School of Computer Science and Engineering

Program Name: B.Tech

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Course Name: Enterprise Resource Planning

Enterprise resource planning (**ERP**) is business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back office functions related to technology, services and human resources.

What is an ERP Integration?

- System integration involves integrating existing often disparate systems and is also about adding value to the system, capabilities that are possible because of interactions between subsystems

- **ERP integration** is the process of **integrating** separate, stove pipe **ERP** systems with each other or with other enterprise information resources, to meet various B2B demands.

- The integration can EXPORT or IMPORT data

- Data can be updated REAL-TIME or BATCH-MODE

Integrated data model

It should clearly depict the organization; it should reflect the day-to-day transactions and it should be updated continuously. At any given time, the database should give a snapshot of the organization at that point in time. So if an order is entered, the sale is done and the goods are dispatched, then the database should reflect those changes. The inventory should be reduced and the account receivables should be increased. All these things have to happen instantaneously and automatically. That is the challenge and that is the advantage of the integrated database and the integrated data model.

Limitations of ERP

- Managers cannot generate custom reports or queries without help from a programmer and this inhibits them from obtaining information quickly, which is essential for maintaining a competitive advantage.

- ERP systems provide current status only, such as open orders. Managers often need to look past the current status to find trends and patterns that aid better decision – making.

- The data in the ERP application is not integrated with other enterprise or division systems and does not include external intelligence.

The primary concept of data warehousing is that the data stored for business analysis can be accessed most effectively by separating it from the data in operational systems. The most important reason for separating data for business analysis, from the operational data, has always been the potential performance degradation on the operational system that can result from the analysis processes.

Overview of ERP

Enterprise Resource Planning (ERP) covers the techniques and concepts employed for the integrated management of business as a whole, from the viewpoint of the effective use of management resources, to improve the efficiency of an enterprise. ERP packages are integrated (covering all business functions) software packages that support the above ERP concepts. Originally, ERP packages were targeted at the manufacturing industry, and consisted mainly of functions for planning and managing core businesses such as sales management, production management, accounting and financial affairs, etc. However, in recent years, adaptation not only to the manufacturing industry, but also to diverse types of industry has become possible and the expansion of implementation and use has been progressing on a global level. ERP software is designed to model and automate many of the basic processes of a company, from finance to the shop floor, with the goal of integrating information across the compnay and eliminating complex, expensive links between computer systems that were never meant to talk to each other.

ERP software is a mirror image of the major business processes of an organization, such as customer order fulfillment and manufacturing. Its success depends upon reach-a circumscribed ERP system isn't much better than the legacy system it replaces. In many cases, it is worse, because the old code at least was written specifically for the company and the task. ERP systems' set of generic processes, produce the dramatic improvements that they are capable of only, when used to connect parts of an organization and integrate its various processes seamlessly. When a warehouse in Noida enters a customer order, for example, the data flows automatically to others in the company who need to see it-to the finance department at the company headquarters in Mumbai and to the manufacturing plant in Chennai. The lure of information integration struck a chord with CEOs and CFOs and CFOs-ERP vendors' primary targets-and sales of ERP took off in the early 1990s.

Business Integration

The first and most important advantage lies in the promotion of integration. The reason why ERP packages are considered to be integrated, is the automatic data updation (automatic data exchange among applications) that is possible among the related business components. Since conventional company information systems were aimed at the optimization of independent business functions in business units, almost all were weak in terms of the communication and integration of information that transcended the different business functions. In the case of large companies in particular, the timing of system construction and directives differs for each product and department/functions and sometimes, they are disconnected. For this reason, it has become an obstacle in the shift to new product and business classification. In the case of ERP packages, the data of related business functions is also automatically updated at the time a transaction occurs. For this reason, one is able to grasp business details in real time, and carry out various types of management decisions in a timely manner, based on that information.

Business Modeling

Business modeling or creating a business model is one of the first activities in any ERP project. As said earlier, the ERP systems should mirror the business processes. A business model is not mathematical model, but it is a representation of the business as one large system showing the interconnections and interdependencies of the various subsystems and business processes as shown in figure. Based on the organization's goals, objectives and strategic plans, a business model consisting of the business processes is developed. These business processes are controlled by different individuals in the organization (the people) to achieve common goals. Based on the business model, the ERP system is developed with the aim of providing the required information and necessary assistance to the various individuals, to help them perform their business processes more effectively and efficiently

Integrated Data Model

One of the most critical steps in the ERP implementation is the creation of an Integrated Data Model. As we have seen earlier, one of the advantages of having an ERP system is that all employees from the different departments get access to the data – the integrated data. The company uses this integrated data for its analysis and decision-making. With the implementation of ERP systems, the departmental information systems and the departmental databases will have to go. There can no longer be isolated databases, which cater to the needs of a particular department. All the data has to be from the integrated database. This approach will reduce data redundancy and provide updated information about the entire organization to all employees.

Business Process Reengineering (BPR)

BPR has been around for quite some time and a lot has been written about it in both, the practitioner trade press and the academic research journals. However, the controversy still remains about whether there is any accurate description of BPR, or BPR is just a fad – an appealing label to tag on to whatever your company is doing, to suggest that your latest and greatest work is 'in vogue'. But if reengineering is to continue in the long run, then it must do more than advertise its considerable successes to date. It must become more proactive and inclusive with regard to human, organizational and motivational change issues. Dr Michael Hammer defines BPR as "…… the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service and speed." One of the main tools for making this change is the Information Technology (IT). Any BPR effort that fails to understand the importance of IT, and goes through the pre-BPR analysis and planning phases without considering the various IT options available, and the effect of the proposed IT solutions on the employees and the organization, is bound to crash during takeoff.

Thank You