Implementation of ERP in Indian Companies

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1. Overview
In the wake of Liberalisation and Globalisation of Economic Policies, the Indian Business scenario is significantly changed in the last two decades. The scenario is tending to become more competitive in view of multinational entry and foreign capital inflow into this Country. Technology plays vital role in the Corporate World. It pressure on the Indian Companies to transform themselves or reengineer in order to achieve learner structures and reduced costs. To fulfill these, the companies opted for Business Process Reengineering (BPR) and to adapt Enterprise Resource Planning (ERP) in their Administration and Management. The process of manufacturing sector and service sector companies traditionally spends more on IT because of the larger number of companies engaged in this activity as well as their scale of operations. ERP Systems are the most integrated information systems that cut across various organizations as well as various functional areas. It has been observed that ERP systems prove to be a failure either in the design or its implementation. A number of reasons contribute in the success or failure of an ERP systems. Success or failure of ERP system can be estimated on the basis of impact of ERP on that organization.

2. Introduction
The term ‘Enterprise Resource Planning’ has been derived from Manufacturing Resource Planning (MRP II) that followed Material Requirements Planning (MRP). ERP software cross-functional and organization-wide, it typically handles the manufacturing, logistics, distribution, inventory, shipping, invoicing, and accounting functions of a company. Enterprise Resource Planning (ERP) software integrates all functional areas of business, including sales, logistics, billing, production, inventory management, quality management, and human resources management into one organization-wide system. Enterprise Resource Planning systems are the some of the most important development in the application of information technology in the business world. Enterprise Resource Planning software serves as the information backbone to the core business processes of an organisation.

3. Definitions of ERP
Enterprise Resource Planning (ERP) software attempts to integrate all departments and functions across a company onto a single computer system that can serve all those different departments’ particular needs.

An ERP system is an integrated software package composed of a set of typical functional modules such as Production, Sales, Human Resources, Finance, Logistics etc. developed and integrated by the vendor, which can be adapted to the specific needs of each customer. It attempts to integrate all departments and functions across a company onto a single Database Management system that can serve information needs of all departments. ERP solutions are enterprise wide and aim at optimal utilization of organizational resources. ERP solutions also facilitate tasks beyond resource planning such as financial control, operational management, analysis, reporting, and routine decision support. ERP systems empower the top, middle, and bottom of the organization hierarchy by facilitating centralized information access.

ERP is a Business Model Framework for planning all of the resources of a business—starting with strategic planning and linking through to execution. Process disciplines are integral to successful ERP predictability, and management systems can provide accountability. ERP systems are the information technology tools or software for which some of these process links can become automated, with information shared across functional areas and business transactions efficiently processed.

The Enterprise Resource Planning (ERP) system is an enterprise information system designed to integrate and optimize the business processes and transactions in a corporation.

ERP links all areas of a company with external suppliers and customers into a tightly integrated system with shared data and visibility. ERP systems are designed to solve the problem of the fragmentation of information over many legacy systems in large business organizations “Enterprise Resource Planning (ERP) systems are “computer-based systems designed to process an organization’s transactions and facilitate integrated and real time planning, production, and customer response” ERP systems are enterprise-wide systems encompassing missions, objectives, strategies, attitudes, values and styles of working in an organization. The ERP systems are designed with an approach which is different from one followed in designing management information system. ERP system is founded on the premise that integration of different business functions such as production, marketing and finance can help in cost reduction and also result in customer orientation of business processes. A business process consists of a sequence operations to accomplish a given task or objective and its reengineering mainly aims at removing any sort of impediment to the flow of information through automating business processes and the process of communication.

ERP system integrates all the processes that ensure customer orientation and optimum management of resources by focusing on production capacities, managing logistics and working out financial consequences of each decision rather than merely computing costs. ERP assumes all the resources of the enterprise are common and are to cater to the changing needs of the customers. This is ensured by establishing rules and relationships among them.
For example, the integration between customers prospecting process and sales order monitoring process would be complete only when the end of the first process and beginning of the next process is joined seamlessly as if both constituted a single process. Such a link is established with the help of rules or relationships between processes and improved communication among various elements involved in their performance.

As business processes involve many functions, the information systems are to be multifunctional. For instance, the process begins with sales prospecting and once it is successful, order maintenance process takes over. The sales order processing is directly linked to inventory system, works order maintenance and accounts receivable modules, thereby integrating marketing function with production as well as finance.

There is integration of all activities such as shop-floor control, production planning, production scheduling, procurement of inputs and inventory tracking with the sales activity. The Manufacturing Resource Planning (MRP) is linked with the sales activity through inventory system. Each process is linked directly or indirectly to the customer.

ERP systems help in automating business processes that were earlier being carried out manually. Cost reduction is achieved through elimination and improvement of business processes. Improved communication also results in reduction in costs.

**Evolution of ERP Software in Indian Companies**

Enterprise Resource Planning (ERP) system is considered as an important IT tool for implementing BPR plans that aim at radically reorienting business processes and structures. The present paper reviews the potentials of ERP systems for BPR and identifies the critical success factors for their effective implementation, specially in the Indian environment. It also raises the issues of ‘flexibility vs. efficiency’ that is once again in focus due to increasing popularity of ERP systems.

Enterprise Resource Planning solutions appeared on the market in early 1980’s. ERP software comprise of business modules for Finance, Logistics and Manufacturing, allowing for the management of purchases, sales, stocks, production etc. These solutions were referred to as Enterprise Resource Planning since they permitted the stage elaboration and integrated administration of the company major resources (inventory and materials, human resources, and finance) and the associated processes. The term Enterprise Resource Planning (ERP) is the successor to MRP II, and MRP II is a successor to the Materials Requirement Planning (MRP-I) software that resulted from requirements for greater control and efficiency in manufacturing systems. The original ERP systems ran on mainframes and IBM AS/400 systems, and included mainframe products such as SAP R/2 and MAPICS, from Mapics Inc., as well as AS/400 packages such as J.D. Edward's World and SSA's BPCS. While ERP had its origins in manufacturing and production planning systems, the scope of ERP offerings expanded in the mid-1990s to include other "back-office" functions such as order management, financial management, warehousing, distribution production, quality control, asset management and human resources management. The range of functionality of ERP systems has further expanded in recent years to include more "front office" functions, such as sales force and marketing automation, electronic commerce, and supply chain systems. Before ERP, the purchased or in-house developed software were the only solution offered to companies to manage their activities between departments, tasks, input and databases. In order to appreciate the evolution of ERP system, it is useful to go back to the first classification of systems and the most referenced framework for the implementation of management information systems. They developed a framework that has become the foundation stone for much of the research work in Decision Support Systems. The framework allows an organisation to gain a perspective on the field of Information Systems and focuses on understanding the ‘evolution of MIS activities within organisations and recognises some of the potential problems and benefits resulting from ‘new technology’. MIS ideas are so popular in the literature are a poor design concept. However, the old notion is in fact a new reality for all organisations experiencing ERP systems implementations.

So many companies are implementing the software, making it one of the fastest growing segments of the application software market. Today, every aspect in modern organization relies heavily on information to survive, in fact, information system serves as the life-line to the organizations, nothing moves without information and the organizations are using ERP for gaining competitive edge in all functional areas. ERP is a single software program that serves the needs of firm in all functional areas of an organisation. Each of the department typically has its own computer system optimized for the particular requirement of the department and ERP combines them all together into single, integrated software programme that runs on a single database so that the various departments can easily share information and communicate with each other. ERP software is one of largest expenditure of corporate Information Technology (IT). The core idea of implementing an ERP solution is to get tangible business benefits that would improve the performance of the organisation and achieve certain business objectives. This includes inventory reduction, less time to market, reduce manufacturing and order processing cycle times, etc. It is unbelievable but true that not a single ERP implementation in India has reached the stability.

**Developments of ERP Software after 1990's**

Enterprise Resource Planning (ERP) solutions became the replacement for the conventional legacy systems for many Fortune 500 companies during the 1990s. The main ERP providers were SAP, Oracle Applications, PeopleSoft, J D Edwards and Baan etc. Multinationals who were looking toward reengineering of processes and cost cutting installed their ERP project initially at their manufacturing sites, centers of distribution etc. As the decade 1990 progressed the growth of ERP software became evident. By the end of the decade ERP was seen as a solution to centralized key processes management of the organizations. In recent years, many organisations in India have initiated Enterprise Resource Planning (ERP) system using software packages like SAP, Oracle, BAAN etc. The Enterprise Resource Planning software market is one of the fastest.
growing market in the software industry. The following table represents the estimated revenue of Enterprise Resource Planning software market from 2011 to 2016 in India.

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<td>Web Conferencing, Teamring Platforms and Social Software Suites</td>
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Note: Dark green equals high level of SaaS adoption, and dark red equals low level of SaaS adoption.

Source: Gartner (October 2012)

Most of them still seem to be in a half-baked stage where the organisations have been unable to respond to the stringent demands and discipline required by the ERP packages. The fact that implementation of the world-class packages requires tremendous effort in enforcing change management coupled with the inability of these firms to respond to that challenge have compounded their problems further. Thus, it has become critical to deliver value out of these implementations and in a reasonably short time, so as to justify the large investment made. The three key issues that could determine the success of an ERP implementation and work towards delivering quicker, better ROI are functionality, technology, and implementation of solution.

**Functionality of ERP**

The ability of the package to support the best business practices followed in the company's line of business would be a crucial factor in determining the smoothness of implementation. Major gaps in required functionality can lead to time-consuming and cumbersome customisations which could put time-schedules and budgets off track. A focused evaluation exercise at the selection stage would help towards eliminating incompatible choices. The quality and commitment of business consultants and product consultants involved in the ERP implementation would also be a very crucial factor in ensuring its success.

**Technology**

Scalable ERP solutions that support open, non-proprietary technology standards would provide for protection of investments and ensure minimal risk. They should support different kinds of operating systems, database management systems and operate on most major client/server hardware platforms, Local Area Networks (LANs), and user interfaces (ASCII, Motif, Windows 95, etc.) so as to minimise risk towards technology obsolescence. The ERP package's programming language software development tools should permit ready adaptation of the system in response to ongoing changes in production and operational processes. The development tool-set for the applications should be easy-to-use to minimise customisation effort and time.

**Implementation of the Solution**

The most crucial and significant factor as customer satisfaction and benefits of ERP would depend not only on functionality but also on ease-of-configuration, ease-of-use and the software's flexibility to support optimisation of business processes. Much of the complexity of a software implementation process has also much to do with setting of parameters, designing menus and authorizations. The roles and responsibilities of different employees have to be clearly identified, understood and configured in the system. The involvement and willingness of the employees to accept and use these new procedures laid by the ERP would determine the success of the implementation to a great extent.

**An integrated view of ERP System in India**

An ERP system that if properly implemented, can achieve high benefits for business. However, some companies have difficulty identifying any measurable benefits or business process improvements. It is further reported that a large number of
ERP implementations fail to meet expectations as many adopters have not yet realised the benefits they had anticipated. Some of the Indian & MNCs using ERP

The following major merits are adopted by Indian Companies and MNCs from ERP System

**Reduction of Operating Cost:** ERP systems have large-scale business involvement, internal and external process integration capabilities. They can assist in achieving the strategic competitive advantages. With a centralized database and built in data analysis capabilities, ERP systems provide informational benefits to management decision making. As ERP systems automate business processes and enable process changes, an organization may expect ERP systems to offer strategic advantage through Cost leadership by Cycle time reduction, Productivity improvement, Quality improvement, Customer services improvement.

**Improved Job Time:** As the different parts of the organization are connected with each other, people have faster access to information and require less time to do their tasks. This helps to improve the time and resources for decision-making

**Centralization of Information System:** As all the departments and the functions in the organization are integrated and linked to one single database, data needs to be entered only once into the system. It can then, be accessed by different departments according to their needs. For example, before taking an order from a customer, the sales representative can have access to information regarding availability of inventory, credit rating of the customer, etc.

**Return on Investment (ROI) earlier than the Software Developed In-House:** Developing software in-house requires a great amount of investment, experienced professionals and tremendous amount of time. The payback from the in-house system takes an equally longer time. As ERP software packages are developed by vendors who have the required expertise, they are basically off the shelf packages that companies pick up that require minor customizations as per company requirements, and so they don’t involve an in-depth development like the in-house software. Hence the ROI is received faster from the ERP system.

**Ease of Use:** The system of ERP is very user friendly. With the correct amount of training, it becomes easy for the employees to use the system.

**Efficient Business Practices:** The ERP system helps companies to do away with the erroneous ways of carrying out the different business functions and introduces business best practices. This further helps to provide better control and introduces standardized ways to execute business processes.

**Ready-Made Elucidation for most of the Problems:** Most of the problems get resolved as the vendors who develop ERP software packages, take the best ideas from all their customers and incorporate them into their products.

**Only Customization Required:** ERP Systems are already developed to suit the general businesses. But as every company has a slightly different way of operating, only minor changes may be needed to customize the system to suit the company’s particular business requirements.

**Easy Enterprise Wide Information Sharing:** Once the information is entered into the single database, everyone in the organization has access to the information and sees the same computer screen.

**Customer Satisfaction:** In the paper-based system, the order moved from basket to basket around the organization, and often caused delays, errors in processing due to repeated entries by the different department or got lost. With the ERP system, the order process moves quickly through the organization. This helps to get the orders to the customers faster and there is no in-basket time waiting time involved.

**Challenges Faced by Indian Companies**
Challenges are quite normal in implementing ERP. Though it is not completely a technical job, but a lot of planning and proper communication is very essential to implement ERP in the Organisations. The following are the major limitations of ERP Implementation.
Many of the problems that companies face with ERP system are due to inadequate investment in training of all relevant personnel, including those implementing and testing changes, and setting corporate policies. There are limitations and pitfalls to ERP, for instance:

**Success Depends on the Skill and Experience of the Work Force:** Educate the people in how to make the system work correctly. Many companies attempt to cut implementation costs by cutting user training. Privately owned small enterprises are often sufferer, their ERP system is often operated by personnel with inadequate education in ERP in general.

**Personnel Turnover:** Companies can employ new managers lacking education in the company's ERP system.

**Proposing Changes in Business Practices:** That are out of synchronization with the best utilization of the company's selected ERP.

**Cost of Ownership of ERP Systems is very High:** ERP vendors can charge sums of money for annual license renewal that is unrelated to the size of the company using the ERP or its profitability.

**Technical Support:** Replies to callers that are inappropriate for the caller’s corporate structure. Computer security concerns arise, for example when telling a non-programmer how to change a database on the fly, at a company that requires an audit trail of changes so as to meet some regulatory standards.

**ERPs are often Seen as Too Rigid:** It is difficult to adapt to the specific workflow and business process of some companies - this is cited as one of the main causes of their failure.

**Lack of Co-Ordination:** The system can suffer from the "weakest link" problem - an inefficiency in one department or at one of the partners may affect other participants.

### 4. Conclusion

The implementation of an ERP system involves a complex set of tasks, from selection and system design, to installation, tuning, maintenance and upgrade. The core set of technologies and capabilities needed to accomplish these tasks is often not obtainable in-house, due to high costs and lack of resources. This means that ERP customers must find ways to engage top-notch ERP experts while controlling costs and still be able to implement and maintain a strategic ERP system. Handing off all or part of the responsibility for implementation and maintenance - also known as ERP outsourcing - is an increasingly viable and important option for ERP customers.

Finally, the analysts suggest that, the Indian Companies have some of the key tangible benefits of implementing ERP systems are: inventory management, productivity improvement and cash management. Similarly, key non tangible benefits of implementing ERP are: reduction in different operating and maintenance costs, improved business processes. Other business performance impact on organization could be: enhanced regulatory compliance, more accurate MIS, increased institutional accountability, and reduced work load in different departments. ERP adopters are consistently higher in performance across a wide variety of measures than non-adopters. Overall, this suggests that indeed ERP systems yield substantial benefits to the firms that adopt them, and that the adoption risks do not exceed the expected value.

### 5. References

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