Chapter 10

Enterprise Resource Planning

Enterprise

An enterprise is a group of people and resources working together for a common goal.It consists of different departments.Each department has theirown responsibilities and duties.

Concept of 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.The key element of ERP is the use of single database to store data related to different system modules.It consists of both software and hardware.

Functional units of ERP

A typical ERP system is made up of functionallyoriented and tightly integrated modules.

1)**Production planning module:-**This module optimises the utilisation of available resources and helps to plan their production.It identifies the materials needed for production,forecastes sales data etc.

2)**HR module**:-The HR(Human Resource) module manages human resource and capital.It maintains a database of employees including contact information,salary,attendance,performnance etc.

3)**Inventory control module**:- Inventory Control Module facilitates the processes in maintaining an appropriate level of stock in the warehouse. Integration of the inventory control module with sales, purchase, and finance modules allows ERP systems to generate vigilant executive level reports.

4)**Purchasing module**:-This module helps to obtain raw materials available in right time at right price.This module is connected with inventory ,finance and production planning modules.It also generates purchase order,bills etc.

5)**Marketing module**:-This module moniters and tracks customers order,eliminates credit risks.It supports lead generation,offer making,new product campaign etc.

6)**Sales and distribution module**:-This is an important part of sales cycle.This module is closly integrated with e-commerce and deals with order,dispatching,invoicing etc.

7)**Quality management module**:-This module manages the quality of products.It deals with quality inspection and control.

ERP integrates all the above modules into a single software system.

Business Process Re-engineering(BPR)

BPR is the analysis and redisgn of work flow in an enterprise.It deals with changes in the structure and process of business.Re-engineerinh helps to reduce cost and effective use of resources. It involves the radical redesign of core business processes to achieve dramatic improvements in productivity, cycle times and quality. Business process reengineering is a key component of ERP success.

Business Process Reengineering is also known as business process redesign.A business process consists of three elements

- Input:-It includes forms,customer queries etc.
- Processing:-It involves set of activities to get output.
- Outcome:-It is the output of processing.

Relationship between ERP and BPR

BPR focuses on transformation aspect of business process while ERP focuses on automation aspect of business process.Both ERP and BPR go hand in hand.In most cases BPR is performed before ERP.

Implementation of ERP

ERP helps to improve productivity and profit of an organisation.ERP is implemented in a planned and perfect manner.The implementation of ERP is done in different stages.The different phases in ERP implementation are

- Pre evaluation screening
- Project planning
- Gap analysis
- Business Process Reengineering
- Installation and Configuration

- Implementation and team training
- Testing
- Going live
- End user training
- Post implementation.

Pre evaluation screening

This is the first phase in implementing an ERP package.A limited number of packages are evaluated and an appropriate one is selected.

Package selection

Package selection decides the sucess or failure of project.The package selected must meet the enterprise requirement.Once a package is selected it is not easy to switch to another one.

Project planning

In this phase implementation process is planned and designed.The time schedule for various activities are determined.Role and responsibilities of each person are assigned.This phase decides how a project should proceed and when to complete.

Gap analysis

The objective of gap analysis activity is to learn the offering of an ERPsystem and to assess the gap between the offering and the requirements of the organization. This phase identifies the user requirements that cannot be directly addressed by the ERP package.

Business Process Reengineering(BPR)

Business process re-engineering is a business management strategy. BPR aims to help organizations rethink how they do their work in order to dramatically improve customer service, cut operational costs, and become world-class competitors. Business Process Reengineering is also known as business process redesign.

Installation and Configuration

The main functional phase ofERP is implementation.A new ERP package is installed after analysing the whole process in an enterprise.The task of installation is carried out by an experienced staff.

Implementation team training

All the members included in the implementation team are to be trained on how the system will be implemented.

System testing

The system is tested to ensure that it performs properly.The output is tested with sample data.If any mistake is found it is corrected.

Going live

In this phase the ERP is made available to entire organization.After this phase the system is ready for use.The system becomes live after configuring,testing and removing error.

End-user training

The users of ERP are trained on how to use the system.The employee who are going to be use the new system is identified.They are divided into groups.Each group is trained.

Post implementation

After installing a new ERP it has to be updated.Implementation checks whether the objectives of ERP system is met.The errors are corrected for increasing the efficiency.

ERP solution providers/ERP packages

Selection of ERP package is crucial in implementing of an ERP system.This selection and implementation increases the productivity.There are many ERP vendors around the world.Some of the ERP vendors are Oracle,SAP,Odoo,Microsoft Dynamics and Tally.

Oracle

Oracle is popular as a database system rather than an ERP system.The ERP package of Oracle provides finance and accounting module.It also developes CRM(Customer Relationship Management) and ACM(Supply Chain Management) software.It provides Effective product analysis and supplier interaction.

SAP

SAP stands for Systems Applications and Products for data processing.It is a German software firm.The company developes software for business solutions.It also developes CRM,SCM and PLM(Product Life cycle Management) software.

Odoo

Odoo is an open source ERP.It was early called OpenERP.It is a comprehensive suite of business applications including Sales, CRM, Project management etc. It is based on a technology stack that is modern and up-to-date.

Microsoft Dynamics

Microsoft Dynamics is an enterprise resource planning (ERP) and customer relationship management(CRM) software applications. Microsoft Dynamics applications are delivered through a network of reselling partners. Microsoft Dynamics is part of Microsoft Business Solutions. Dynamics can be used with other Microsoft solutions, such as SharePoint, , Office 365, Azure and Outlook.

Tally ERP

Tally ERP is a Banglore based software company.It is a business accounting software fo accounting ,inventory and payroll.

Beneficts of ERP System

The main advantages of implementing ERP system in an enterprise are

1)Improved resource utilization

An enterprise can plan and manage resources effectively by installing ERP software.It reduces the wastage of resources and increases better resource utilization.

2)**Better customer satisfaction**

Customer satisfaction helps to meet customer neds for a product or service.ERP helps to give customer more importance without spending more time and money.It enables to place order,track status of order etc.

3)**Provides accurate information**

ERP provides informations needed for future planning and management of enterprise.

4)**Decision making capability**

Information helps to make decision.This helps to overcome other competitors in business.

5)**Increased flexibility**

ERP system helps to increase flexibility if an organization.Thus it can adapt to changes .It makes information available without any barrier.

6)**Information intergrity**

An ERP integrates various departments thus helps to integrate information.The information is stored centrally.ERP provides high security,business intelligence,reprting,delivery and technology.

Risk of ERP implementation

The main problems and limitations of ERP packages are

1)**High cost**

The cost of implementation and configuration of ERP software is high.The high price,license fee are main problems of ERP installation.There may be additional cost like upgrading,implementation charges etc.Small enterprise cannot afford these costs.

2)**Time consuming**

The ERP implementation is performed in many phases ,so it consumes much time.It can take even month's or years for completion.

3)**Requirement of additional trained staff**

Trained staff are needed to run ERP system.The contribution of skilled and trained persons is important in the success of an ERP system.

4)**Operational and maintanance issue**

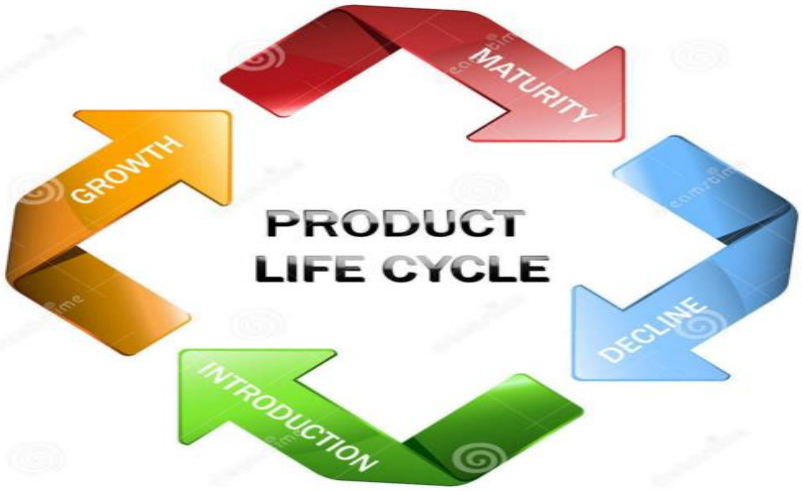
Implementing an ERP system needs changes in current process.Employ's may find it difficult to adjust changes,they may resist changes.The implementation process is a continuous process,hence difficult.

ERP and related technologies

ERP system integrates various business functions such as sales,distribution,planning etc.It helps to increase the performance of an enterprise.

Product Life Cycle Management(PLM)

PLM is used to determine the lifespan of a product.It is the process of managing the entire life cycle of a product.



The PLM consists of four stages,Introduction,Growth,Maturity and Decline.

It increases the quality of a product,marketting opportunities,ensure use of latest technology etc.The information obtained from product life cycle helps to understand the state(status) of a product in existing market.

Customer Relationship Management(CRM)

Customer relationship management (**CRM**) is an approach to manage a company's interaction with current and future customers. The CRM approach tries to analyze data about customers' history with a company, in order to better improve business relationships with customers, specifically focusing on retaining customers, in order to drive sales growth.It includes capture,storage and analysis of customer information. The primary goal of CRM systems is to integrate and automate sales, marketing, and customer support.

The main processes in CRM are marketing,Sales,Feedback and Support. A Customer Relationship Management (CRM) system is a tool for collecting and managing the information and interactions your business has with your customers, sales leads, suppliers or other businesses.

Management Information System(MIS)

MIS can be defined as a system which provides information to support managerial functions like planning,organizing,staffing,directing and controlling. A management information system provides information that is needed to manage organizations efficiently and effectively. Managementinformation systems involve three primary resources: people,technology, and information.The role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart.The MIS system ensures that appropriate data is collected from various sources,processed.

Objectives of MIS

1)Facilitates decision making by providing information.

2)Provides requisite information at each levels of management.

Supply Chain Management(SCM)

The SCM consists of all activities associated with moving goods from suppliers to customers. It is the management of the flow of goods and services. It includes the movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption.SCM is a systematic approach for managing supply chain.It includes inventory management,distribution strategy,planning,customer service etc.

Decision Support System(DSS)

A decision support system (**DSS**) is a computer-based information system that supports business or organizational decision-making activities..It is a computer based program that analysis business data and helps the user in business decisions easily. Decision support systems can be either fully computerized, human-powered or a combination of both. A decision support system may present information graphically and may include an expert system. It may be aimed at business executives or some other group of knowledge workers.