Chapter 10
Enterprise Resource Planning

What is an enterprise?

An enterprise is a group of people and other resources working together for a common goal. It may consist of different sections or departments such as manufacturing or production, planning, sales, purchase, finance, distribution etc.

Why Enterprise Resource Planning?

ERP combines all the business requirements of an enterprise or company together into a single, integrated software that runs off a single database so that various departments of an enterprise can share information and communicate with each other more easily.

What is ERP system?

ERP system is a fully integrated business management system covering functional areas of an enterprise like Finance, Human Resources, Production, Sales, Logistics etc. The key element of ERP is the use of a single database to store data for various system modules.

What are the functional units of ERP?

1. Financial module: It can collect financial data from various functional departments and generate valuable financial reports like balance sheets, general ledger, trial balance, financial statements, etc.
2. Manufacturing module: This module of ERP enables an enterprise to combine technology and business processes to get integrated solutions.
3. Production planning module: This module is used for optimising the utilisation of available resources and helps the organisation to plan their production.
4. HR module: HR stands for human resource. It maintains an updated and complete employee database including personal information, salary details, attendance, performance, promotion, etc. of all employees in an enterprise.
5. Inventory control module: This module covers processes of maintaining the appropriate level of stock in the warehouse.
6. Purchasing module: This module is used for making the required raw materials available in the right time and at the right price.
7. Marketing module: It is used for monitoring and tracking customer orders, increasing customer satisfaction and for eliminating credit risks.
8. Sales and distribution module: It deals with important parts of a sales cycle. Sales cycle includes inquiries, order placement, order scheduling, dispatching and invoicing.
9. Quality management module: This module is used for managing the quality of the product.

What is Business Process Re-engineering (BPR)?

BPR is the analysis and redesign of work flow within an enterprise. It involves changes in structure and process of a business environment. Re-engineering of a business will result in efficient time management, reduced cost and effective utilization of resources. Re-engineering is the rethinking and redesigning of a business process to achieve

improvements in the performance of an enterprise. Business process is a structured set of activities designed to produce a specified output for an enterprise.

What is the connection between ERP and BPR?

Business process re-engineering will help an enterprise to determine the changes in the structure or process of a business for better aspects. So ERP and BPR are related and they go hand in hand, and in most of the cases business process re engineering is performed before enterprise resource planning.

What are the different phases of ERP implementation?

Pre evaluation screening: It is the process of selecting an appropriate ERP package.

Package selection: The screened package should be flexible enough to meet the enterprise requirements.

Project planning: In this phase, the implementation process is planned and designed.

Gap analysis: Even the best ERP package will be able to meet only 80 percentage of the needs of the enterprise. So, the gap should be analysed.

Business Process Reengineering (BPR): The fundamental rethinking and redesign of the business process to achieve improvements in performance such as cost, quality, service and speed of an enterprise is called business process re engineering.

Installation and configuration: This is the main functional phase of an ERP implementation. The task of configuration of ERP system should be assigned to experienced staff.

Implementation team training: This is the phase where the company trains its employees to implement and later run the system.

System testing: The software is tested to ensure that it performs properly from both the technical and functional areas of an enterprise.

Going live: This is the phase where ERP is made available to the entire organization. After this phase, the system is ready for use.

End-user training: The actual users of the ERP system need training on how to use the system. This phase may be started before the system goes live.

Post implementation: After installing and operating a new ERP system, there may be the need of updating and evaluating the system.

Popular ERP packages

- **Oracle:** The ERP package from Oracle provides strong finance and accounting module. It also provides good customer and supplier interaction, effective production analysis, efficient human resource management and better pricing module.
- **SAP:** SAP stands for Systems, Applications and Products for data processing. SAP also developed Customer Relationship Management (CRM), Supply Chain Management (SCM), and Product Life cycle Management (PLM) software.
- **Odoo:** Odoo is an open source ERP. In open source ERP the source code or program can be modified as necessary, based on the requirement of organization.

- **Microsoft Dynamics:** It provides a group of enterprise resource planning products primarily aimed at midsized enterprises. This package can be installed and used easily and it provides good user interface.
- **Tally ERP:** Tally ERP is a business accounting software for accounting, inventory and payroll.

Benefits of ERP system

- Improved resource utilization
- Better customer satisfaction
- Provides accurate information
- Decision making capability
- Increased flexibility
- Information integrity

Risks of ERP system

- High cost
- Time consuming
- Requirement of additional trained staff
- Operational and maintenance issues

ERP related Technologies

1. **Product Life Cycle Management (PLM)**: Product life cycle is used for determining the lifespan of a product. Product life cycle management is the process of managing the entire life cycle of a product.
2. **Customer Relationship Management (CRM)**: CRM is a broadly used term that covers policies used by an enterprise to manage their relationships with customers.
3. **Management Information System (MIS)**: Management Information System can be defined as an integrated system of man and machine for providing the information to support the operations, the management and the decision making function in an organisation.
4. **Supply Chain Management (SCM)**: The supply chain consists of all the activities associated with moving goods from the supplier to the customer. Supply Chain Management (SCM) is a systematic approach for managing supply chain. SCM activities include inventory management, transportation management, warehouse management, distribution strategy planning, customer service performance monitoring, computer simulation etc.
5. **Decision Support System (DSS)**: Decision Support Systems are interactive, computer-based systems that aid users in judgment and choice activities. DSS focuses on providing help in analysing situations rather than providing right information in the form of various types of reports.

Questions from Previous Years' Question Papers (Computer Applications)

1. Briefly explain any two ERP related technology. (3) (March 2016)
2. _____ is an open source ERP software.
   (a) SAP (b) Tally ERP (c) Oracle (d) Odoo (1) (March2016)
3. Explain the benefits of ERP system. (3) (SAY 2016)
4. DSS stands for _____.
   (a) Digital Signal System (b) Design Support System
   (c) Decision Support System (d) Database Support System (1) (SAY 2016)
5. Explain the importance of BPR in ERP implementation. (5) (March 2017)
6. Selection of ERP package is very crucial in the implementation of ERP system. Give a short note on any five popular ERP packages. (5) (March 2017)
7. List the benefits of ERP implementation in Enterprise. (3) (SAY 2017)
8. SAP stands for _____. (1) (SAY 2017)