5.1.8.3.1. Features of ERP

The general ERP model shown in **figure 9** has a central data base shared by all functions of the enterprise represented by four quadrants in the figure. The figure represents the concept of enterprise resources planning and execution, symbolizing integrated functionality and the global nature of today's enterprises.

Some of the salient features of ERP are

1) **Accommodating Variety:** The ERP software solution provides both multi-lingual and multi-currency capabilities. Also, multi mode manufacturing and multi-facility provide the capability required to compete and succeed globally.

2) **Integrated Management Information:** Today's business managers use ERP for:
   i) Flexible reporting tools to extract the information as and when needed without depending on an information system department (MIS department).
   ii) Electronic Data Interchange (EDI) to electronically accept customer information like purchase orders schedule amendments or cash payments and electronically send order acknowledgement and invoices to customers.
   iii) Imaging to provide the ability to display drawings or specifications, ability to store original sale orders purchase orders, quotations, and contracts.
   iv) Database Creation: Starting with time and attendance reporting, monitoring and control of machines and post-sales statistics.

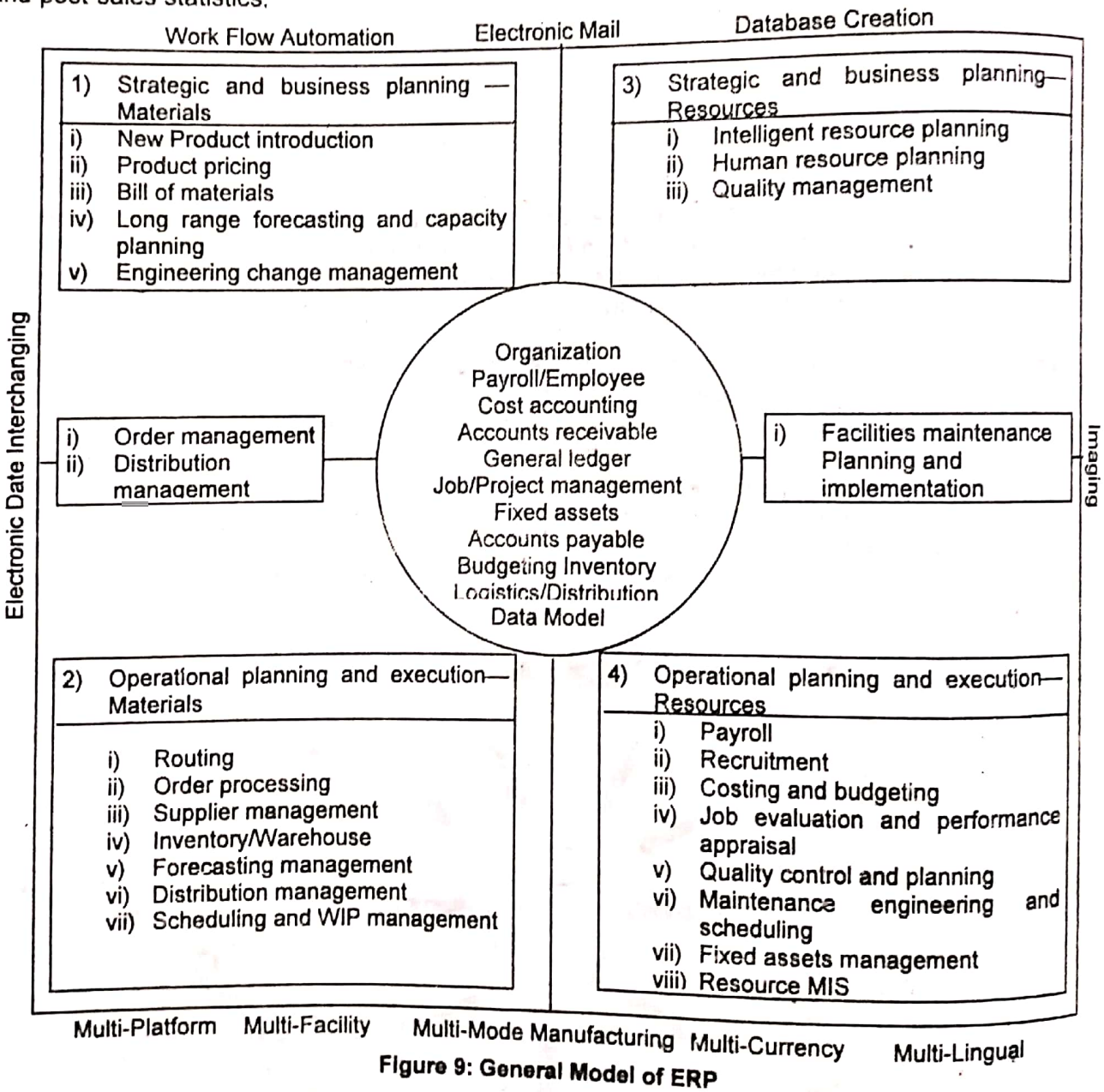

Figure 9: General Model of ERP

3) **Seamless Integration:** Integration of new product introductions or changes to existing products fully into the enterprise system, also known as 'engineering change management', is crucial to the enterprise. The engineering change management should include electronic approval, routing, change-order process routing, revision-level control and automatic generation of product structures.

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4) **Supply Chain Management:** End-to-end supply chain management is crucial for enterprises having multiple manufacturing units and distribution networks. Intelligent Resource Planning (IRP) is used to optimize the overall flow of demand and supply data and to build relationship between various activities to optimally identify the demand supply chain.

5) **Resource Management:** The resources such as equipment and human resources should be effectively managed. To facilitate effective management of equipment resources, on line records of equipment location and status need to be kept and proper accounting methods need to be followed in respect of operating costs and maintenance costs.

   To manage human resources effectively, functions such as employee database job descriptions and evaluations, applicant tracking, requisition management, performance review, cost benefits, career and succession planning, creating alternate organization structures, taking care of training needs etc., are provided by the ERP software package.

   To facilitate total quality management (TQM), the ERP provides for quality planning required for ISO 9000 certification.

6) **Integrated Data Model:** The heart of any ERP system is the creation of an integrated data model which has a true integration capability over the entire enterprise system particularly providing the data for employees, suppliers and customers.

5.1.8.3.2. Scope of ERP

The various areas normally covered by ERP are:

1) **Financials:** Financial accounting, treasury management, asset management and enterprise control.
2) **Logistics:** Production planning, materials management, plant maintenance, quality management, project management, sales and distribution management.
3) **Human Resources:** Personnel management, training and development and skills inventory.
4) **Workflow:** Integrates the entire organization with flexible assignment of tasks and responsibilities to locations, positions, jobs, groups or individuals.

5.1.8.3.3. Advantages of ERP Systems

1) **Inventory Reduction:** Through this process, it is possible to procure a component as it is needed, thereby avoiding costs of carrying it and excessive safety stock in inventory.
2) **Reduction in Production and Delivery Lead Time:** By coordinating inventories and procurement and production decisions, the delay in production is avoided.
3) **Realistic Commitment:** By using ERP, the production department can give the marketing department timely information about likely delivery times to customers, thus maximizing customer service.
4) **Increased Efficiency:** The information provided by ERP encourages and supports production efficiencies.
5) **Modular Approach:** With a modular approach, ERP vendors are on the right track, because it would be complex to cover all of the separate functions in a single module. This approach enables ERP users to implement only those modules that they consider would add maximum value to their business.
6) **Decision Support:** ERP assists in the dissemination of information of all the functions of a business to the top level management, and enable them to take the right decision at the right time.
7) **Distributed Computing:** The move toward client/server technology or distributed computing means using multiple small computers instead of single large ones for a business's computing needs. ERP software programs are small enough to run on personal computers. Additionally, since many important production and inventory decisions tend to get made in different locations and at different levels in an organization, ERP and its toolbox of software functions is a good fit for distributed computing.

5.1.8.3.4. Disadvantages of ERP Systems

Unfortunately, implementing ERP systems can be difficult and error-prone. Some of the major disadvantages or ERP systems are:

1) **Expense and Time in Implementation:** Getting the full benefits of ERP takes time and money. Although ERP offers many strategic advantages by streamlining a company's TPSs, large firms typically need three to five years and spend tens of millions of dollars to implement a successful ERP system.
2) **Difficulty Implementing Change:** In some cases, a company has to radically change how it operates to conform to the ERP's work processes – its best practices. These changes can be so drastic to long-time employees that they retire or quit rather than go through the change. This exodus can leave a firm short of

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