. This made it impossible to get accurate information on time. In 1990s, globalization led to immense competition and companies, especially in the manufacturing sector, realized the need for more customer focus and shortened product life cycles. Corporations had to move towards agile manufacturing, continuous improvement of business processes and business process reengineering. This required an integration of manufacturing with other functional areas like accounting, marketing, HR, etc. This led to the evolution of MRPII to ERP systems (Sadagopan, 1999).

ERP combines all the business functions together into one single integrated system with a single central database as shown in figure-1. This system serves the information needs of all the departments across geographies, while allowing them to communicate with each other. As illustrated in fig-1, a typical ERP system consists of modules for manufacturing, Production Planning, Quality Management, Financial Management, Human Resource, Manufacturing and Logistics and Sales and Distribution. Once an enterprise wide implementation is in place, operating managers are relieved of routine decisions and they thus have the time to plan and execute long-term decisions that are vital for the growth of an organization. It leads to significant cost savings as the health of the organization is continuously being monitored. Though the cost of an ERP system is very high, it becomes insignificant in the face of the benefits a proper ERP implementation provides in the long run (Sadagopan, 1999).

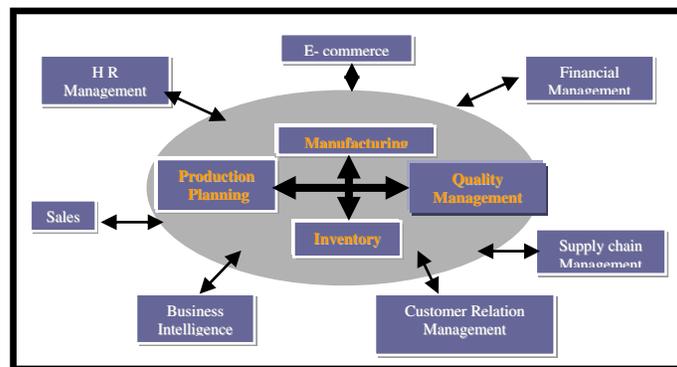


Figure 1: ERP Business Functions

2.2 ERP Benefits

The benefits of ERP in any organization are beyond doubt. Some of the key benefits are listed below (Garg et al, 2006)

- Reduced Planning cycle time
- Reduced manufacturing cycle time
- Reduced inventory
- Reduced error in ordering
- Reduced requirement of manpower
- Enables faster response to changing market situations
- Better utilization of resources
- Increased customer satisfaction
- Enables global outreach

2.3 Implementation

ERP systems affect both the internal and external operations of an organization. Hence successful implementation and use are critical to organizational performance and survival (Markus et al., 2000). ERP implementation brings with it tremendous organizational change, both cultural and structural. This is on account of the best practice business processes that ERP systems are based on. This calls for ERP implementations to be looked at from strategic, organizational and technical dimensions. The implementation thus involves a mix of business process change and software configuration to align the software and the business processes (Holland and Light, 1999).

There are *two strategic* approaches to ERP system implementation. The *first approach* is where a company goes for the plain vanilla version of ERP. Here the organization has to reengineer the business process to fit the functionality of the ERP system which brings with it major changes in the working of the organization. This approach will take advantage of future upgrades, and allow organizations to benefit from best business processes. The *second approach* is where the ERP system is customized to fit the business processes of the organization. This will not only slow down the implementation but also will introduce new bugs into the system and make upgrades difficult and costly. ERP vendors' advice organizations to take the first approach and focus on process changes.

One third of ERP implementations worldwide fail owing to various factors (Sirigindi, 2000). One major factor for failure is considering ERP implementation to be a mere automation project instead of a project involving change management. It is a business solution rather than an IT solution, as is perceived by most organizations. Yet another reason for failure is over customization of the ERP system. Therefore, organizations need to very carefully go about their ERP implementations, if they are to be successful.

Most large companies have either implemented ERP or are in the process of doing so. Several large companies in India, both in the public and private sectors, have successfully implemented ERP and are reaping the benefits. Some of them are Godrej, HLL, Mahindra & Mahindra and IOC. With the near saturation in the large enterprise market, ERP vendors are looking to tap the potential in the SME segment (Davenport, 1999). The spending on ERP systems worldwide is increasing and is poised for growth in the next decade (Yen et al., 2002). Some of the reasons for this are (Stensrud, 2001):

- Vendors are continuously increasing the capabilities of their ERP system by adding additional functionality like Business Intelligence, Supply Chain, and CRM, etc.
- Vendors have shifted to web-based ERP.
- The demand for web-based ERP will increase due to the perceived benefits of e-commerce.
- There are several markets that are yet unexplored.

According to an AMR Research report i.e. the Enterprise Applications Market Sizing Report, Enterprise Resource Planning vendor revenue across segments is expected to grow from \$28.8 billion in 2006 to \$47.7 billion by 2011.

3. SMEs and ERP

While many new SMEs start each year, nearly 50% cease to exist in the first 3 years of business itself. Though it is assumed that all SMEs desire growth, only 40% survive beyond 10 years. Majority of the firms do not think of long-term business strategy but focus only on survival. They think of change only when the business begins to fail as a result of not keeping track of the changing market scenario. The firms who survive and grow are the ones who have the ability to take risks and respond to the changing circumstances (Levy et al, 2005).

Though SMEs are risk averse, they are keen on adopting ERP systems for several reasons. Some of them are:

- Pressure from larger counterparts: Due to globalization, SMEs today operate in a wider arena. Majority of them have MNCs as their clients. These MNCs require SMEs to implement the same ERP system as them to allow for tighter integration in their supply chain, which permits them to design and plan the production and delivery so as to reduce the turnaround time.
- Peer pressure: Considering the growth in ERP implementation in the SME segment, several SMEs are adopting ERP systems as their peers have done so.
- To gain competitive advantage and respond quickly to the dynamic market scenario

An ERP system would allow SMEs to integrate their business functions. It would provide for a transactional system, which provides for a disciplined way of doing business. Thus SMEs would be able to increase their efficiency and productivity by implementing a suitable ERP system. Over the next five years, the ERP market in India is expected to reach Rs. 1,550 crore (\$341 million), according to International Data Corporation (IDC), a market research and analysis firm. Of this, the SME potential in India for the enterprise class is projected to be Rs. 728 crore (\$160 million) 47% of the overall market (Munjal, 2006). ERP vendors like SAP, Oracle, Microsoft, QAD etc. are all trying to increase their customer base in the SME segment and have products specifically designed to cater to the needs of SMEs.

- E-commerce benefits: This benefit will accrue from the close integration between large enterprises and SMEs.
- Cheaper and faster Internet: Easier access to Internet reduces the costs further.
- Cheaper hardware and software: With the advances in technology, the costs of both hardware in the form of servers, cables, switches etc. and software like databases have come down (Gable et al, 1999).

4. Issues and Challenges

Though the market for ERP seems to be growing, there are several issues and challenges one has to contend with when implementing an ERP system in the SME segment. Some of these are:

- *Awareness*: There is a low level of awareness amongst SMEs for ERP vendors, applications etc. Most of the time they do not even know what ERP systems are and what they can do. They consider ERP systems to be a magic wand, which will help solve all their business problems, be it in terms of quality, or process defects. ERP brings in a more disciplined execution of business process giving more transparency and visibility to the working of the organization.
- *Perception*: SMEs have the perception that ERP is meant only for large firms mainly owing to the high costs of acquisition, implementation and maintenance as also the complexity. Some of the SMEs even feel they do not need ERP.
- *Earlier Implementations*: SMEs have heard of the much-publicized failures in ERP

implementation, which have led firms to bankruptcy. Some SMEs who have implemented ERP earlier have failed. This has led SMEs to believe that ERP implementations are a waste of time and effort and can even lead to the demise of company.

- *Approach to implementation:* ERP vendors' advice SMEs to mould the business to ERP's way of working, considering that ERP systems bring with it best business practices. This is the plain vanilla approach that was mentioned earlier, which would bring down the cost of implementation. But most SMEs have processes that they have evolved over time and hold very dear to their hearts. As a result, SMEs are having the entire ERP system customized to meet their requirements. This would increase the overall cost of implementation. A good approach would be to keep the customization to a minimum.
- *Cost:* SMEs have less of capital than their larger counterparts.
- *Change management:* One of the major reasons why ERP implementations nationwide have been known to fail is due to the implementation being considered as an automation project instead of one that involves change management. This results in the system being put in place but not being used effectively due to people not ready to accept the change.
- *Limited resources:* Most SMEs do not have an in-house IT team. Due to this they have to rely on external agencies to help them and this adds to the implementation costs.

Before embarking on an ERP system journey, organizations have to ask themselves whether they are ERP ready. Some of the factors to be considered before starting an ERP system implementation are:

- Infrastructure resource planning
- Education about ERP
- Human resource planning
- Top management commitment
- Training facilities
- Commitment to release the right people for the implementation

These factors help organizations to understand their level of preparedness for an ERP implementation.

5. Concluding Remarks

ERP systems put in place a disciplined way of working and provide better visibility to the working of the organization. In India, SMEs are the backbone of the economy and are today faced with global competition. Therefore it becomes imperative for them to look for means of responding to the dynamic markets. ERP systems have become the most common IT strategy for most large companies. SMEs too are moving towards ERP systems. They need to adopt a proactive approach towards ERP and consider it as a business solution rather than a mere IT solution.

Though the ERP market is growing and ERP vendors have shifted their focus to the SME segment, there are several issues to be resolved. Firstly, SMEs need to be made 'ERP aware'. Vendors need to micro verticalise the ERP solution to better meet the requirements of SMEs. Since the financial resources of SMEs are limited, the cost of ERP system needs to be further reduced. SMEs on their part need to carefully evaluate their current IT systems and document its shortcomings while creating a wish list of what they want to achieve. While these are some of the issues to be considered there are certainly many more which the authors hope to find in their further study. The conceptual model of ERP implementation in SMEs shown in Fig-2 is the procedure to adopt by them for successful implementation.

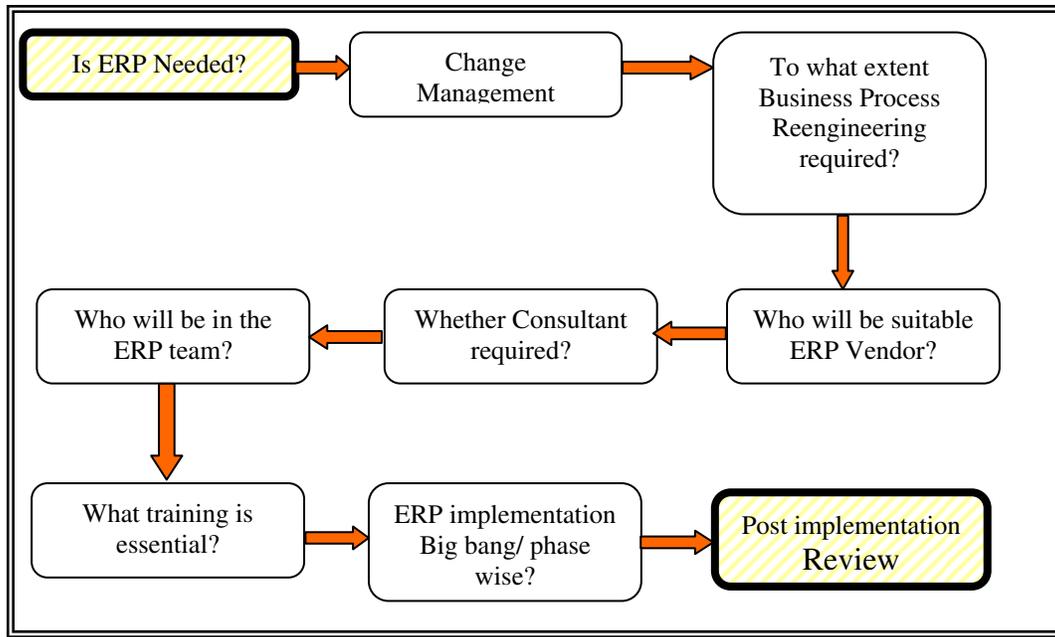


Figure 2: Conceptual model: ERP Implementation in SMEs

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