ERP Conception to Completion: Issues Experienced by Indian SMEs

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1. INTRODUCTION

Enterprise Resource Planning (ERP) system comprise a suite of software modules that lets an organization share common data and practices across the enterprise to access information in real-time environment(Marnewick and Labuschagne, 2005). ERP if implemented successfully can have a significant impact on organizational performance through automation and integrating the majority of business processes (Davenport 1998) on small, medium and large sized organizations.

Small and medium sized enterprises (SMEs) have become a major contributor to the economies of the countries throughout the world (Fillis *et al.,* 2004). Not only in developed countries but also in the developing countries like India, during the past 50 years, the small-scale sector has played a very important role in the socio-economic development of the country. It has significantly contributed to the overall growth in terms of the Gross Domestic Product (GDP), employment generation and exports (Economic Survey, 2003-04). This is the reason in studying these enterprises in this research and more importantly to understand how their efficiency can be increased through successful ERP implementation.

All over the world, a number of SMEs have begun to recognize the significance of ERP. In recent years, many ERP system developers and vendors have begun developing ERP software modules especially targeted at SMEs. For example, SAP, a market leader in ERP solutions has recently launched All-In-One package for 23 industrial practices for Asia –Pacific SMEs (SAP, 2006). However, examples of successful ERP implementation in the Indian SMEs sector are limited. ERP systems are complex. They require large investments in terms of capital, staff and management time (Adam and O'Doherty, 2000) and SMEs usually have limited financial resources, and less technological expertise and management skills (Blili and Raymond, 1993) compared to large enterprises. These constraints make it even more important for SMEs to implement ERP successfully because compared to large enterprises, it would be very difficult for them to survive a failed implementation (Muscatello *et al.,* 2003). Therefore, SMEs need to identify and understand the factors that will lead to successful implementation and those factors that may inhibit such success.

The literature review clearly indicates that most of the reported studies on these systems have focused on large ERP installations with individual investment costs of well over $ 100 million (Muscatello *et al.,* 2003). A literature review had revealed a gap in explaining ERP implementation issues faced by SMEs. In particular, there is very limited research on such implementation in the specific context of Indian SMEs. Given the importance of such firms to the Indian economy and, in turn, the importance of the Indian economy to the global economy, this is a significant gap, which this study seeks to address.

2. CONCEPTUAL FOUNDATION AND RESEARCH METHODOLOGY

The ERP systems experience cycle model (Markus and Tanis, 2000) has been adopted to classify implementation issues experienced by Indian SMEs during various phases of the implementation process. This process theory approach developed by Markus and Tanis (2000) focuses on the sequence of events leading to implementation completion.

The literature provides evidence that the definition of a SME generally depends on one or more than one factor (for instance, number of employees, sales turnover,

Table 1. Firm profiles

	Firm A	Firm B	Firm C	Firm D	Firm E	Firm F	Firm G	Firm H
Year of firm establishment	1999	1994	1985	2000	1986	1988	1997	1990
No. of employees	100	120	200	175	95	100	100	50
Industry	Retail	Retail	Retail	Manufacture	Manufacture	Service	Manufacture	Manufacture
Year of ERP installation	2004	2000	2006	2001	2006	2005	2005	2005
Implementation duration	9 months	6 months	6 months	8 months	8 months	8 months	6 months	1 year
ERP vendor	Oracle	Imaging pro	Wipro	SAP	Oracle	SAP	Movex	In-house
Interviewee	IT Head	IT Head	IT Manager	Manager IT	Manager -systems	General manager	IT Manager and user	Chief information officer and user

investments in assets, and so on) and it is country specific. For the purpose of this study, the Government of India definition of SMEs has been used. According to this, small enterprises are those with an investment of not more than Rs. 50 million(approximately 0.6 million pounds) and medium enterprises are those with an investment of over Rs. 50 million but less than Rs. 100 million(approximately 1.2 million pounds) in plant and machinery(Ministry of Small-Scale Industries, 2004).

The research questions of the study were investigated through qualitative methods. Fieldwork was carried out in India through semi-structured face-to-face and open-ended interviews with IT managers/Head/Deputy General Manager in eight SMEs in India. In addition to this, data was also collected through company reports and documents. All interviews were recorded digitally. The duration of each interview was about 60-80 minutes. The particulars of the SMEs interviewed are presented in Table 1.

3. SUMMARY OF FINDINGS

The section 3.1 explains the issues that Indian sample SMEs faced during the implementation process. The process of ERP implementation, the stages and their corresponding critical success factors have also been studied in this research. Based on the findings, an integrated model for successful implementation has been developed and presented in section 3.2. Due to the constraint on the words limit, the findings are discussed briefly.

3.1 Issues Faced by the Sample Firms

The major issues faced by sample firms in the implementation process has been examined and are then linked to the stages of implementation process based on ERP systems experience life cycle model(Markus and Tanis, 2000).

A. Chartering Phase

Detailed business requirements: During project planning stage, detailed business requirements based on business growth for the future were not looked into by most of the sample SMEs. Due to this, ERP customization was required later on and this increased ERP implementation costs. To tackle this challenge, SMEs should plan carefully what kind of changes in the business processes might occur in the next few years.

Financial support: Though ERP installation was a management decision in the entire sample of SMEs most of the IT Managers found it difficult to get the budget sanctioned. One respondent suggested that management has to be influenced and explained about return on investments for both short and long term.

Dedicated team: Dedicated team for the entire duration of the implementation process was among most common challenge faced by SMEs. The reason for this was the team members were given these additional responsibilities while they were still performing their earlier duties. Therefore, they had to perform extra work for the duration of ERP implementation. This can be tackled if team members can be allowed to work only on ERP implementation. This will lead to successful implementation within time limit.

Vendor selection: Most of the SMEs were not aware of the fact that appropriate vendor selection is an extensive process and it took more time to select vendor than as initially planned.

B. Project Phase

Mindset of users: Changing mindset of users to have ERP was pointed out by all the interviewees. This can be handled only if senior management gives a clear decision that everyone in the company has to accept it.

Update on project progress: Lack of effective communication on the part of management to update the progress of ERP project led to incomplete information with the employees of the firm. This resulted in the resistance from the employees at the later stages.

Training to team members: Lack of systematic and comprehensive training has been raised as one of the main issues. Respondents suggested that initial training should be conducted in different city where all the training members will be completely involved in training. Then, in-house training can follow as and when required.

C. Shakedown Phase

ERP benefits: Management and end users expect ERP benefits from the day one. It was a major task for IT managers to make them understand that it takes few months for ERP benefits to be realized.

Users feedback: Once ERP is implemented, users feedback plays an important role. Users generally do not give complete feedback. Due to this, it takes more time to make the corrections.

D. Onward and Upward Phase

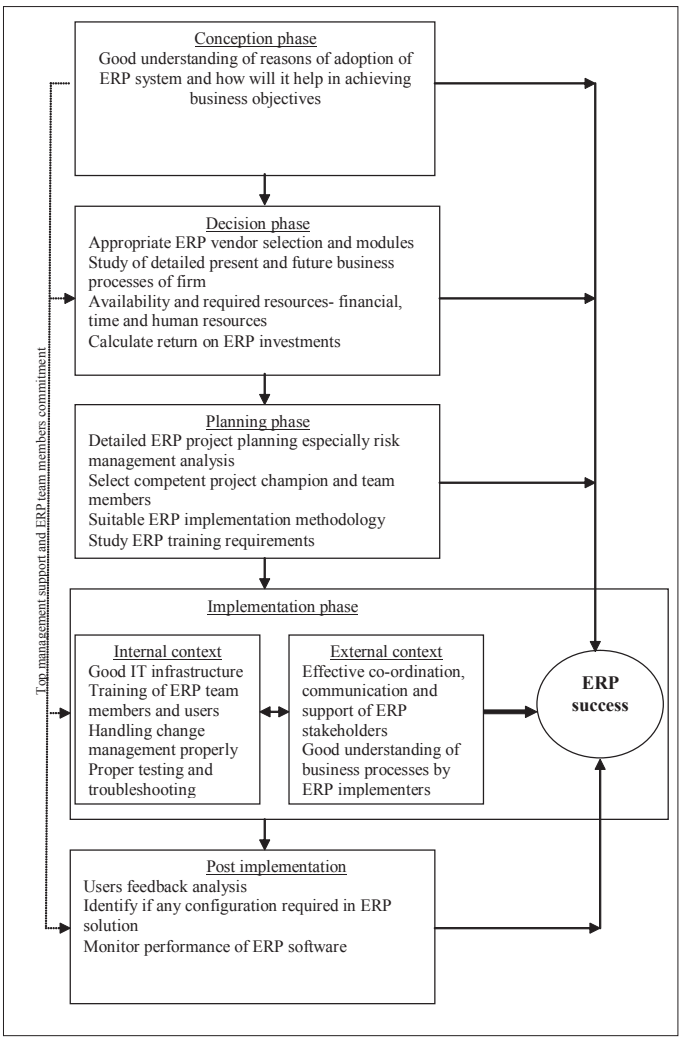
Performance measurement: The respondents recognize that there was no performance measurement technique accepted by the firm at various stages of implementation process. This would have helped the team members to know the status of implementation process as compared to planned initially.

Adaptability of new solution: Even when the system was in place, end users have to be convinced of the importance of the new technology from time to time.

3.2 An integrated Model for Successful ERP Implementation Process

Based on the results of the interviews, an integrated model for successful ERP implementation has been developed that is particular to Indian context (figure 1). This model summarizes and highlights only the most common factors leading

Figure 1: An integrated model depicting ERP installation stages and associated key success factors in Indian SMEs



Source: Compiled by the authors

to implementation success as identified by the respondents. All the interviewees emphasized the important role of top-level management during the implementation process. However, IT managers/consultants and users have a more significant role to play in implementation and post implementation phase respectively. Another interesting factor pointed out by most of the interviewees was that top management has to follow a firm approach to make ERP successful in Indian SMEs. This is mainly because resistance of users was found to be of major concern in most of the SMEs. The brainstorming sessions, training, involvement of users from the very beginning were some of the suggestions given by interviewees as ways of addressing the concerns of users. Other critical success factors have been mentioned in the figure 1.

4. CONCLUSION AND FUTURE RESEARCH

The findings of the study will assist ERP researchers and practitioners to be aware of challenges that can come while implementation process, and how these can be handled for ERP success. Specifically, an integrated model can be used by SMEs to gain knowledge of systematic stages and their corresponding critical success factors specific to Indian SMEs.

This work represents work in progress. In the near future, case studies will be conducted for further developing the framework based on the perceptions of senior management, IT managers and end users. In addition to this, quantitative surveys will be conducted to validate the findings.

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