UNIT I INTRODUCTION

Overview and Benefits of ERP, ERP Related Technologies- Business Process Re-engineering (BPR), Online Analytical Processing (OLAP), Data Warehousing, Data Mining, Applications of ERP.

1.1 Overview of ERP software solutions:

Enterprise resource planning is now gaining lots of importance among the business economy. It is now being seen as an important tool for managing resources of a company both internally and externally. It is being used both for many business applications and also for manymanufacturingindustries.

Previously, enterprise resource planning was used only of large business companies. It required lots of money to be invested. Small scale and medium sized companies were not ready to invest a large amount for buying software and employing staffs for managing ERP software.

Keeping this in mind, ERP vendors started diversifying their enterprise resource planning software by releasing many versions of the software which could assist small companies too.

Also, small sized companies might not require all the tools and customizations available for the big companies. The ERP software got tailored particularly to meet the small sized companies and forincreasing the productivity. After this, small sized business people also started buying ERP software which matched their investment amount.

From the early 1990's ERP helped the companies in driving down their cost and also helped them in operating more efficiently. Effective data management also helped streamlining the business process effectively. Planning, manufacturing, marketing, sales and

quoting services kept on improving. Stock control, financial tracking and customer service also got better with ERP. Many time consuming and labor related processes were eliminated by the small business with the usage of enterprise resource planning software.

1.1.1.Introduction

ERP is an acronym that stands for Enterprise Resource Planning. ERP software saw phenomenal interest from the corporate sector during the period 1995-2000. The ERP market is estimated to be in excess of USD 80 Billion in the year 2000. Many analysts feel that today's global business environment - products and services customized to suit the individual needs of millions of customers, deliver time-lines in a 24X7 basis - would have been impossible without such enterprise software. Undoubtedly ERP represents one of the most complex and demanding application software in the corporate environment. ex-: SCM, CRM, Manufacturers, Service sectors, Marketing Researchers.

1.1.2 What is ERP?

ERP is a package software solution that addresses the enterprise needs of an organization by tightly integrating the various functions of an organization using a process view of the organization.

A. ERP software is ready-made generic software; it is not custom-made for a specific firm. ERP software understands the needs of any organization within a specific industry segment. Many of the processes implemented in an ERP software are core processes such as order processing, order fulfillment, shipping, invoicing, production planning, BOM (Bill of Material), purchase order, general ledger, etc., that are common to all industry segments.

B. ERP does not merely address the needs of a single function such as Finance, Marketing, Production or HR; rather it addresses the entire needs of an enterprise that cuts across these functions to meaningfully execute any of the core processes.

C. ERP integrates the functional modules tightly. It is not merely the import and export of data across the functional modules. The integration ensures that the logic of a process that cuts across the function is captured genuinely. This in turn implies that data once entered in any of the functional modules (whichever of the module owns the data) is made available to every other module that needs this data. This leads to significant improvements by way of improved consistency and integrity of data.

D. ERP uses the process view of the organization in the place of function view, which dominated the enterprise software before the advent of ERP.

PLAYERS-: JD EDWARDS, ORACLE, SAP

1.1.4 Need for Enterprise Resource Planning

Organizations today face twin challenges of globalization and shortened product life cycle. Globalization has led to unprecedented levels of competition. To face such competitions, successful corporations should follow the best business practices in the

industry. Shortened life cycles call for continuous design improvements, manufacturing flexibility, super-efficient logistics control and better management of the entire supply chain. All these need faster access to accurate information, both inside the organization and the entire supply chain outside. The organizational units such as finance, marketing, production, human resource development etc. need to operate with a very high level of integration without losing flexibility. ERP system with an organization-wide view of business processes, business need of information and flexibility meet these demands perfectly. One of the developments in computing and communication channels is providing right integration among them.

1.1.5 Definition of ERP

Kumar et al. (2000) define enterprise resource planning (ERP) systems as "configurable information systems packages that integrate information and information-based processes within and across functional areas in an organization"

Nah et al. (2001) defines ERP as "An enterprise resource planning (ERP) system is typically defined as a packaged business software system that facilitates a corporation to manage the efficient and effective use of resources (materials, human resources, finance, etc.) by providing a

total integrated solution for the organization's information-processing requests, through a process-oriented view consistent across the company."

1.4 Evolution of Enterprise Resource Planning

Enterprise resource planning (ERP) has evolved as a strategic tool, an outcome of over four decades. This is because of continuous improvements done to the then available techniques to manage business more efficiently and also with developments and inventions in information technology field.

1.2.1 Pre Material Requirement Planning (MRP) stage

Prior to 1960s businesses generally relied on traditional ways of managing inventories to ensure smooth functioning of the organizations.

ERP system has evolved from the Material Planning System of 1980's. The various phases of development of resource planning system in relation to time and evolution of concept of ERP.

Figure 1.1
Stages of ERP Evolution

1.2.2. Material Requirement Planning (MRP)

MRP was the fundamental concept of production management and control in the mid- 1970s and considered as the first stage in evolution of ERP. Assembly operations involving thousands of parts such as automobile manufacture led to large inventories. The need to bring down the large inventory levels associated with these industries led to the early MRP systems that planned the order releases. Such planned order releases ensured proper time phrasing and accurate planning of the sub-assembly items, taking into account complex sub-assembly to assembly relationships characterized by the Bill of Materials.

A typical automobile plant with hundreds, if not thousands of parts, has to face problems that are in order of magnitude even more difficult. MRP systems address this need. Using the processing power of computers, databases to store lead-times and order quantities and algorithms to implement Bill-of-Material (BOM) explosion, MRP systems brought considerable order into the chaotic process of material planning in a discrete manufacturing operation.

Manufacturing Resources Planning II (MRP- II)

MRP II that addressed the entire manufacturing function and not just a single task within the manufacturing function. MRP II systems could determine whether a given schedule of production was feasible, not merely from material availability but also from other resource point of view. MRP II systems would include production facilities, machine capacities and precedence sequences. The increased functionality enabled MRP II systems provided a way to run the system in a loop. First it was used to check the feasibility of a production schedule taking into account the constraints; second to adjust the loading of the resources, if possible, to meet the production schedules; third to plan the materials using the traditional MRP II systems.

Enterprise Resource Planning (ERP)

The nineties saw unprecedented global competition, customer focus and shortened product life cycles. To respond to these demands corporations had to move towards agile (quick moving) manufacturing of products, continuous improvements of process and business process re- engineering. This called for integration of manufacturing with other functional areas including accounting, marketing, finance and human resource development.

Activity-based costing would not be possible without the integration of manufacturing and accounting. Mass customization of manufacturing needed integration of marketing and manufacturing. Flexible manufacturing with people empowerment necessitated integration of manufacturing with the HRD function. In a sense the 1990s truly called integration of all the functions of management. ERP systems are such integrated information systems build to meet the information and decision needs of an enterprise spanning all the functions of management[4].

Extended ERP(E-ERP)

Further developments in the enterprise resource planning system concept have led to evolution of extended ERP (E- ERP) or web - enabled ERP. With globalization on one hand and massive development in the internet technology on the other, need for web based IT solution was felt. Thus E- ERP is development in the field of ERP which involves the technology of Internet and World Wide Web (WWW) to facilitate the functions of an organization around the web.

Enterprise Resource Planning II (ERP-II)

ERP II is the advanced step of E-ERP. It is the software package which has strengthened the original ERP package by included capabilities like customer relationship management, knowledge management, work flow management and human resource management. It is a web friendly application and thus addresses the issue of multiple office locations.