Key ERP Implementation Issues in a SME: Case of an Indian BPO Organization

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ABSTRACT

Success and failure of ERP implementations are oft -discussed topics. The high stakes in implementation success have prompted much research to head out in search of critical issues that need to be addressed to bring implementation success that much closer. However, we suppose most research adopts a rather impersonal and external view of organizations. Although not discarding prior research efforts, the authors endeavor an internal perspective to gain valuable insights into implementation woes. This article bases itself on the authors 's personal experience in ERP implementation at an Indian service indutry (a leading multinational BPO organization). Joining a team of consultants from a reputed business solutions consultancy, the authors have participated in almost every process of the implementation. Through this article, we wish to discuss the issues that we came across during the implementation.

keywords: ERP implementation., ERP implementation issues, SME, BPO, service industry, India

1. Introduction

The onset of the 1990s has seen companies all over the world increasingly adopting ERP systems (Rajagopal, 2002). Although primarily developed for the manufacturing industry, the growth of the services sector has seen an emergent trend of ERP adoption by that industry.

While Scott and Shepherd (2002) believe that productivity improvements, competitive advantage, and customer demands are the top three business drivers for companies deciding to go in for ERPs; Rajagopal (2002) cites business process reenineering and uniform information system as the key factors.

ERP systems are large and complex, often requiring fundamental changes to the way organizations perform processes. They may also impact the organizational decision-making that underlies the processes (Holsapple, 2001). Many ERP implementations have been difficult, lengthy and over budget, were terminated before completion, and failed to achieve their business objectives (Peterson, 2001).

Although much research has been carried out on identifying and resolving the problem areas in ERP implementations, our belief is that most work is a post-mortem analysis; relying on interviews as the primary means of information gathering. By participating in the implementation process, the authors have attempted to personally observe and investigate ERP issues rather than solely relying on other' s (often biased) opinions, We also present our independent analysis of the issues observed, based on our personal experiences and interaction with professionals.

2. ERP Defined:

"ERP (Enterprise Resource Planning Systems) is a set of software modules lnked to a common database, and these modules can handle basic corporate functions such as manufacturing, finance, human resources, materials managements sales and distribution (Slater, 1998). Zheng (2000) defines ERP as a tool that helps companies cut costs and improves efficiency by intergrating business processes and sharing common resources across an organization.

ERP integrates the various function of an enterprise by maintainning a common database, and generates the high -level managerial reports required to drive decision-making(www.cio.com).

3. Benefits of ERP implementation:

There are many reasons why a company would implement enterprise solutions: the provision of a single source of data, the potential cost reduction (maintaning old computer systems can lead to enormous costs), and the potential gain in business integration while reducing indirect costs. If the sales and marketing systems have no connectivity with financial reporting systems, management can only make decisions by instinct of based on old information rather than according to a detailed understanding of up -to-date product and customer profitability (Davenport,1998). Vale'rie Botta-Genoulaza (2005) identifies ERP benefits as better information quality, single system/ interaction, real time accessibility, inventory reduction, productivity improvement, logistics/ order management improvement, cash flow and forecasts improvement.

4. Organization of ERP Projects:

www.cio.com classifies ERP implementation projects into 3 categories ....

1. The Big Bang-In this, companies cast off all their legacy system at once and install a single ERP system across the entire company. Few companies attempt this, because it calls for the entire company to mobilize and change at once. Getting everyone to cooperate and accept a new software system at the same time is a tremendous effort, largely because the new system will not have any advocates.

2. Franchising strategy - This approach suits large or diverse companies that do not share many common processes across business units. Independent ERP system are installed in each unit, while linking common processes, such as financial bookkeping across the enterprises.

3. Slam-dunk -ERP dictates the process desingn in this method, where the focus is on just a few key processes, such as those contained in an ERP system's financial module. The slam-dunk strategy is generally for smaller companies expecting to grow into ERP. The goal here s to get the ERP up and running quickly and to ditch the fancy reengineering in favor of the ERP system's "canned" processes.

5. Success Measures:

Successful implementation and use of ERP are critical to organizational performance and survival . Yet ERP success is difficult to achieve and failures of ERP projects could lead to serious damage to a company' s health, and even cause bankruptcy (Bulkeley, 1996; Davenport, 1998).

Previous ERP implementation success literature suggests seven measures used to judge ERP implementation success:

1. User satisfaction (Al-Mashari, 2003; Aug, 2002; Burns and Turnipseed, 1991; Mandal and Gunasekaran, 2002; Yusuf,2004).

2. Intended business performance improvements (Al-Mashari, 2003; Hong and Kim, 2002; Mandal and Gunasekaran, 2002; Markus, 2000; Yusuf, 2004).

3. On time (Al-Mashari, 2003;Hong and Kim, 2002; Malbert, 2003).

4. Within budget (Al-Mashari, 2003; Hong and Kim, 2002; Malbert, 2003).

5. System acceptance and usage (Ang, 2002; Yusuf, 2004).

6. Predetermined corporate goals (Al-Mashari, 2003; Yusuf, 2004).

6. ERP Implementation Issues:

A number of potential explanations for ERP implementation failure have been offered in the literature (Chen, 2001; Summer, 2000) that may broadly be classified as human/organizational, technical, and economic. While each set of factors is important, there appears to be a growing consensus among reseachers that human factors, more than

techical or economic, are critical to the success of ERP projects (Alvarez, 2002; Kumar, 2000; Mendel, 1991; Nah, 2001).

Some of the issues encountered with ERP implementations are related to motivation for their adoption: legacy system (poor data quality, interfacing), understanding business processes, infrastructure requirements, and customization of the new system. However, the main problems are related to people : changing work practices change management, internet staff adequacy, training top management support, consultans. The misconception is that ERP is a computer subject when in reality it is very much a people-related, business subject. The consequc of this misconception is that many enterprises have failed to implement and use ERP because if management is assumptions that it is just the current software and that it should be implemented just as other information system have been inplemented (Vale'rie Botta- Genoulaz, 2005).

Problems with the implementation of ERP system occur for a number of reasons. These reasons include:

- Business process change called for by the implementation of a ERP system (Al-Mashari, 2003; Bingi, 1999; Burns and Turnipseed, 1991; Hong and Kim, 2002; Malbert,2003; Mandal and Guasekaran, 2002; Motwani, 2002; Yusuf, 2004).

- Lack of top management involvement , data accuracy, and user involvement (Al-Masharim 2003; Ang,2002; Bingi, 1999; Hong and Kim, 2002; Malbert, 2003; Sum, 1997; Yusuf, 2004).

- Underestimation if training requirements (Al-Mashari, 2003; Ang, 2002; Bingi, 1999; Malbert, 2003; Mandal and Gunasekaran, 2002; Sum, 1997; Yusuf,2004).

- Cultural difference between the ERP and the

implementing company (Al-Masharu, 2003; Hong and Kim, 2002; Motwani,2002).

7. **Research Methodology:**

Lai and mahapatra (1997), their meta-analysis of IT implementation research, classified the case study as an empirical study and hypothesized that empirical reseach methods, such as field experients, case studies, field studies and lab experiments are proffered to non-empirical methods such as conceptual studies and reviews/tutrorials in IT implementation research. Case analysis is a good starting point in the inductive process of theory building. In other words, case analysis is the method if choice for inductive studies since it lets the researcher observe and gather information about the new subject being studied.

In our research, the authors were invited by a reputed Microsoft ERP cosultant (in India) to join their implementation project. The project involved implementing the Microsoft Great Plains ERP (along with all the all the add-ons that go with it) at the Indian site of their client; a leading BPO organizagion.

Referring to section 4, the implementation strategy followed could be viewed as one if the "Franchising" type wherein the ERP was first implemented in the Finance department of the client, and then in the HR department. However, in the context if the authors ' involvementy, the work dine concetrated of the implementation if the Project Accounting and Financial midules of the ERP in the Finance department of the client. By being full-time participants in a small implementation team of 10 professionals, the authors were able to get involved in all parts of the project, gaining valuable insights,

Figure 1 shows the various process in which the auhors have participated, while Table 1 highlights the time spent on each activity. We safety assume to have touched upon all the major areas of an ERP implementation project.
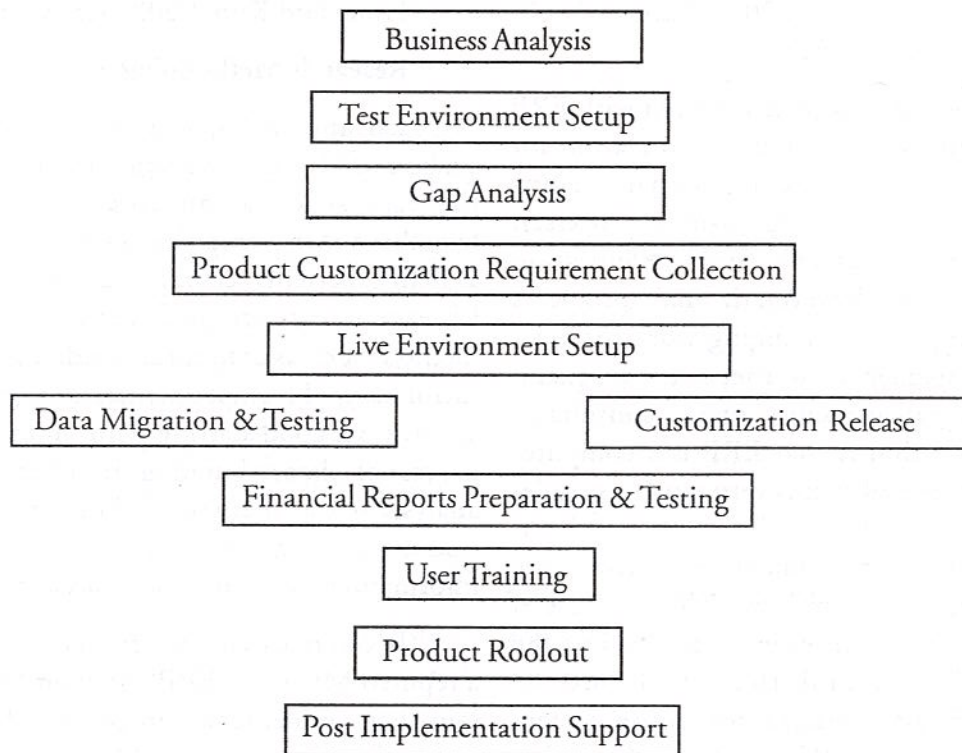
| Business Analysis |
| Test Environment Setup |
| Gap Analysis |
| Product Customization Requirement Collection |
| Live Environment Setup |
| Data Migration & Testing | | Customization Release |
| Financial Reports Preparation & Testing |
| User Training |
| Product Roolout |
| Post Implementation Support |

Figure 1: Work done

Activity	Timeframe
Business Analysis	6 weeks
Test Environment Setup	1 week
Gap Analysis	6 weeks
Product Customization Requirement Collection	4 weeks
Live Environment Setup	1 week
Data Migration & Testing	4 weeks
Customization Release	1 week
Financial Reports Preparation & Testing	4 weeks
User Training	2 weeks
Post Implementation Support	4 weeks

Table 1: Activity Timeframes

The entire suite of "Great Plains " modules purchased by the cllient is llisted below for completeness..

* System Manager
* Gemeral Ledger with FRx Desktop
* Multicurrency Management
* FRx currecy translatir
* Crystal Roports
* Receivables Management
* Payables Management

* Bank Reconciliation
* National Accounts
* Project Accounts
* Integration Manager
* Intercompany
* Human Resources

Rather than attempting to prove something the authors wish to identify and discuss ta major issues that popped-up during the ERP implementation. Being part of te implementation team themselves, the work presented os the record of the author's personal experiences in implementing the "Microsoft /Great Plains " ERP frim May-2004 to February-2005.

8. The Client:

The client (identified only as CX to maintain confidentiality) is a large and diversified BPO solution provider with four service divisions catering go some of the world's largest investment banks, diversified financial institutions, law firms, print and publishing houses, retail chains and Fortune 500 companies . Viewed as a market leader with a reputation for excellence in client-focused managment and execution of complex onsite-offshore services on a global scale, CX is a project-focused organization having over 2500 professionals worldwide. Cosidering its employee base and size of operations, CX may be considered as a medium-sized business, making an ideal case for a SME.

As CX's management team expects to acieve rapid business growth for te foreseeble future , a

critical element of their strategy is to implement a reliable, cost-effective business solution that will provide a platform to support their significant growth initiatives, strengthen financial controls, ad drive transaction processing efficiencies and reporting improvements.

8.1 Need for an ERP:

CX's business has seen a phenomenal growth over the recent years. The growth rate was expected to further increase, making existing systems unsuitable to sustain the levels of growth envisaged by the management. Some of the problems identified with the existing setup (within the Finance department) in 2004 were:

* Profitability analysis was done using spreadseet. Thus, a lot of time was consumed and the numbers of errors were high.

* Accurate reports on project information, such as costs, performance, etc. were not available. The spreadsheet reports were unreliable.

* Project information was manually uploaded into financial system. A lot of time was consumed and the number of errors was high.l

* Being a MNC, CX was experiencing difficulties in managing multiple currencies and subsidiaries.

* The limitations of segmentation in the Chart of Acconts were creating problems.

* It was difficult to track all project expences. Using spreadsheets, some costs slipped through, and impaced the profitabiliaty of projects.

* Difficulties were faced in managing project costs and budgets.

CX decided on implementing the Microsoft Business Solutions-Great Plains ERP, as oit was perceived to provide significant relief, and provide an ideal launch-pad to its growth initiatives. The features of the Great-Plains ERP, especially beneficial to CX are:

- Integrated System using Project Accounting and Financial accounting.

- Ability to maintain, track & report information such as utilization, cost, performance etc.

- Automatic integration of Project Accountng delaits to Financials General Ledger.

- Seamless integration of Multicurrency and Multicompany.

- Significant number of reporting combinations attributable to a robust Chart of Account.

- Efficient reporting.

- Ability to trank all Costs, Budgets and Expenses.

9. ERP Implementation:

Much research has advocated that ERP implementation involes reengineering the existing business process to the best business process standare (Bingi, 1999; Burns and Turnipseed, 1991; Holland, 1999; Mandal and Grnasekaran, 2002; Yusuf, 2004).

However, CX is a relativaly young company (just over 5 years old). As such, its management believes that most of its business practise reflect the latest the latest best practices in industry. Thus although ERP implementation gives an opportunity to reengineer business process. CX decided to place trust in its existing processes. This of course mandated a few major customizations ti the software. However, in the absence if any significant BPR (Business Process Reengineering), the ERP implementation process '(as far as the Finance department was concerned) at CX was a relatively short affair lasting just 35 weeks from May-to February-2005.

10. Observations and Discussions:

With this section, the authors list the varions problematic issues ecountered and put forth their recommendations on prevention and/or remedial action.

10.1 Resistance to Charge:

ERP implementation resulted in a shake of the rokes and responsibilities of CX's key employees. Due to the comfort level ganied by the employees with the current work-culture, they didn't want to change the way they did their jobs. They were fearful of the new software, and didn't understand how it would benefit them. Although all employees had heard of ERP s like SAP and Oracle, many didn't know what exactly an ERP did.

Before beginning the implementation process, employees should undergo 1-2 day sessions on understanding what an ERP is, with special emphasis on how it would help them and their company Preferably, the sessions should include some top management participation to underscore the importance the company attaches to the new system.

10.2 Fear of Layoffs:

Employees felt that their skills would become redundant and their value would reduce. This fear was compounded by a perception that by automating the manual tasks, CX would no linger feel the need to retain them.

It is important that employee-fears are addressed right at the start. An assurance from the top management that no jobs woukd be under threat from the ERP is a must. Futher, the new roles and resonsibilities that employees will be required to undertake need to by be clarified as early as possible. A salary hike or other such incentives elicits a better respose from the employees by signaling that their services would be of more value to the company once the ERP is implemented.

10.3 Employee Cooperation Problems:

The ERP implementation process requires absolute cooperation from the client's employees However, CX's employees viewed this as an impediment to their daily work. The problem was further aggravated by the knowledge that they themselves were aiding in the automation of their jobs.

The top brass must be roped in beforehand to get things moving smoothly. Weekly status reports need to be prepared and shared with the client's top brass, thereby bringing pressure on the employees . The importance of the top management in allaying fear of layoffs has already been stressed upon previously. Knowledge that the ERP project has the full support and backing of their top bosses, draws acceptance and support from the conception of the project.

10.4 Documentation Troubles:

In the implementation of the ERP, many instances of disagreement were noticed. ERP projects being long-drawn ones, there were cases wherein key members in the implimentation-both from CX as well as the implemenation team left their jobs, or were unavailable for extended periods of time. Another point to be noted os that is that almost compulsorily, every client comes back to their consultants to request more customizations, product upgrades and the likes.

The existence of complete documentation on the implementation helps mitigate many difficultes. In addition ISO and CMM certification, all require maintanance of comprehensive records of each and every activity. The benefits of maintaining elaborate documentation cannot be overemphasized.

10.5 Tug-of-war for Human Resources:

Case 1: The implementation process streches the limited Human Resource to extreme levels in SMEs (Small and Medium Enterprises). For e.g., although CX.s top management would ask its employees to fully cooperate with the consultants, CX couldn' t possibly half its business. Hence employees would still be burdened with very nearly the same amount of workload as before. A classic tug- of- war resulted, with CX's workload in one side, and the consultant's cooperation needs on the other.

Sharing periodic work-status reports with the client's top management, highlighting the delays due to under-cooparation from employess, enable the client to understand the seriousness of the coopertion issues.

Case2: Another typical observation was the tug-of-war between CX's and the consultant's HR department, as CX pictched for the consultant's key employees. The desire to drive down consulting costs, and improve their talent pool drove CX to attempt recruitment of the best from the other side. The heat of the ERP market got to CX as well. Having been through an entire implementation cycel, CX's employees were offered lucrative careers by other companies (including ERP consultants).

The HR moves must be pre-empted and urgent steps taken to gain the loyalty of employees. Replacing employees who have already been trained in the use of the ERP can prove to be a costlier affair than simpler measures to win employee loyalty (For eg., salary hikes, etc.).

10.6 Customization Problems:

It must be agreed that tinkering with a tightly integrated ERP system is a rather risky affair. A minor error could have a cascading impact on the system. Even after taking all precautions and performing rigorous testing, some errors are bound to linger. Although most errors would be identified and rectified through testing, a tester cannot possibly visualize and simulate all possible real-life situations. In CX's case, some errors were only discovered during the actual use of the customized software.

A throug evaluation of the ERP features before signing the contract is necessary. Care must be taken to select an ERP whose processes closely match the business processes of teh company to minimize the customization needs. It is also that the cost and time consumed in the customization can be redued as much as possible.

If an ERP has alredy been selected, a good suggestion would be minimizing the number of customization, by creatively mapping the business needs with the ERP. Although simple customizations such as a screen text change on a local field wouldn't cause any issues, it is the

customizations that seek to interfere with the remembered that more customizations make the upgrading of an ERP package difficult because the customization would have to be done all over again in the newer version.

10.7 Cost escalations:

The cost of an ERP implementation is almost always understimated. The fact that exact costs cannot be predicted before the implementation concludes is due to the simple fact that the customizations required cannot be predicted. Other factors resulting in cost overruns are time-delays, decisions to purchase additional modules of the ERP, and underestimation of the hidden cost like training, data migration, implementation teams, etc.

Although better planning would prevent unexpected cost-expectations, no significant cost-savings would result. Instead, the detailed planning itself would consume loads of time and money. Consequently, many SMEs prefer to neglect detailed prior planning, to making decisions on the fly. However, unless a reasonable buffer offunds is maintained to tide over the cost-escalations, the ERP project may have to be scuttled mid-way! A rule of thumb followed in investing a reasonalbe amount of time in planning to atleast be aware of the possible reasons of cost-escalation, and keep the budget open to double or even triple the initial estimates.

10.8 Inadequate Top-Management Support:

It was observed that the top management support was not adequate enough. Although the management was quite enthusiastic about the ERP, it was perceived that they lacked the commitment required to motivate their employees to wholeheartedly participate in the implementation process.

ERP implementation can be successful only if there is a strng and committed leadership guiding, the initiative (Sarker and Supreteek, 2003). ERP requires the complete cooperation of employees from all segments of the business. Top management support plays a critical role in settling disputes and in providing clear direction.

Even before the implementation begins, the company must make the top management aware of the importance of their support in the success of the ERP adoption.

10.9 Poor Training Support:

CX budgeted a time of just 2 weeks for educating its employees on the ERP. And this time wasn't mean to be full-time! On a average only 2-3 hours were invested daily by an employee in training! The repercusions were felt after the ERP rollout, when the users were asked to switch over to the new software completely. At this time, employees were apprehensive about using the new system, committed a number of errors and generally were a rather confused lot. It took a lot of support from the implementation team to instill a degree of confidence in them. In the end, the rollout took 2 weeks' time!!!

No better suggestion can be offered than a higher investment on training. A good training program saves a lot of money spent later on to rectify this blunder!

10.10 Data migration bases:

CX underestimated the time and cost of migration of their data records from the legacy systems to the ERP. Much of CX's data held in legacy systems was found to be problematic. A number of issues relating to duplicate, dirty and redundant data came up when we attempted to move the data to the ERP. It took a lot of work from implementation team as well as CX's employees to identify the duplicate, dirty and redundant data, and decide what to do with it. A lot of energy was also spent in codifying the data to be compatible with the ERP. We also faced issues dueto the cultural differences bwtween India and the US. For e.g., Indian-styled addresses, which are typically much longer than those in the US, couldn't find support from the ERP (requiring yet another customization).

Just like training, most companies underestimate their data migration needs. The top management must be convinced to build more realistic schedules along with appropriate budgetary support to prevent later issues that literally destroy the implementations schedule.

10.11 Post-Implementation Shortage of Human Resources:

CX couldn't send its key ERP project people back to their original work. Instead those employees seemed to be stuck in a whirlpool, trying to resolve the continuously popping-up ERP issues. Consequent to the ERP implementation, there were also so many new duties that needed to be addressed.

It is imperative that additional human resources be recruited well before than start of the ERP implementation. Another benefit of this move is that, this also sends a signal to theexisting employees that rather than lay-offs the new system requires more personnel.

11. Conclusion:

Although we don't go by any stretch of imagination discount the importance of the techno-economic factors, the authors believe that as far as their work is concerned, the human factors were observed to be the most effective speed-breakers in the ERP implementation process. Effective and early planning and resolution of these issues could go a long way in realizing a rapid ROI with ERP implementations.

Conceding that it would be grossly incorrect to claim that the observations made in this article comprehensively represent the state of affairs in India, we believe that they should give atleast a fair idea of what it takes to implement an ERP in an Indian service industry.

Historically, the road to salvation has never been a cakewalk! The ERP implementation-path is no exception. The path is strwn with obstacles. Successful navigation requires tremendous planning, introspection, determination, perseverance and resource-mobilization

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