



# Evolution & Structure of ERP

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# INVENTORY CONTROL

- ❖ The earlier generation EIS packages were based on **individual business function automation** such as inventory management and financial accounting systems.
- ❖ Also, the focus of manufacturing systems in the **1960s** was on **inventory control**. Most of the software packages then (usually customized) were designed to handle inventory based on traditional inventory concepts. Evolution of Enterprise Information Systems (EIS)

# MRP-I & MRP-II

- ❖ 1970s – MRP (Material Requirement Planning).

This system helped in translating the master production schedule into requirements for individual units like sub assemblies, components and raw materials. MRP systems helped determine what to order, how much to order, when to order and when to schedule delivery.

- ❖ 1980s – MRPII (Manufacturing Resource Planning)

- MRPII supported efforts to optimize the entire plant production system by supporting capacity planning, shop floor control, and distribution management activities. MRPII was further extended to support areas like Finance, Human Resources, Engineering, Project Management etc.
- As MRPII like systems were adopted by non manufacturing enterprises like banks and airlines to support cross-functional coordination and integration of business processes, the “M” no longer fit, thus the name ERP was **coined**.

# ERP

- ❖ In the early 1990s , **MRP-II** was further extended to cover areas such as engineering , finance , human resources , sales and distribution , and projects management , that is, the complete gamut of activities within any business enterprise .
- ❖ Hence, the term **ERP** was coined. ERP is focussed within an enterprise.
- ❖ MRP-II was based on mainframe technology and hence was highly centralized and server-centric. ERP is based on client-server computing architecture and hence distributed in nature .

# ERP

- ❖ ERP is the foundation system for domestic and global business operations, supporting most or all functional areas in their daily operations. For some organizations, ERP is a source of competitive advantage.
- ❖ It is a business **strategy** and set of **industry-domain-specific** applications that build customer and shareholder **communities** value network system by enabling and optimising enterprise and **inter-enterprise** collaborative operational and financial processes.

# ERP

## PLANNING the RESOURCES of an ENTERPRISE

- ❖ ERP is a way to integrate the data and processes of an organization into one single system with modules that support core business areas such as manufacturing, distribution, financials and human resources.
- ❖ ERP allows managers from most or all departments to look vertically and horizontally across the organization to see what they must see (information) to be productive in their managerial roles.
- ❖ ERP captures data from historical activity and current operations .That data can be transformed into information that, along with external information, is useful in planning and controlling operations, and in developing business strategies.
- ❖ ERP is evolving into a Multi-Module Application Software Package that automates inter-organizational business processes across the supply chain which involve business partners, suppliers, customers, and more.

# ERP II

## 21st century – ERP II

- ❖ ERP II is the name some now use to describe ERP like systems that are evolving to support inter-organizational business processes across the supply chain.
- ❖ ERP II is a business strategy and a set of collaborative operational and financial processes internally and beyond the enterprise
- ❖ New multi-enterprise business models like Value **Collaboration** Networks, customer-centric networks that coordinate all players in the supply chain, are becoming popular as we enter the 21st century
- ❖ These new business models reflect an increased business focus on external integration
- ❖ There is movement away from Client-Server System to Internet Based Architecture

# New Technologies in ERP II

- ❖ E-Commerce (Electronic Commerce)
- ❖ M-Commerce (Mobile & Wireless Technologies)
- ❖ C-Commerce (Collaborative Commerce)
- ❖ Middleware
- ❖ Enterprise Portal Technologies
- ❖ Web Services
- ❖ RFID
- ❖ Analytical Capabilities (Data Warehousing & Data Mining)
- ❖ CRM, SCM, SRM
- ❖ Knowledge Management
- ❖ Business Intelligence



# Difference Between ERP & ERP II

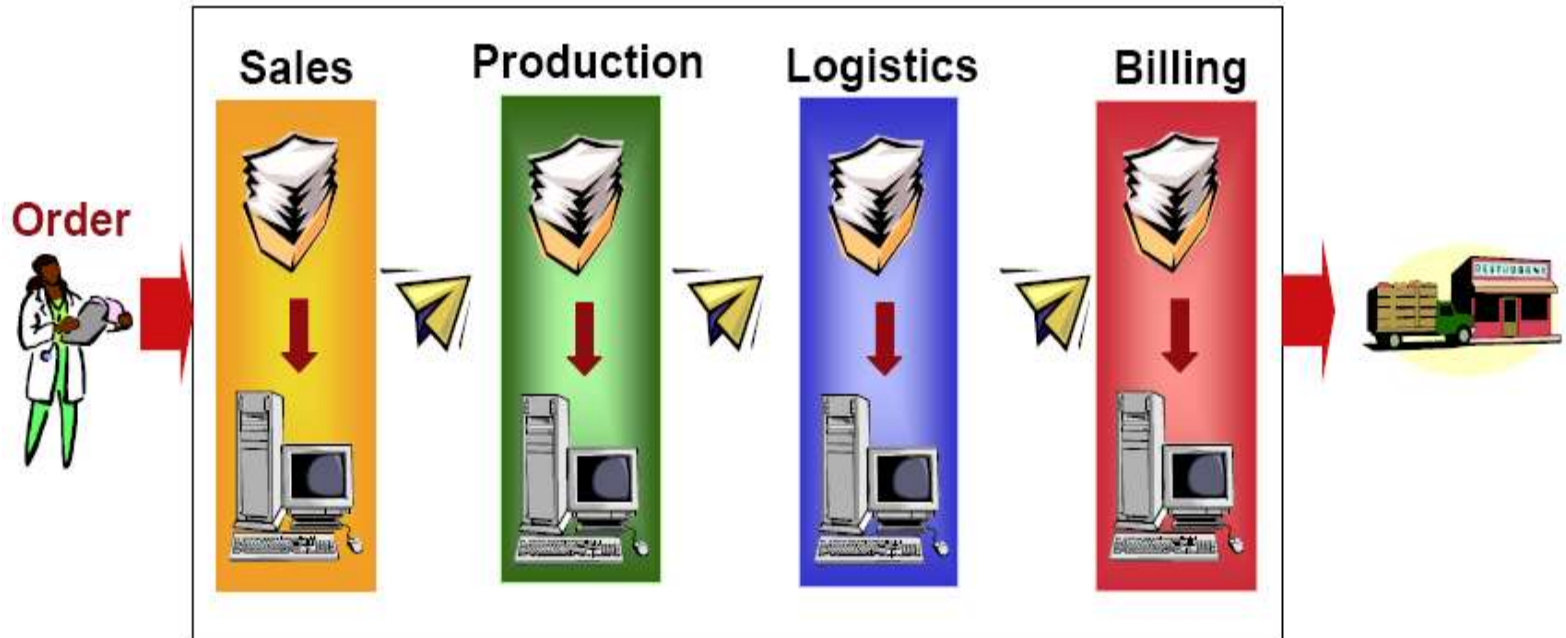
## Six key differences between ERP and ERP II Systems

Keys	ERP	ERP II
Role	Traditional ERP was concerned with optimizing an enterprise, Internal optimization.	ERP II systems are about optimizing the supply chain through collaboration with trading partners.
Domain	ERP systems focused on manufacturing and distribution.	ERP II systems will cross all sectors and segments of business.
Function	As ERP systems cross sectors and segments, they will no longer be able to present all things to all people.	ERP II vendors to pick the industries in which they're going to play, and focus on providing deep functionality for those users.
Process	In ERP systems, the processes were focused on the four walls of the enterprise.	ERP II systems will connect with trading partners, to take those processes beyond the boundaries of the enterprise.
Architecture	Old ERP systems were monolithic and closed.	ERP II systems will be Web-based, open to integrate and interoperate with other systems that allow users to choose just the functionality they need.
Data	Information in ERP systems is generated and consumed within the enterprise.	In an ERP II system, that same information will be available across the supply chain to authorized participants.

## The Evolution of ERP

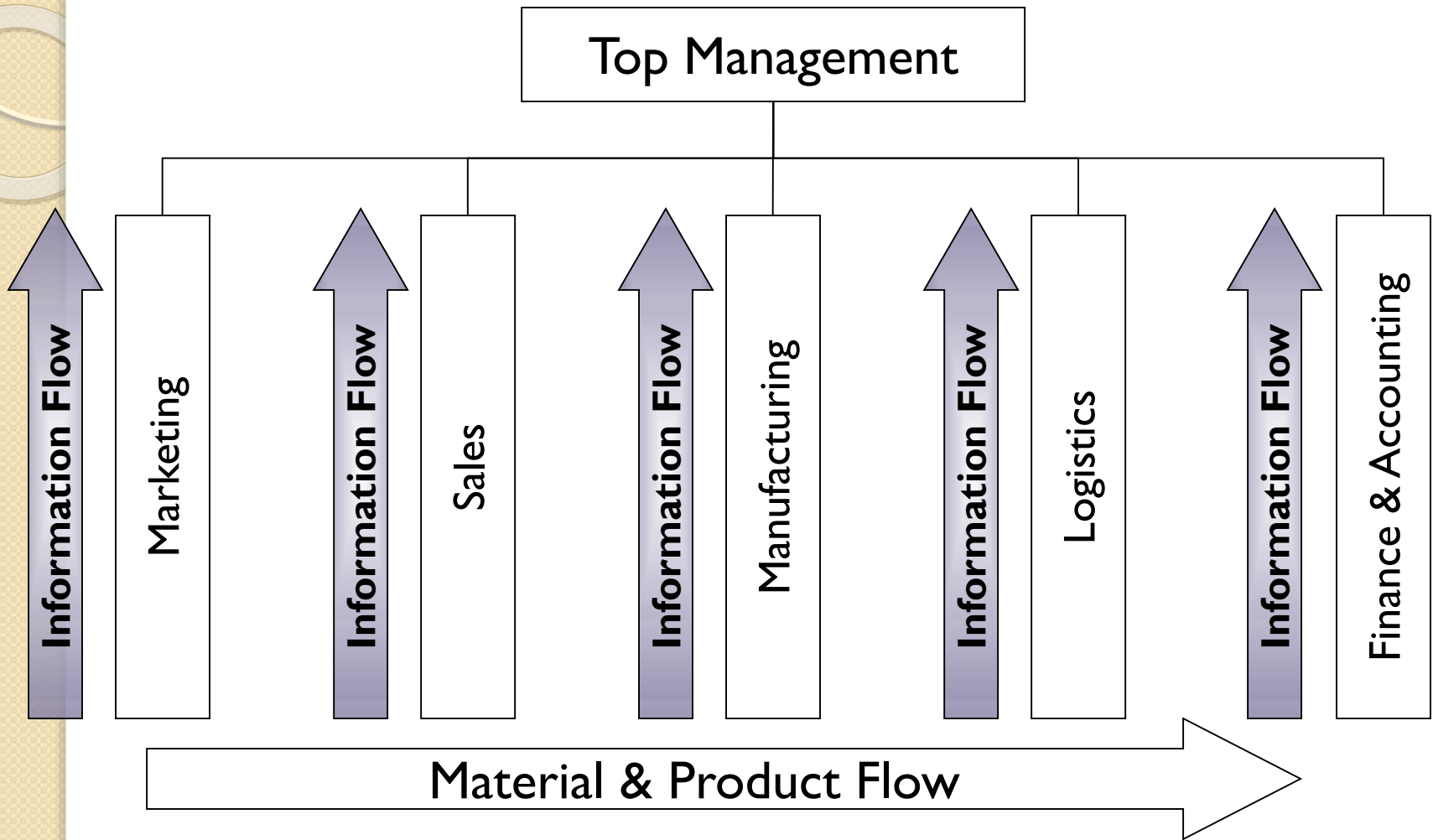
System	Primary Business Need (s)	Scope	Enabling Technology
<b>MRP</b>	Efficiency	Inventory Management and Production planning and control.	Mainframe computers, batch processing, traditional file systems.
<b>MRPII</b>	Efficiency, Effectiveness and integration of manufacturing systems	<b>Extending</b> to the entire manufacturing firm (becoming cross functional).	Mainframes and Mini computers, real-time (time sharing) processing ,database management systems (relational)
<b>ERP</b>	Efficiency (primarily back office), Effectiveness and integration of all organizational systems.	Entire organization (increasingly cross functional), both manufacturing and non-manufacturing operations	Mainframes, Mini and micro Computers, Client server networks with distributed processing and distributed databases, Data warehousing, and mining, knowledge management.
<b>ERP II</b>	Efficiency, Effectiveness and integration within and among enterprises.	Entire organization extending to other organizations (cross functional and cross enterprise--partners, suppliers, customers, etc.)	Mainframes, Client Server systems, distributed computing, knowledge management, internet technology (includes intranets and extranets). Internet, Web Service Architecture, wireless networking,Middleware,M-commerce,E-commerce

# BEFORE ERP



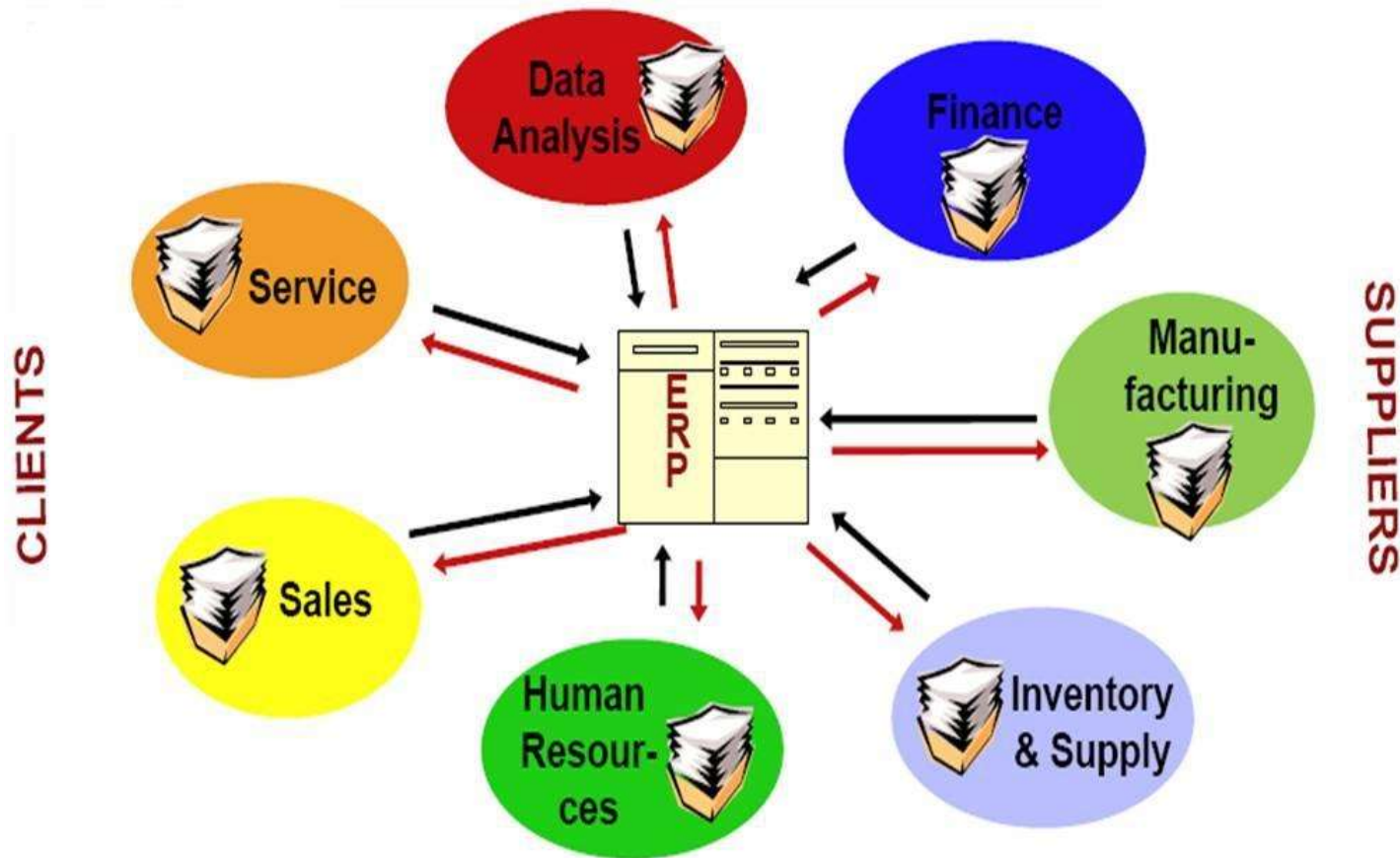
## Problems:

Delays, Lost Orders, Keying into different computer systems invite errors



**Figure 2-2** Information and material flows in a functional business model

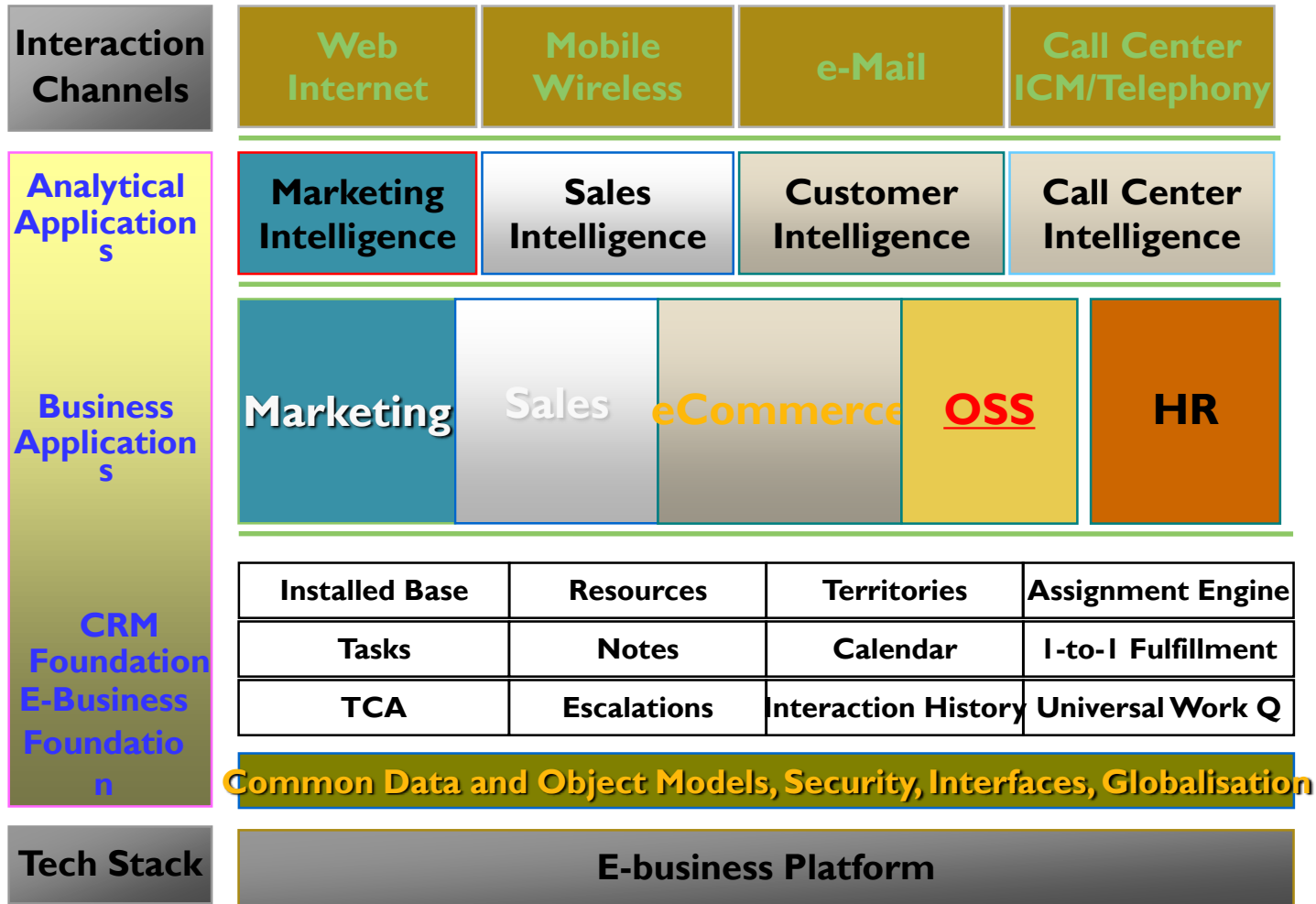
# AFTER ERP



Front-Office Functions

Back-Office Functions

# Typical ERP Components



# ERP Today

- ❖ Today's focus seem more to be external as organizations look for ways to support and improve relationships and interactions with customers, suppliers, partners and other **stakeholders**.
- ❖ The focus of ERP in increasingly on Front-Office Applications and inter-organizational business processes, thus making it visible to "OUTSIDERS"
- ❖ The increasing importance of E-Commerce and Globalization of business makes support of inter-organizational processes more important.
- ❖ ERP Vendors
  - SAP
  - PeopleSoft
  - Oracle
  - Microsoft Business Solutions
  - SSA Global
- ❖ ERP vendor products reflect the evolving business needs of clients and the capabilities of IT, perhaps most notably internet related technologies.
- ❖ ERP helps Organization to
  - improve competitiveness
  - increase profits
  - prosper in the global economy.

**THANK YOU**