4.2. ENTERPRISE RESOURCE PLANNING (ERP)

Enterprise Resource Planning systems (ERP) are management information systems that integrate and automate many of the business practices associated with the operations or production aspects of a company.

According to Kumar, "Enterprise Resource Planning (ERP) systems are configurable information systems packages that integrate information and information-based processes within and across functional areas in an organization".

ERP typically include
i) Manufacturing,
ii) Logistics,
iii) Distribution,
iv) Inventory,
v) Shipping,
vi) Invoicing, and
vii) Accounting.

Enterprise Resource Planning or ERP software can aid in the control of many business activities, like sales, delivery, billing, production, inventory management, and Human Resource Management Systems. They are often called back office systems indicating that customers and the general public are not directly involved. This is contrasted with front office systems like customer relationship management systems that deal directly with the customer.

4.2.1. ERP as Cross Functional System

ERPs are cross-functional and enterprise wide. All functional departments that are involved in operations or production are integrated in one system. In addition to manufacturing, warehousing, and shipping, this would include accounting, human resources, marketing, and strategic management.

Enterprise Resource Planning systems (ERPs) integrate (or attempt to integrate) all data and processes of an organization into a unified system. A typical ERP system will use multiple components of computer software and hardware to achieve the integration. A key ingredient of most ERP systems is the use of a unified database to store data for the various system modules.

Business . . .

The term ERP originally implied systems designed to plan the utilization of enterprise-wide resources. Although the acronym ERP originated in the manufacturing environment, today's use of the term ERP systems has much broader scope. ERP systems typically attempt to cover all basic functions of an organization, regardless of the organization's business or charter. Business, non-profit organizations, non governmental organizations, governments, and other large entities utilize ERP systems.
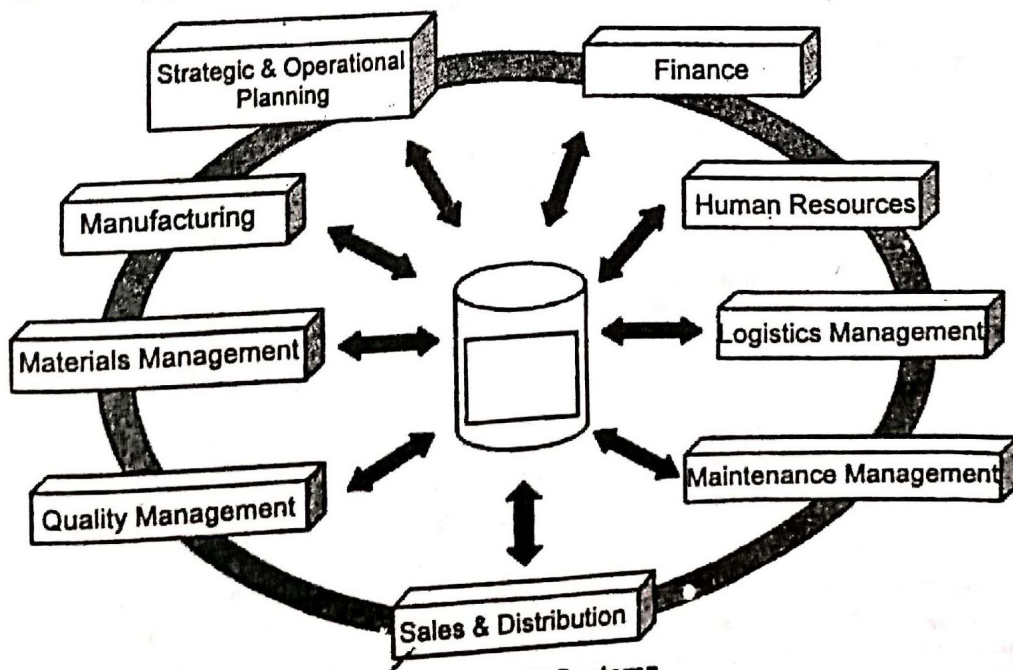
Typically, before ERP implementation, each department has its own computer system optimized for the requirements that a department needs. As aside in **figure 1**, each department will maintain separate databases and desing applications as per their functionalities. These will result in local optima and overall very poor results across all the departments or within the company.
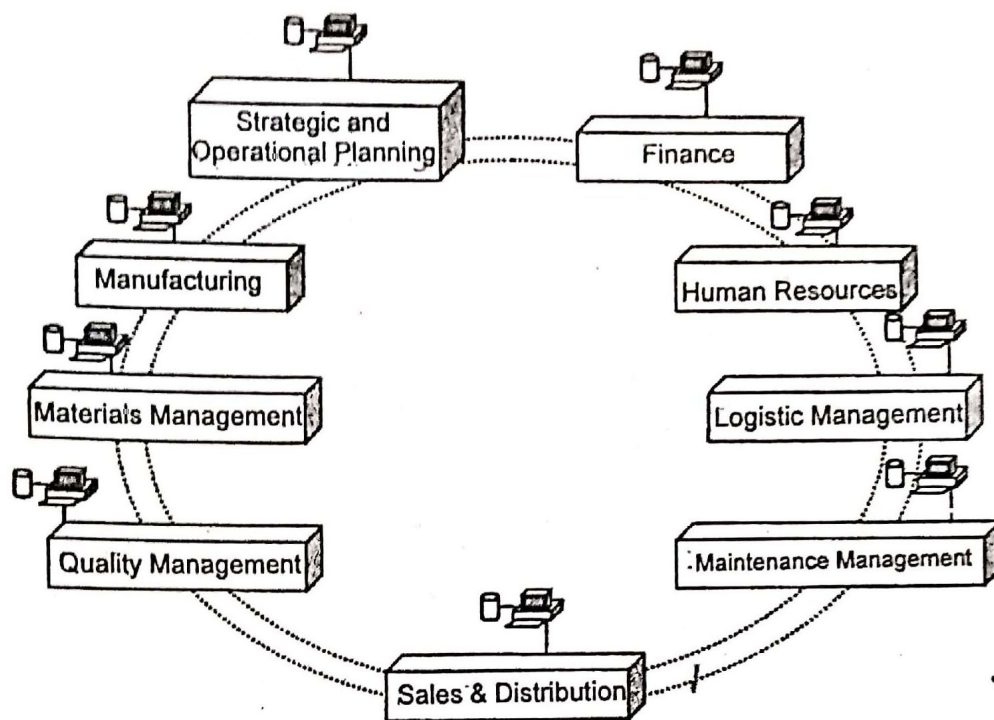
Figure 1: Stand Alone Systems

ERP combines all the business requirements of the company together into a single, integrated software programs that runs off a single database so that the various departments can more easily share information and communicate with each other. As below in **figure 2**, conceptually ERP replaces the old standalone computer systems in finance, HR, manufacturing, etc., with a single software program that facilitates various functional modules. Thus everybody from the finance, manufacturing, purchasing, etc. will still get their own advantages of software, along with the added feature of availability of information across other departments to improve decision quality.

For example, someone in finance can use ERP to see if any sale order has been shipped from the warehouse so that he can now confidently plan for working capital management for the next period.

Figure 2: ERP Systems