

**Tishk International University**  
**Engineering Faculty**  
**Mechatronics Department**



# **Industrial Engineering**

**TOPIC:** Enterprise Resource  
Planning (ERP)  
**Week6\_Lecture1**

**Grade2&3- Fall Semester 2021-2022**

**Instructor: Sivakumar**



# Objectives

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Introduction

What is ERP.?

History/Evolution of ERP.

Module/components of ERP.

ERP Software Packages



# Enterprise Resource Planning [ERP] Solution



# Introduction



Enterprise resource planning (ERP) systems are extensions of MRP systems that run on a single database in a client server environment. ERP systems support marketing and finance departments in addition to the production department. Significant coordination advantages arise when all functions draw and add to the same data. SAP is currently the leading provider of ERP systems.



ERP systems are the kind of software tools which are used to manage the data of an enterprise. ERP system helps different organizations to deal with different departments of an enterprise. Different departments like receiving, inventory management, customer order management, production planning, shipping, accounting, human resource management, and other business functions.

# **ERP : Definition**

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- ❑ ERP is a set of integrated business applications, or modules which carry out common business functions such as general ledger, accounting, or order management.
- ❑ IT software that integrates business activities across an enterprise



# What is ERP?

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- ❑ ERP is short for enterprise resource planning.
- ❑ An ERP system is an attempt to integrate **all functions** across a company to a single computer system that can serve all those functions' specific needs.
- ❑ Support business through optimizing, maintaining, and tracking business functions.
- ❑ From product planning, parts purchasing, inventory control, and product distribution, to order tracking.



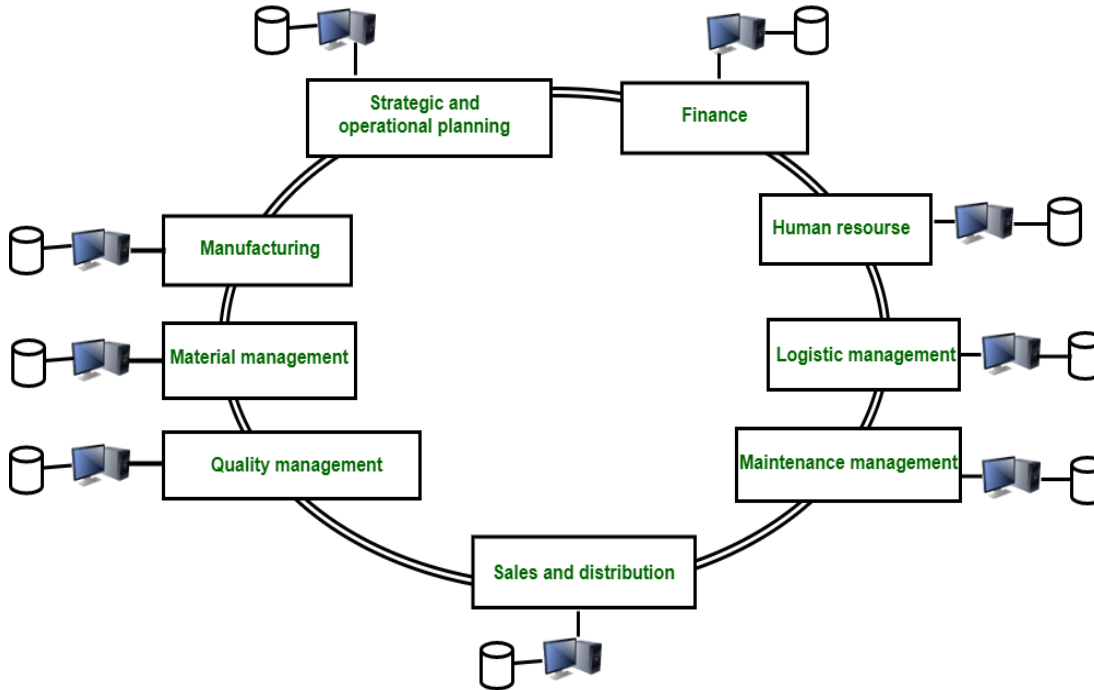
# Evolution /History of ERP

- ▶ **1960's - Systems Just for Inventory Control**
- ▶ **1970's - MRP – Material Requirement Planning**  
(Inventory with material planning & procurement),  
**MMAS-Material Management and Accounting System.**
- ▶ **1980's - MRP II – Manufacturing Resources Planning**  
(Extended MRP to shop floor & distribution Mgnt.)
- ▶ **Mid 1990's - ERP – Enterprise Resource Planning**  
(Covering all the activities of an Enterprise)





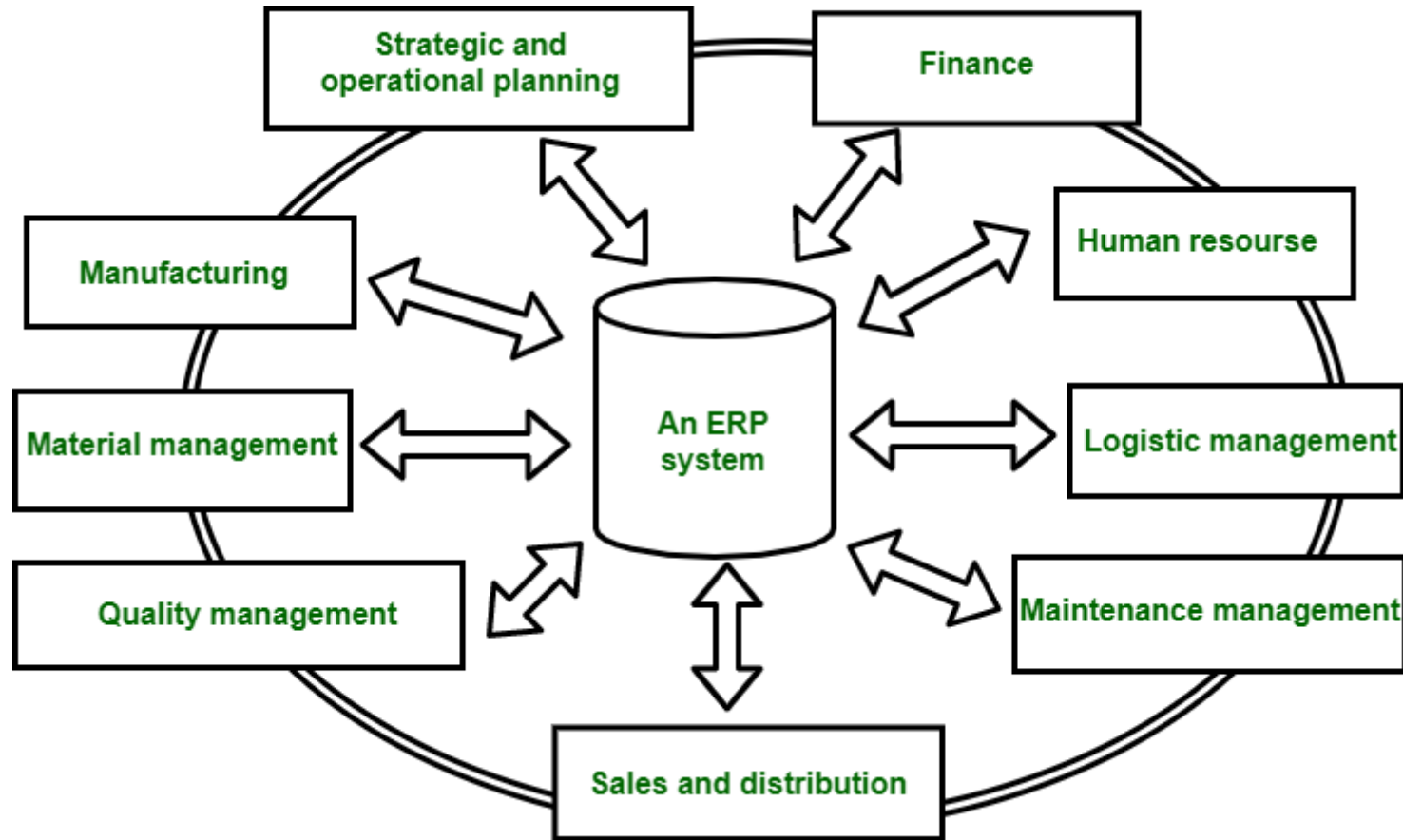
# Before ERP



Before an ERP system, there are different databases of different departments which they managed by their own. The employees of one department does not know about anything about other department.



# ERP System





After ERP system, databases of different departments are managed by one system called ERP system. It keep tracks of all the database within system. In this scenario, employee of one department have information regarding the other departments.



# Components OF ERP!



# Components OF ERP!

## Accounting and Finance

- This gathers and manage financial data and financial processes from various functional departments and generates valuable financial reports such as balance sheet, general ledger; trial balance and quarterly financial statements.

## Human Resources

- This component maintains a employee database containing information about employees contact information, salary details, attendance, performance evaluation and promotion details.
- This component helps the management to make use of the employees best talent.



# Components OF ERP!

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## ❓ Manufacturing

- This component provides the information needed for the manufacturing process to take place.
- It contains number of manufacturing methods, so that the organization can choose the best which fits for them
- Bills of Material, Scheduling, Capacity, Workflow Management, Quality Control, Cost Management, Manufacturing Process, Manufacturing Projects, Manufacturing Flow.



# Components OF ERP!

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## Projects Management

- Project management is the discipline of planning, organizing, motivating, and controlling resources to achieve specific goals.
- Costing, Billing, Time and Expense, Activity Management

## ❓ Customer Relationship Management

- Involves managing all aspects of a customer's relationship with an organization to increase customer loyalty and retention and an organization's profitability.
- Sales and Marketing, Commissions, Service, Customer Contact and Call Center support.



# Components OF ERP!

- ❑ **Supply Chain Management**
- ❑ Supply Chain Management (SCM), sometimes referred to as logistics, improves the flow of materials through an organization by managing planning, scheduling, procurement, and fulfillment, to maximize customer satisfaction and profitability.





# ERP – Implementation Options

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## OPTION 1 – MAKE [Using Internal resources]

Developing a custom-built ERP package, specific to the requirements of the organization, with the help of the in-house IT department

## OPTION 2 - BUY

Going for Tailor-made ERP packages available in the market like SAP, Oracle applications, PeopleSoft etc.



# ERP Vendors (SOFTWARES Packages)



## Vendors



**ORACLE®**



**SIEBEL®**

*IT'S ALL ABOUT THE CUSTOMER™*



**JDEdwards®**

*Alliance Partner*



# ERP Vendors

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❓ **SAP** - Systems Applications Products in  
Data Processing

37.50% - Honda, IBM, Bank of Canada, P & G.

❓ **Oracle** - 10.50% - USPS, CBS, Nike, Kodak,  
Toronto Dominion Bank



# ERP Vendors

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- ❑ **Peoplesoft** - - 16.50% - NBA, Adidas, Anderson Consulting, Hilton Hotels, NYNEX
  
- ❑ **J.D. Edwards** - 16.50% - Harley Davidson, Saab Automobile, BellSouth Cellular Corporation, Holiday Inns, Fox Television Stations
  
- ❑ **21% others.**



# Advantage of ERP

- ❑ Business Integration
- ❑ Improved customer service and order fulfillment
- ❑ Improved communication with suppliers and customers.
- ❑ One common system - less duplication, more efficient.
- ❑ Reduce inventory.
- ❑ Saves enormous time and effort in data entry.
- ❑ Improved business performance.



# Disadvantages of ERP

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- ❑ High Software cost
- ❑ Consulting Fees.
- ❑ Forced change of processes.
- ❑ Very complex software
- ❑ Lack of trained people
- ❑ Not Internet-ready





**Thank you**