

## Strategic ERP For E-India: A Path to Digital Democracy

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### ABSTRACT

In today's dynamic and turbulent business environment, in order to become globally competitive, many companies are trying to get closer to the customer and deliver value added products and services in the shortest possible time which demands integration of business processes of an enterprise[1]. Enterprise Resource Planning (ERP) is such a strategic tool which helps the company to gain competitive edge by integrating all business processes and optimizing the resource available. ERP affects the entire enterprise. Typical benefits are: streamlining and integration of operations, reduction of cycle time and overall cost & time reduction. If these kinds of benefits are to be realized, not only the entire organizational processes but also the government policies toward business communities at all levels, are to be reviewed, automated and integrated. The Challenges of introduction of ERP in India are in general the same as in other countries. This includes change management, organizational intervention, shifting from a "function view to process view" and faith in packaged software rather than custom built software. The "special challenges" in India arise from the existence of large IS shops inside many Indian corporations who may view ERP as a threat to their very existence. The Indian software companies also see a threat to their project based software business in ERP. Traditionally, organizations in India depended more on IS professionals rather than business professionals for commercial software development. ERP places more value on domain-knowledge of the functions rather than IT skills. This calls for a "MIND-SET CHANGE", which is a challenge[2] [3].

Last, but not the least, it is the lack of communication infrastructures, which is often necessary to implement ERP. Like majority of the developing countries, India should prepare itself to face a grave challenge of reaching out to its lower or middle class business people, with all the offerings of technological revolution, to bring in "Digital Business Democracy". This paper is intended to give a bird's-eye view of the emerging ERP business world in India, its structured evaluation criteria, as well as the actual required criteria for ERP and suggests guidelines for successfully carrying it out.

### KEYWORDS

Enterprise Resource Planning, Supply Chain Management, Customer Relationship Management, Change Management Software, Business to Business, Business to Customer, Business Process Re-engineering, Critical Success Factors.

### INTRODUCTION

Business environment has today been extremely competitive in most part of the world. As an Indian, we are harnessing the passion of success with morality, business with values, knowledge with machines and data with quality around the globe, to unleash innovation and imagination, to give world class service to our customers that truly belong to every world class citizen. The infusion of technology in business has changed the modern enterprise functions in India. With growing pressure to deliver in the high-stakes, high-risk marketplace, most organizations use some or the other form of enterprise that help them to work faster, reduce cost and be more competitive.



[Fig. 1 Components of ERP Technology]

Enterprise Technology comes in many forms. First, having individual software to handle different tasks (e.g. one each for human resources, purchase, inventory, manufacturing, processing orders, receipt and payments etc. or go for an Enterprise Resource Planning (ERP) solution that combines multiple functions in a flexible package[4]. Fig.1 shows the core asset-tracking application that forms the back-bone of ERP suite. An ERP can result in a synergistic fusion of marketing, purchase, R&D, production, quality control, distribution and other cross functional activities. Organizations today use ERPs to bring various departments onto the same platform. This is because any ERP has a number of embedded business functions that can be simultaneously run throughout the enterprise. Thus Organizations which have several

products, complex schedule and spread operations can tremendously benefit by implementation of ERP. The implementation requires inspecting every link in the operational and decision making chains and then modifying them to take advantage of the new systems [16]. The biggest advantage of implementing an ERP solution is that it forces an enterprise to institute a proven set of business process, rather than reinvent the wheel. ERP systems allow users to change functionality as needed to adapt quickly to changes in their business.

An ERP can also be customized to handle different tasks and different industries. From processing invoices and filling reports to prescribing routine medication and managing the equipment during a stage show, it can bring in high “task maturity” in the organization. For example, 4004 incorporated has developed a proprietary ERP solution with the help of an in-house development team. This has “eradicated several overlapping process and put all departmental communication, both internal and external, on a common platform” [5]. The basic point is that as companies open their systems up to other companies be their suppliers or customers, the inward looking nature of core ERP systems and the “one vendor owns everything” philosophy, breaks down. Core systems now have to be redefined and extended to embrace the Internet, new virtual supply chain models, customer relationship management (CRM) systems and the new business to business (B2B) and business to customer (B2C) e-commerce models. The benefits of effectively meeting customer demands through Internet technologies and enterprise resource planning include sustainable development of company, increased profitability and happy customers[9][10].

The Indian market is seeing a lot of ERP activity at present, with public sector units (PSUs) being seen as the next big market. ERPs constitute a fast growing segment of industry and are implemented across the board and not just in profit driven Business Corporation. Today several organizations need to implement IT solutions, including non-business enterprise as customized Healthcare IT solutions being implemented in hospitals such as Apollo and Wockhardt. NGOs such as CRY have also implemented customized ERP solutions.

### DOWNSIDERS IN ERP IMPLEMENTATION

While the glorious saga of ERP implementations is fine, they have not been without their share of problem areas [3]. Some of the major hurdles experienced by organization implementing enterprise applications include:

- ✚ **Elongated Implementation Time:** It often leads to fatigue, stressed and dubious state of mind in users which affect the growth period of ERP, to a greater extent.
- ✚ **Improper Gap Analysis:** Lack of perfect tuning between IT professionals, Business owners and End users only compounds the problem, at the other side.

- ✚ **Lack of Proper Monitoring System:** It hampers the quality of the end system. As most of the ERP systems are not flexible, not ready to upgrade automatically in the varied system lead to the improper flow of information that hampers the quality decisions taken in time.
- ✚ **Unkempt Knowledge Base:** Companies often lack tools to capture and record the knowledge gained during implementation and further use of this as checklist. Thus redundancy of the same process often wastes the precious time and resources.
- ✚ **Inadequate Training & Documentation:** Several organizations often train users only during initial implementation stages and rarely provide additional training for new employees and those who have undertaken job rotations. Consequently system knowledge and usage tend to dip significantly after implementation. Documentation is also scarce and poorly maintained.

### KEY PRE-CONDITIONS TO ACCOMPLISH ERP

Today ERP is the need of the hour and is the only apt answer to improve business processes and enhancing competitive edges. Procrastination of the inevitable is nothing but sheer wastage of precious time for a developing country like India. To exploit its full potential, the top management should involve itself in all stages of implementation, review the results and take appropriate follow-up actions[6][11]. Some of the facts that need to be cross-examined at various levels are:

- ✚ Organizational culture – does it display
  - Risk taking?
  - Cross Functional teams?
  - Empowerment?
  - Clarity in planning (strategy, organization structure, policies etc.)?
- ✚ State of Readiness of users – check
  - Experience in using IT for personal productivity.
  - Participation in earlier IT initiatives.
  - Quality of IT leadership in terms of
    - # Understanding business strategy.
    - # Awareness of how IT can help company.
    - # Project management
    - # Risk taking ability
- ✚ Champions needed among users.

### STRATEGIC OPTIONS FOR ENTERPRISE RE-ENGINEERING

A first step in enterprise resource planning is to reengineer, downsize, rightsize, or otherwise streamline business processes in pursuit of a competitive edge or greater efficiency. This process sometimes called enterprise reengineering, promises big rewards but also carries big risks[15]. ER initiatives start with a planned strategy for streamlining and integrating the

company’s operations. The following choices describe the spectrum of strategic options available for reorganizing a company’s business processes:

- (1) **Functional Centralization** This option mandates that a single organizational unit performs all common business functions, such as human resources or accounting.
- (2) **Functional Standardization:** Taking a cloning approach, this option has one business process fit all business units and mirrors that uniformity in the IT system’s implementation. Functional standardization implies that a company must standardize on hardware platforms, choose a standard suite of ERP package, then convert each and every business unit to those standards.
- (3) **Distributed Functional Specialization:** This option designates a selected business unit as a center of excellence for a specific business function; the selected unit then performs that function for the whole corporation. Partial functional specialization allows each business unit to control its own core MIS functions, such as sales processing and inventory control, but also centralizes a limited set of business functions, such as accounting, across the company.
- (4) **Functional Business Unit Autonomy:** This decentralizing option exemplifies the nonintegrated enterprise approach, allowing each unit to go its own way.
- (5) **Radical Redesign of Business Processes:** An organization could choose this option in response to a paradigm shift in which a new approach replaces the normal business flow.

Hybrid strategies combine features of these basic options. For example, one can loosely coordinate standardization, allowing each business unit to pursue an independent IT strategy, but insisting that it still cooperate with business units on bulk hardware and software purchases.

### CRITICAL FACTORS FOR STRATEGIC ERP IMPLEMENTATION

Implementing ERP is a costly and risky venture in our country, yet they are manageable. The streamlining of different business processes (as shown in Fig. 2) that cut across the functional areas of business to achieve optimum efficiency and strategic outcomes is the objective of ERP Implementation[11][12]. It brings together fragmented operations, often replacing the multiplicity of legacy systems.



[Fig. 2 Strategic ERP Implementation]

ERP implementation should follow in a phased manner. Step by step method of implementing system will yield a better result, as detailed below:

- ✚ Preparation of corporate IT plan.
- ✚ Preparation of project budget.
- ✚ Relate recurring benefits to ERP project costs.
- ✚ Secure sanction for the plan.
- ✚ Create Steering Committee and task forces.
- ✚ Acquire:
  - ERP package.
  - Hardware and LAN/WAN connectivity.
  - Recruitment and training of IT people in ERP, implementation methodologies.
- ✚ Task Force to start module wise BPR followed by mapping against ERP package to ascertain degree of “fit”, determine feasibility of modifying present work practices to fall in line with package and the residual customization needed.
- ✚ Complementation of customization.
- ✚ Documentation of user procedures for using the ERP module including preparation of training material/cases.
- ✚ Strategy for data migration from legacy systems, bridges and with legacy systems prior to rollouts.
- ✚ Training of users, parallel runs and cut over.
- ✚ Tight coordination of implementation process with users and through Steering Committee.

ERP implementations represent high-risk projects that need to be managed properly. Organizations must learn how to identify the critical issues that affect the implementation process and know when in the process to address them effectively to ensure that the promised benefits can be realized and potential failures can be avoided[13].

## OPTIONS AVAILABLE OF ERP PRODUCTS IN MARKET

ERP Products like SAP, Baan, JDE, SSA, JBA, Oracle and PeopleSoft-conceptually contains a set of functional components, integrated around an enterprise data warehouse. These components provide automated support in traditional business process areas such as inventory control, material requirements planning and order processing[14][15].

With each product suite emerging from a different historical perspective, today's ERP products offer a wide variety of capabilities. People-Soft, for example, began by specializing in back-office systems, and then expanded into the front office. Oracle specialized in relational database management systems, branched into data warehousing, and then moved into ERP. SAP started by specializing in manufacturing automation before expanding into other areas. Thus, each product derives its strengths and weaknesses from its history and its company's current business strategies.

Some vendors design their products to be flexible in capturing and using customer business processes; others dictate the processes to be used. For example, Oracle's ERP product is among the most flexible; SAP's is among the least flexible. Over the past few years, ERP products specialized for particular industry segments—such as the apparel industry's JBA System 21 Style—has also emerged.

Highly complex, ERP systems contain many hardware, software and peopleware components that can be interconnected in a variety of patterns. Pop the hood on one of these systems and one can find dozens of parts and millions of lines of code. These systems are further complicated by the heterogeneity of the connected components, the newness of the underlying technology and the need for integration into the client's total IT environment. Some ERP components are self-contained software packages—either custom-built or standard products. For example, SAP/R3, Baan and others now offer various client-server products that reside within an overall ERP system architecture.

## SELECTION & APPRAISAL OF ERP PRODUCTS

All said and done, ERP applications are still an expensive affair-even if we opt for one made in India. There are also lots of doubts about their success considering the failure-rate statistics floating on the Internet. While there is no singular approach for ERP product evaluation and selection, the main factors to be considered are [3][4]:

- ✚ **Price to Performance Ratio:** It requires immense calculation and cost justification prior to making an investment decision. The cost of ERP is not just the price of the product but also the other costs such as human resources, time and material deployments required to make it functional.

But the good news is that most vendors have specialized offerings for small and medium enterprises

(SMEs) that are cheaper (around 8-10 lakhs) and require less time on installation and configuration.

- ✚ **Product Functionality Fit with Industry:** An Enterprise Application Integration (EAI) strategy should start by considering a business' current position in the market including strength and weakness, products and distribution channels, the challenge posed by competition, new opportunities in the market, etc. All companies might not need an ERP application; an organization may simply be too young or may not be generating enough revenue to go in this kind of investment, or the business may not be too complicated or may be located in a single location.

- ✚ **Adaptability of Features based on Current IT (C/S, RDBMD, GUI, OLE, and Web Enablement etc.):** The idea is to formalize system with latest gadgets and updates, create standardized reports, reduce repetitive compilation of data, centralize the database and back-ups for data security & disaster management.

- ✚ **Vendor Track Record and Reference Sites:** In the long run, the future of ERPs will be determined by the vendor records and reference sites i.e. how many areas they manage to penetrate successfully and how will they address organizational needs with far-sighted approach. This strategy dramatically improves the level of customer service that the firm is able to provide.

- ✚ **Implementation Cycle Times:** Reduced cycle time always reduce inventory, improve resource utilization, improve customer response, utilize information effectively and in turn improve profit dramatically.

- ✚ **System/User Documentation:** With data transformation, business rules and workflow logic that integrates many mission-critical applications on a single platform, the EAI solution must provide accurate, update and easy to understand system/user documentation to provide continuous availability, scalability and iron-clad security.

- ✚ **H/W Requirement & Support:** As the hardware technology and need keep on changing in business environment, it is necessary to review the availability of existing hardware and plan for change it as and when it is found necessary[7][8]. The procurement should be need based and long range planning may not be suitable as the rate of obsolescence is very high in case of computer hardware. Its utilization is also determined by the software availability. Thus managing change and minimizing pain will require hardware and software vendors to work closely.

## MANAGERIAL IMPLICATIONS IN CURRENT INDIAN BUSINESS SCENERIO

This paper not only identifies which critical success factors (CSFs) are most critical in ERP implementations, but also determines which factors are temporal, i.e. significant in the implementation process for a particular period in time. This information can now be used to identify, anticipate, and allocate time and resources across those factors that need attending to effective project monitoring[1]. It also provides an understanding of the factors and their importance throughout the various phases of implementation, which in turn can serve as a useful guide for firms in the process of implementing an ERP system. If addressed these factors can improve the likelihood of a successful implementation.

It can be observed that the most critical part of the ERP implementation project occurs early in the chain of event, in the selection of the software package itself and in the preparation to make that selection. The best guarantee lies in front end preparation that should focus on building a solid foundation to support the challenges “down the road”. This would include securing commitment and cooperation from everyone involved that the work effort will be put forth as it is needed as well as ensuring that adequate knowledge exists to understand the options available (project team competence). Likewise getting people educated/trained and keeping them informed throughout the implementation process must be addressed to achieve the benefits of an ERP system. To accomplish these CFSs, significant effort is required that must be supported by top management involvement to ensure that the implementation receives the resources, time and priority that is necessary.

In addition, although vendor partnership was viewed as important in the initiation phase of the implementation, it should be noted that responsibility for key aspects of the project should not be delegated to software vendors or consultants. These external parties should be viewed as auxiliary resources, not as drivers.

With the maturing of ERP software, standard business practices and standard commercial transactions, tomorrows ERP can be broken into reusable components. This would lead to software downsizing reducing both the cost of the software and the time to implement it. Both ERP vendors like SAP, Baan and software vendors like Microsoft and Oracle are working on these exciting areas. The end user can expect to see these ideas translated into practice over the next two to three years [1][14].

## CONCLUSION

To conclude, the selection of an ERP package is not merely a number’s game, not a magic tool which will transform everything overnight, rather successful implementation is a long journey towards the enterprise excellence. It also requires a gut feel. A structured evaluation process is needed to sharpen our judgment, and then only ERP will be totally effective in any organization.

So there is no turning back from ERP, Even If Now, We Indians are Not Already in it, We are Already behind it.

## FUTURE SCOPE

The faster a business responds to customer needs, the greater its chances for success. This kind of real-time responsiveness requires policy decision-makers to have immediate access to accurate information for decision-making and the ability to make immediate change to business processes in response.

The future trend in ERP includes Web-enabled ERP, Component ERP and ERP integration with supply chain and electronic commerce[8]. With the security standard falling into place, Internet enabled ERP will be ready for electronic commerce too. Both Oracle allocation and SAP R/3 address B2B electronic Commerce today[7][16]. They will address end user electronic commerce tomorrow. Simultaneously, the critical roles of Business Process Reengineering (BPR), effective use of Change Management Software (CMS) and time tested Robust & Proven Methodology emancipating from our learning of implementation experience can not be ignored. It is very much needed for India to climb on the success ladder of ERP.

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