SPM- UNIT 4 - SYLLABUS

- Overview - Benefits-Technologies related to ERP- ERP packages - Business Process Re-engineering- Implementation Life Cycle of ERP- Training - Team Training- End User Training- Post Implementation (Maintenance Mode) - Implementation in large-scale organization

- Applications of ERP in functional areas- Marketing- Personnel- Financial & Production.
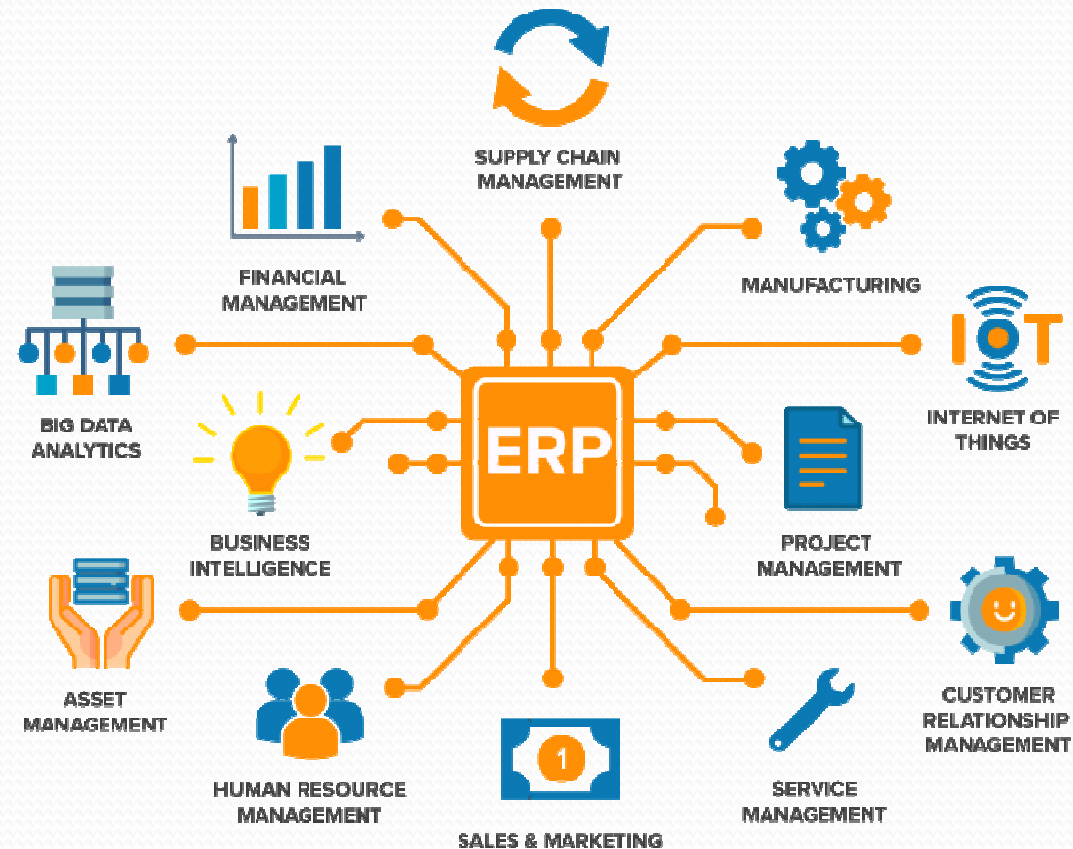
Software Project Management
UNIT - 4

Enterprise Resource Planning (ERP)

# 4.1 ERP: The Business Backbone

- ERP is a cross-functional enterprise backbone that integrates and automates processes within
  - Manufacturing
  - Logistics
  - Distribution
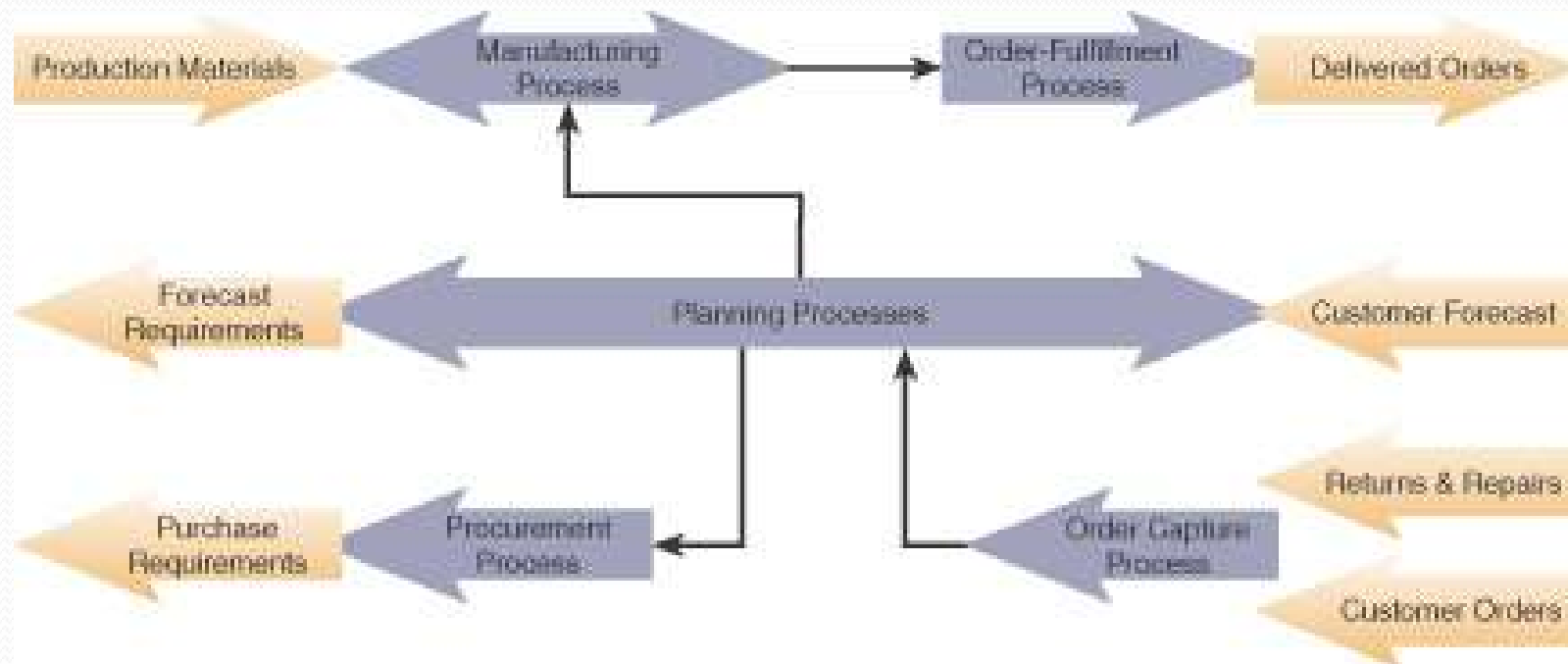 - Accounting
  - Finance
  - Human resources

ERP Defintion :

- Enterprise resource planning is a cross-functional enterprise system
  - An integrated suite of software modules
  - Supports basic internal business processes
  - Facilitates business, supplier, and customer information flows

ERP Application Components
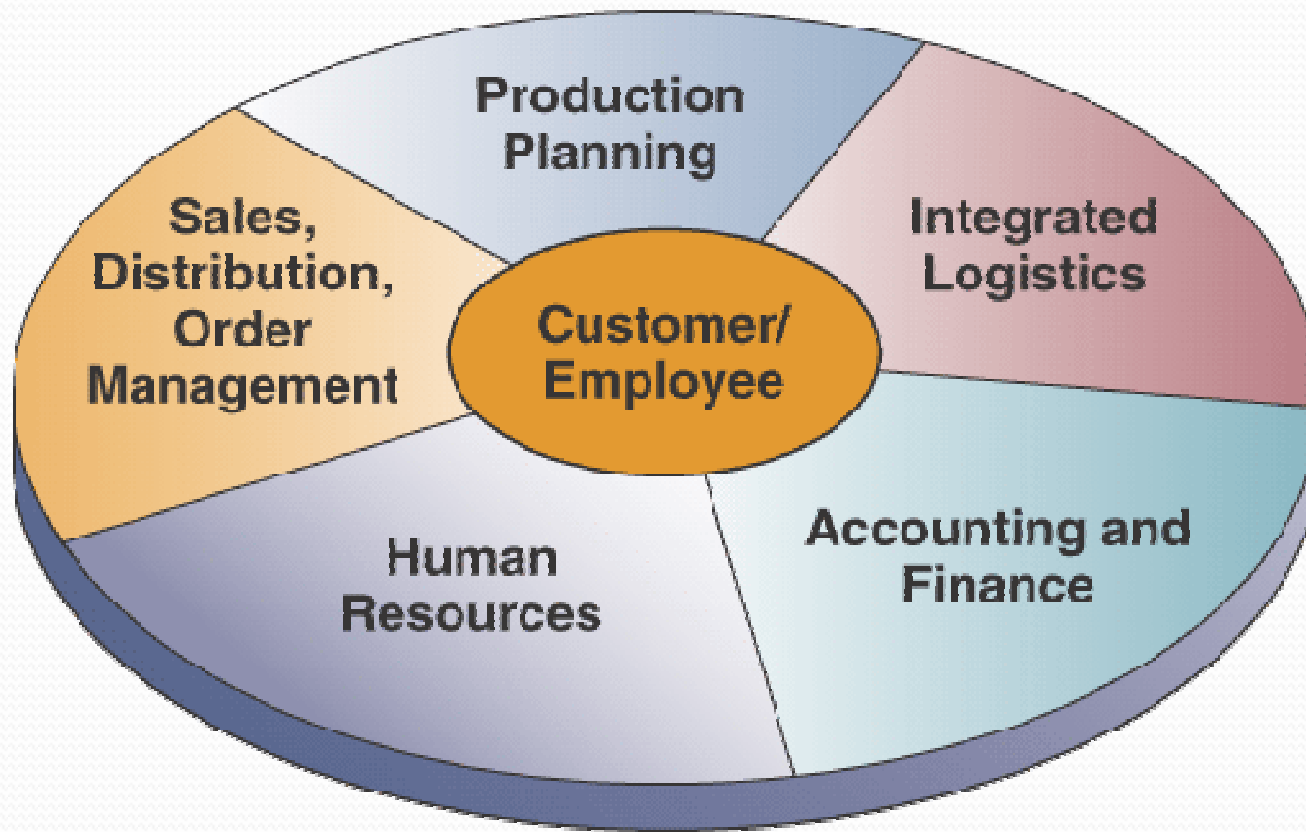
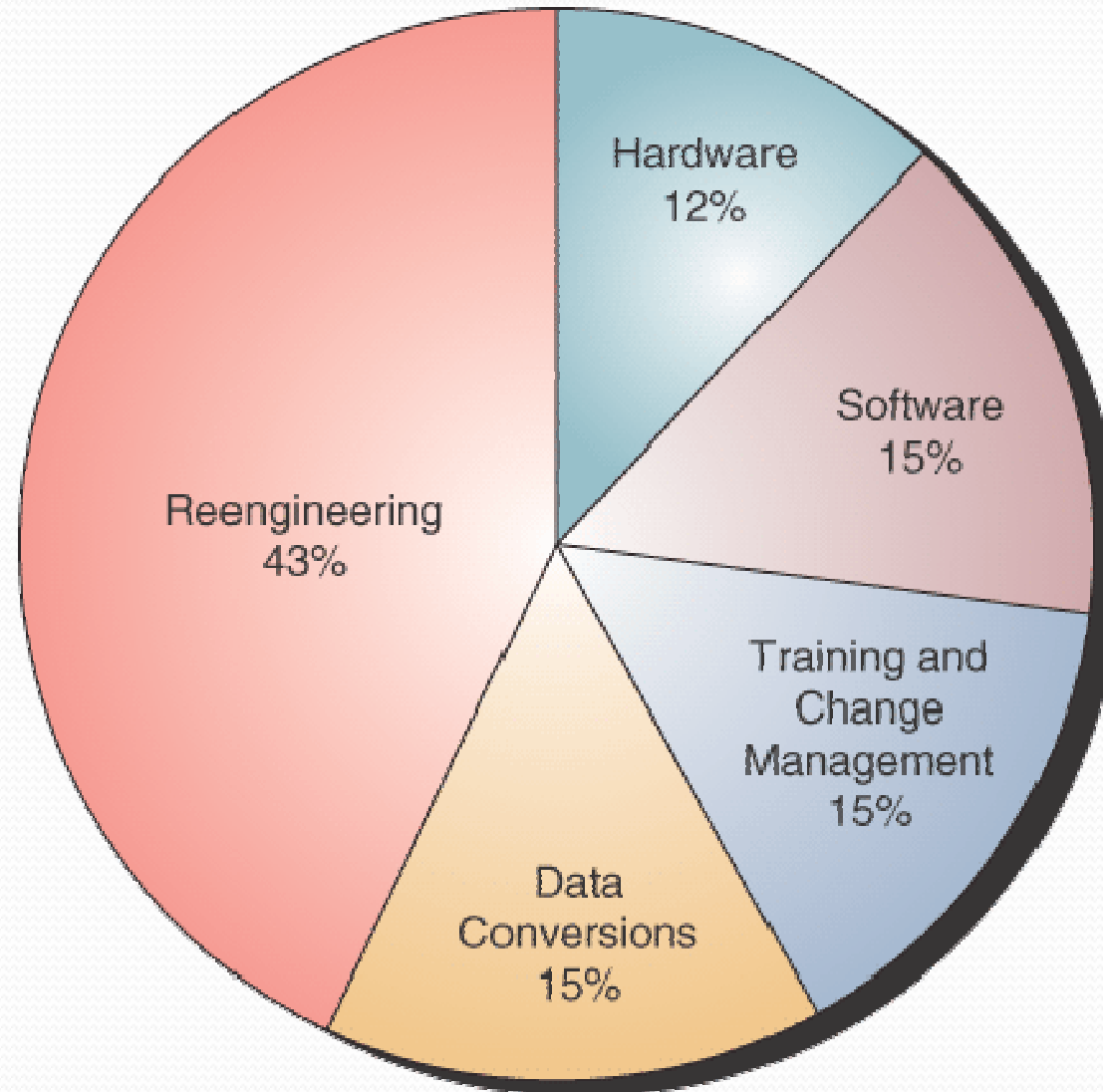# ERP Process and Information Flows

4.2 Benefits and Challenges of ERP

- **ERP Business Benefits**
  - Quality and efficiency
  - Decreased costs
  - Decision support
  - Enterprise agility
- **ERP Costs**
  - Risks and costs are considerable
  - Hardware and software are a small part of total costs
  - Failure can cripple or kill a business

Costs of Implementing a New ERP

Causes of ERP Failures

- Most common causes of ERP failure
  - Under-estimating the complexity of planning, development, training
  - Failure to involve affected employees in planning and development
  - Trying to do too much too fast
  - Insufficient training
  - Insufficient data conversion and testing
  - Over-reliance on ERP vendor or consultants

Trends in ERP

- Management Information Systems (MIS)
- Integrated Information Systems (IIS)
- Executive Information Systems (EIS)
- Corporate Information Systems (CIS)
- Enterprise Wide Systems (EWS)
- Material Resource Planning (MRP)
- Manufacturing Resource Planning (MRP II)
- Money Resource Planning (MRP III)

Trends in ERP

Cloud Based

e-Business Suites

Interenterprise ERP

Web-enabled ERP

Flexible ERP
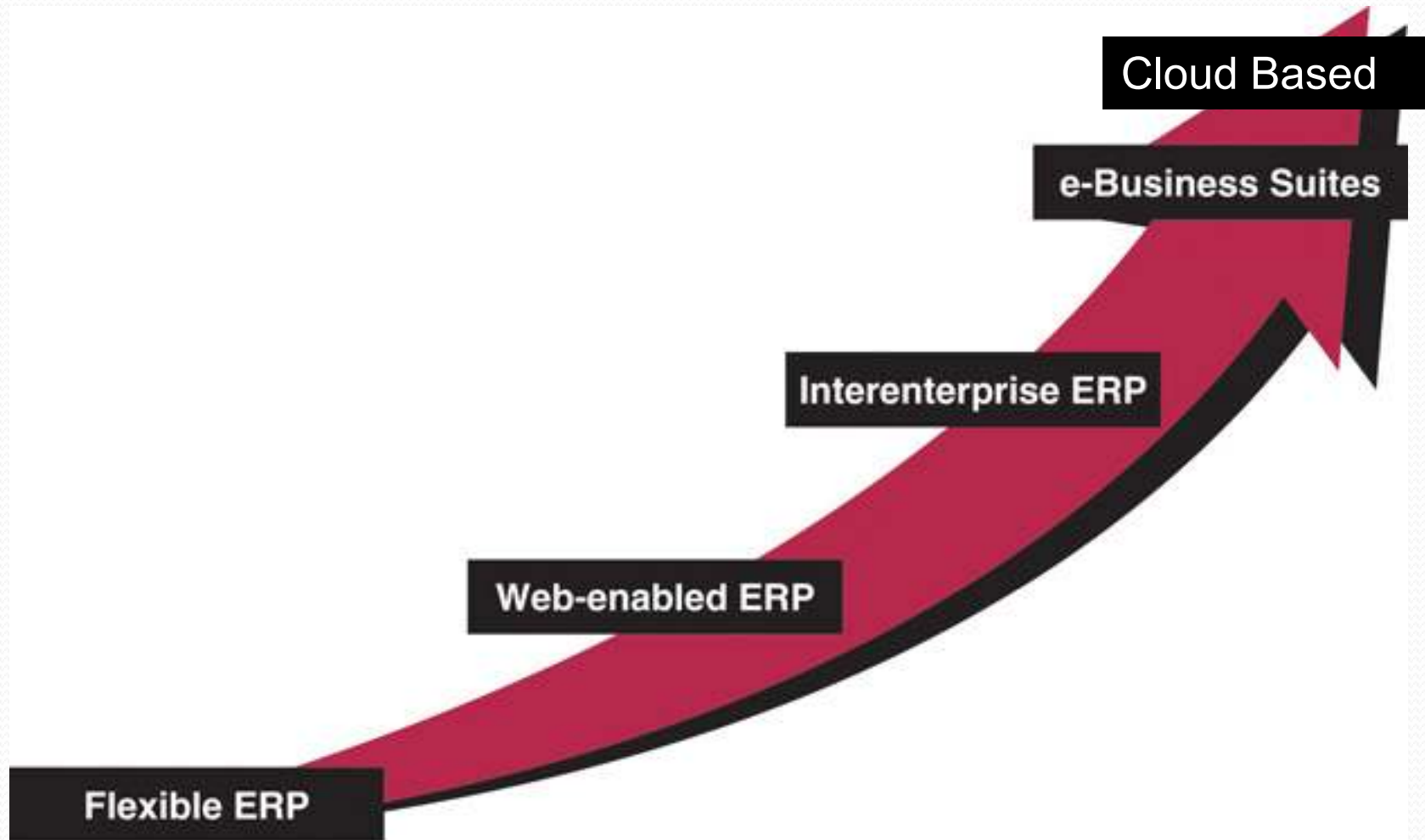
4.3 ERP PACKAGES.. Small list

- **Oracle** : Oracle Enterprise Resource Planning (ERP),Oracle E-Business Suite, Oracle Fusion,, Oracle Retail, NetSuite, Peoplesoft

- **SAP** - mySAP, SAP Business All-in-One, SAP Business ByDesign, SAP Business One, SAP Business Suite, WorkPLAN Enterprise

- **Syspro** - SYSPRO

- **Tally Solutions** - Tally.ERP 9

- **Microsoft** - Microsoft Dynamics FP, Microsoft Dynamics 365

4.4 BUSINESS PROCESS REENGINEERING

- **Business process reengineering** is the practice of rethinking and redesigning the way work is done to better support an organization's mission and reduce costs.

- Organizations **reengineer** two key areas of their **businesses**. First, they use modern technology to enhance data dissemination and decision-making **processes**.

4.4 BUSINESS PROCESS REENGINEERING

- Every company that intends to implement ERP has to reengineer its processes in one form or the other. This process is known as Business Process Reengineering (BPR).

- BPR is the fundamental rethinking and radical redesign of processes to achieve dramatic improvement, in critical, contemporary measures of performance such as cost, quality, service and speed,"

BPR

- BPR is reinventing and not enhancing or improving.
- Ask : "why do you do what you do", thereby eliminating business process altogether if it does not add any value to the customer.

4.5 Business Engineering

- Business Engineering has come out of merging of two concepts
    1. Information Technology
    2. Business Process Reengineering.

- Business Engineering is the rethinking of Business Processes to improve speed, quality and output of materials or services.

- Business Engineering is the method of development of business processes according to changing requirements.

4.6 ERP IMPLEMENTATION LIFE CYCLE

- ERP Implementation Life Cycle is the process of implementation of the enterprise resource planning in an organization.

- Involves steps and stages right from the
  - start,
  - planning for project implementation,
  - analysis,
  - design,
  - implementation,
  - transition and
  - operations.

ERP IMPLEMENTATION LIFE CYCLE

- **Selection of packages:**
  - In the selection process, ERP packages that are not suitable they are eliminated.
  - The right choice will determine the success of the ERP implementation.
  - A proper study and research should be done before the selection.

- **Project Planning:**
  - Proper planning of the implementation process is made and designed.
  - Resources to be allocated and the team members to be selected.

ERP IMPLEMENTATION LIFE CYCLE

- ## Analysis GAP:
  - GAP analysis is performed to analyze the current situation of the organization and its future position as needed.

- ## Re-engineering
  - implementation process involves many changes and alterations.
  - The job responsibilities of employees and the number of employees can be altered as well.

- ## Training:
  - Training of employees starts with the implementation process in the life cycle of the ERP implementation.
  - Employees **should** get used to the new system in order to run the system smoothly later.

ERP IMPLEMENTATION LIFE CYCLE

- **Testing**:
  - is carried out so that the errors can be found and resolved before the actual application process.

- **Application**:
  - This step is performed when data conversion is done and the work of the database is over.
  - Once the new system is implemented, the old system is removed. The end user is trained to use the new system.

- **Maintenance**:
  - Maintenance is carried out in the post-implementation life cycle of ERP implementation phase.
  - The problems are identified and employees learn how to deal it. Maintenance is also an important stage in the life cycle.

4.7 THE ERP IMPLEMENTATION TEAM

- An effective ERP implementation team with clear goals is the foundation of a successful implementation project.
  - Build an **internal team** that includes the people who helped select the ERP
  - An executive sponsor and representation from across the enterprise, as well as other senior management
  - Project Manager
  - Members from the main area of the manufacturing including finance, purchasing, quality, production, logistics, engineering, etc.

4.8 Implementation in large-scale organization:

- Different consulting organizations are providing the ERP softwares that should be chosen according to the needs by the organization.

- Some organizations fail in the implementation process but if they plan it according to the business requirements; it can bring a success to the organization.

Implementation in large-scale organization:

- **Strategic Planning**
  - This would involve assigning a project team from different departments like marketing, sales, supply chain, human resources, IT to formulate a plan for it.

- **Procedure Review**
  - Review the software capabilities. Identify where the training is needed and which manual processes in the organization should be automated in the ERP system. It will also involve developing certain standard operating procedures for the organization.

Implementation in large-scale organization:

- **Data Collection and Clean Up**
  - Team to examine the system data that should be linked with the ERP system as some data can be outdated.
  - They will also need to collect new data according to the requirements and then reviewing and cleaning all the data.

- **Testing and Training**
  - The organization would need to pre test the data if the system is working properly and has the accurate data.
  - They would need to train the users and can be done effectively and cheaply if they train the trainer.

Implementation in large-scale organization:

- **Evaluation**
  - Once the system has been implemented and has gone live, they need to evaluate if it has given solution to the problem.
  - It would be evaluated according to the objectives that were set in the planning phase.
  - The system might need continuous evaluation to increase the return on the investment.

4.9 Application of ERP in functional areas:

- ERP facilitates sharing of information across functions to eliminate inconsistency and duplication of effort

- **Marketing/Sales**

  - Sales and marketing departments can track customer experience from presale activities, contacting the customer, through the actual dispatch of the customer's order.

  - Tasks related to customer visits, expenses, shipping, invoicing, forecasting and competitor analysis can be automated and/or enhanced through an ERP system.

  - Employees can contact customers, follow up on invoices and track orders.

  - Sales and marketing personnel can monitor their individual goals, which also can be collated and analyzed by managers and business partners.

Application of ERP in functional areas:

- **Customer Relationship Management** –
  - Modules to focus on how a business communicates with its customers.
  - Include departments such as sales and marketing, and call center support, customer interaction data, sales pipeline management, lead prioritization and customer retention.
- **Supply Chain Management** –
  - Feature functions for purchasing, product configuration, supplier scheduling, goods inspections, claims processing, warehousing and more.

Application of ERP in functional areas

- **Manufacturing**
  - Engineering, scheduling capacity, quality control, workflow and product life management are among the core functions that can fall within an ERP system's manufacturing module.
- **Accounting/Finance**
  - By automating and streamlining tasks related to budgeting, cost and cash management, activity-based costing and other accounting/finance functions
  - ERP systems can provide businesses with real -time data and insights on performance

Application of ERP in functional areas:

- **Human Resources**
  - Include tools and dashboards to gather and interpret data on training, recruiting, payroll, benefits, retirement and diversity management. HR managers also can monitor and measure key performance indicators (KPIs) for individual employees, job roles and departments.

4.10 Supply Chain Management (SCM)

- Fundamentally, supply chain management helps a company
  - Get the right products
  - To the right place
  - At the right time
  - In the proper quantity
  - At an acceptable cost

Goals of SCM

- The goal of SCM is to efficiently

  - Forecast demand

  - Control inventory

  - Enhance relationships with customers, suppliers, distributors, and others

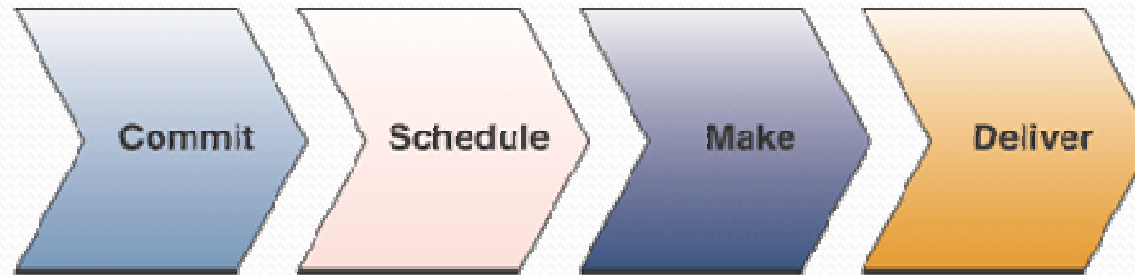 - Receive feedback on the status of every link in the supply chain
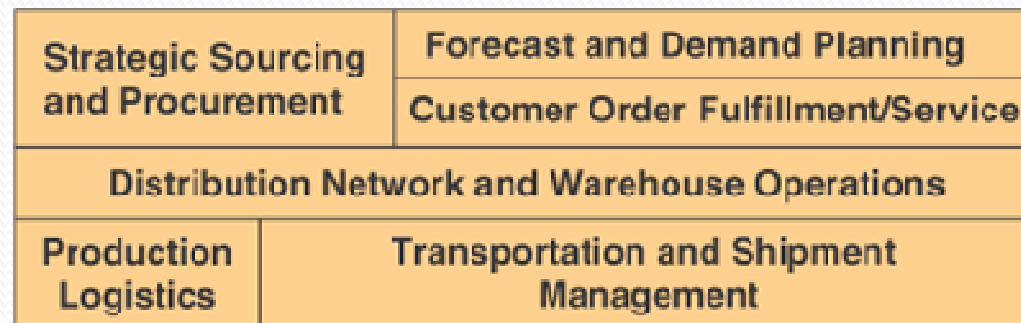
What is a Supply Chain?

- The interrelationships
  - With suppliers, customers, distributors, and other businesses
  - Needed to design, build, and sell a product
- Each supply chain process should add value to the products or services a company produces
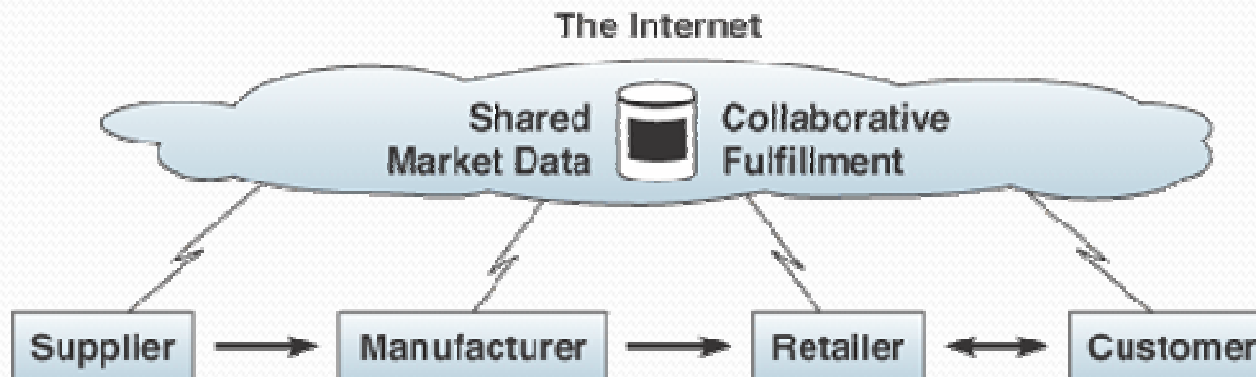 - Frequently called a value chain

Supply Chain Life Cycle

4.11 Electronic Data Interchange

- One of the earliest uses of information technology for supply chain management
- The electronic exchange of business transaction documents between supply chain trading partners
- The almost complete automation of an e-commerce supply chain process
- Many transactions occur over the Internet, using secure virtual private networks

Typical EDI Activities
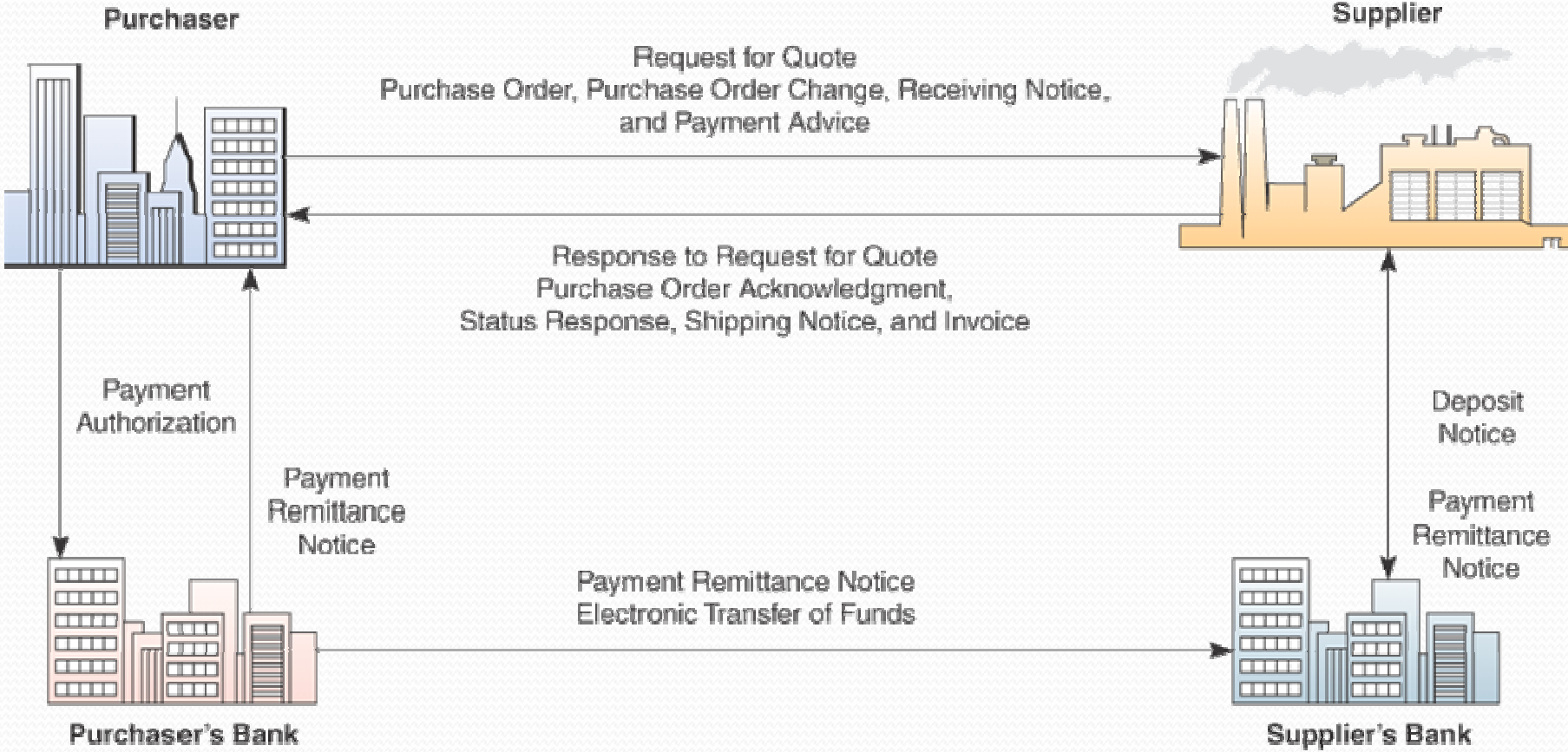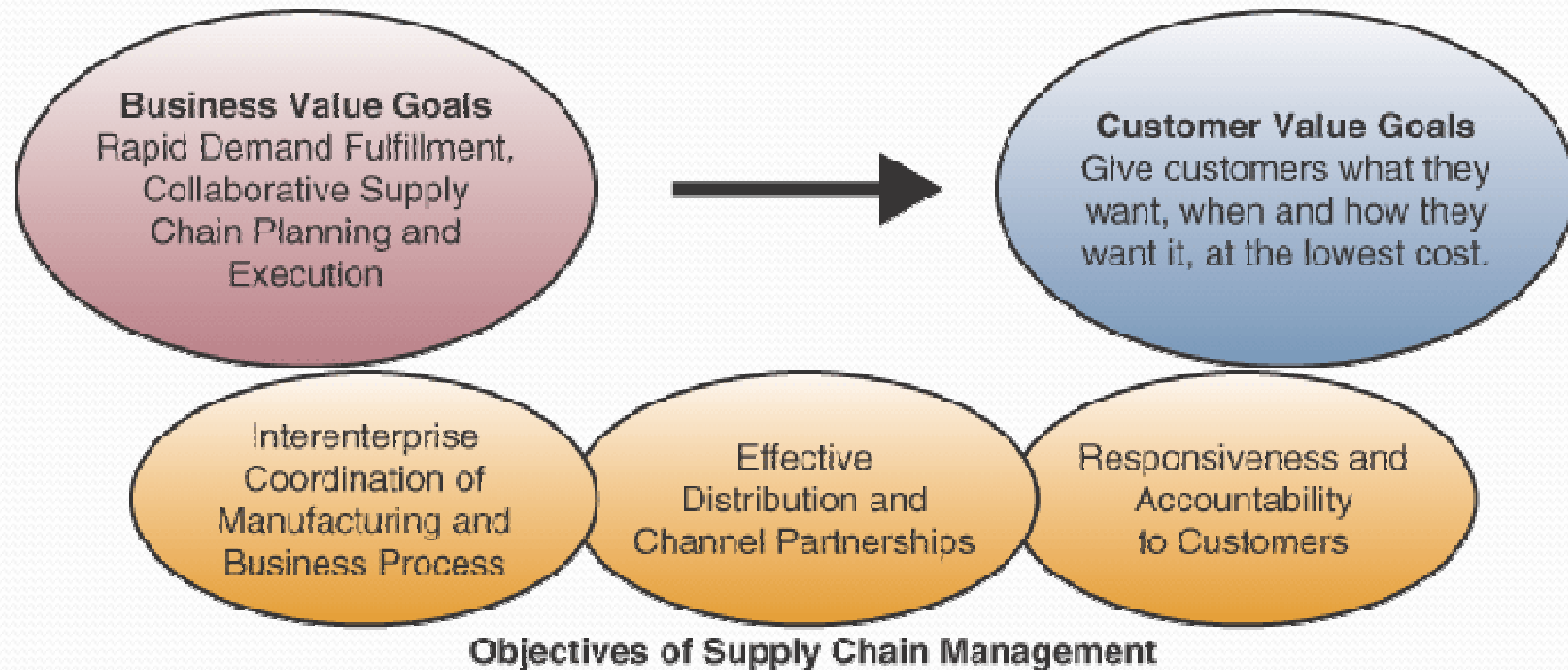
4.12 Roles and Activities of SCM in Business

SCM Objectives		SCM Outcomes
What? Establish objectives, policies, and operating footprint	**Strategic**	• Objectives • Supply policies (service levels) • Network design
How much? Deploy resources to match supply to demand	**Tactical**	• Demand forecast • Production, procurement, logistics plan • Inventory targets
When? Where? Schedule, monitor, control, and adjust production	**Operational**	• Work center scheduling • Order/inventory tracking
Do Build and transport	**Execution**	• Order cycle • Material movement

Source: Adapted from Keith Oliver, Anne Chung, and Nick Samanach, "Beyond Utopia: The Realist's Guide to Internet-Enabled Supply Chain Management," *Strategy and Business*, Second Quarter, 2001, p. 99.

Benefits and Challenges of SCM

- Key Benefits
  - Faster, more accurate order processing
  - Reductions in inventory levels
  - Quicker times to market
  - Lower transaction and materials costs
  - Strategic relationships with supplier

Goals and Objectives of SCM

Business Value Goals
Rapid Demand Fulfillment, Collaborative Supply Chain Planning and Execution

Customer Value Goals
Give customers what they want, when and how they want it, at the lowest cost.

Interenterprise Coordination of Manufacturing and Business Process

Effective Distribution and Channel Partnerships

Responsiveness and Accountability to Customers

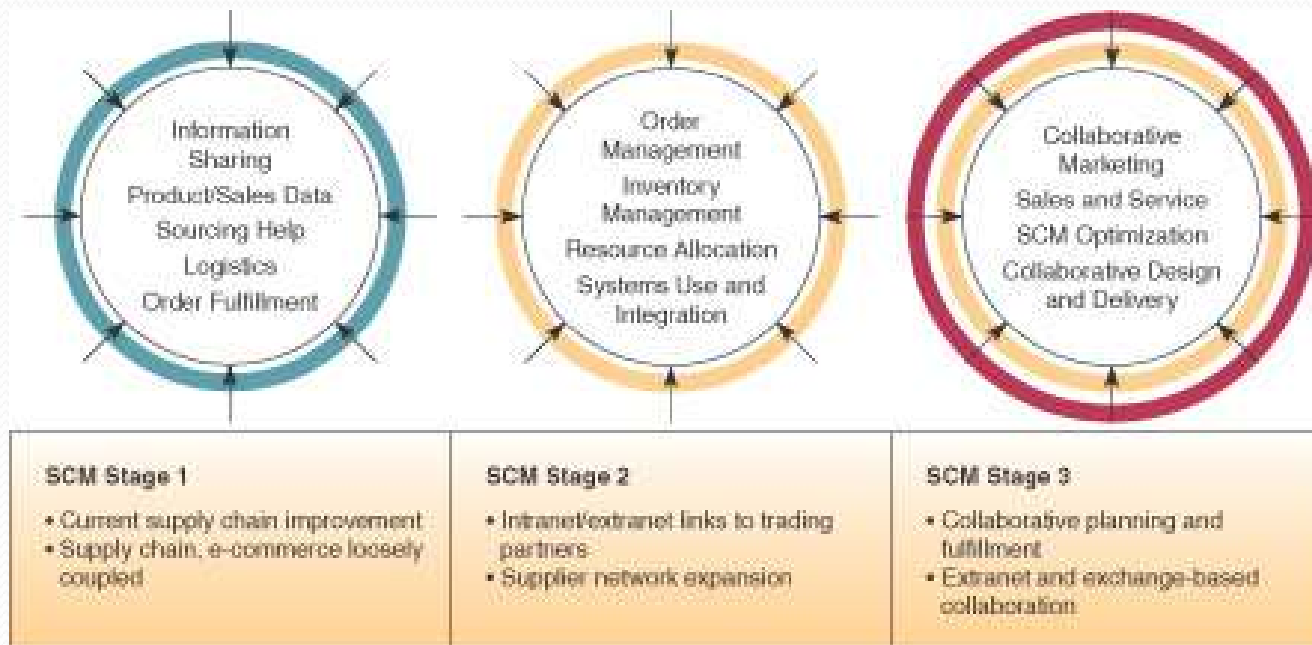**Objectives of Supply Chain Management**

Benefits and Challenges of SCM

- Key Challenges
  - Lack of demand planning knowledge, tools, and guidelines
  - Inaccurate data provided by other information systems
  - Lack of collaboration among marketing, production, and inventory management
  - SCM tools are immature, incomplete, and hard to implement

Trends in SCM

SCM Stage 1
- Current supply chain improvement
- Supply chain, e-commerce loosely coupled

SCM Stage 2
- Intranet/extranet links to trading partners
- Supplier network expansion

SCM Stage 3
- Collaborative planning and fulfillment
- Extranet and exchange-based collaboration

4.13 Customer Relationship Management

- A customer-centric focus
  - Customer relationships have become a company's most valued asset
  - Every company's strategy should be to find and retain the most profitable customers possible

What is CRM?

- Managing the full range of the customer relationship involves
  - Providing customer-facing employees with a single, complete view of every customer at every touch point and across all channels
  - Providing the customer with a single, complete view of the company and its extended channels
- CRM uses IT to create a cross-functional enterprise system that integrates and automates many of the customer-serving processes

Application Clusters in CRM
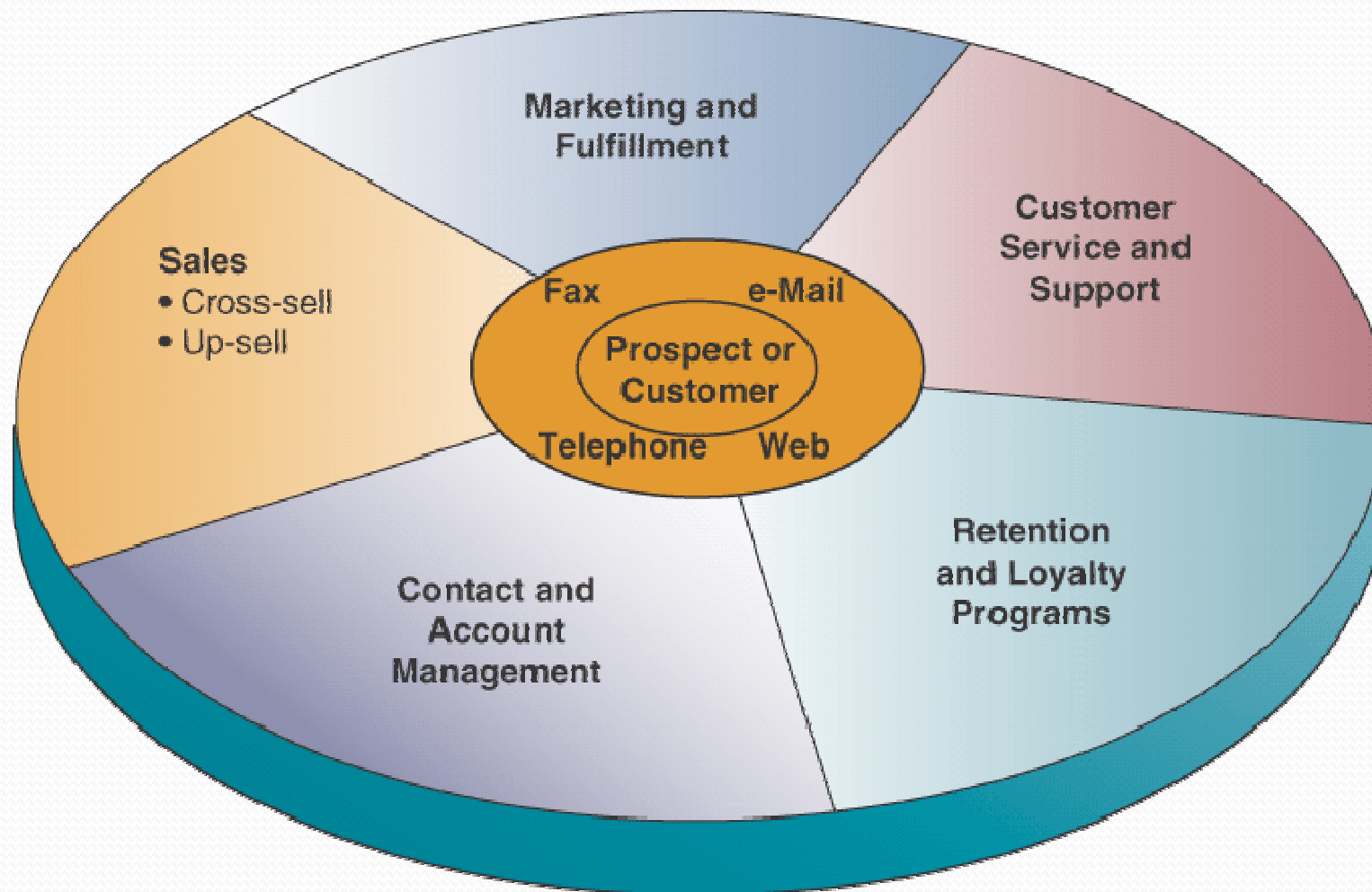
# The Three Phases of CRM
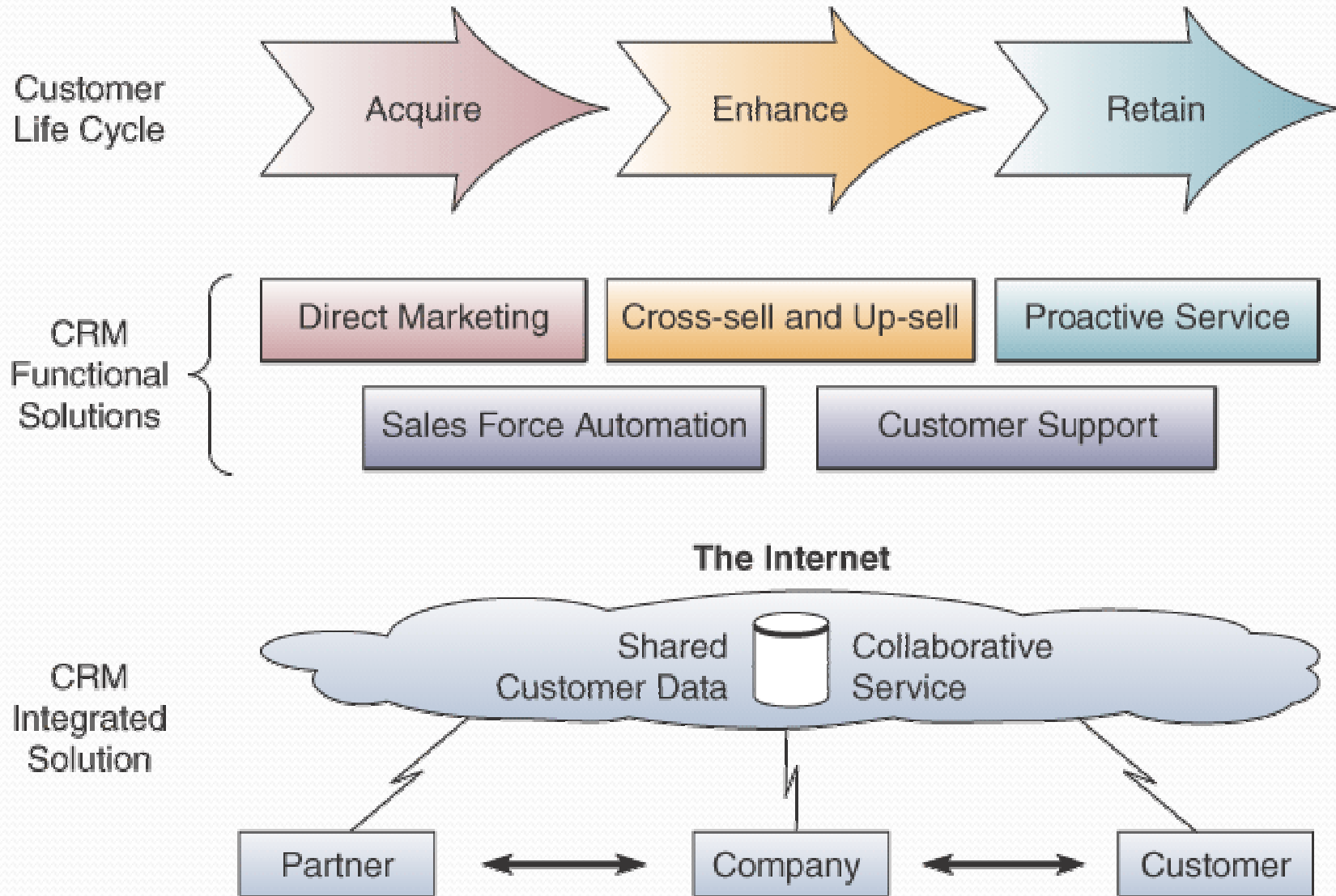
Benefits of CRM

- Benefits of CRM
  - Identify and target the best customers
  - Real-time customization and personalization of products and services
  - Track when and how a customer contacts the company
  - Provide a consistent customer experience
  - Provide superior service and support across all customer contact points

CRM Failures

- Business benefits of CRM are not guaranteed
  - 50 percent of CRM projects did not produce promised results
  - 20 percent damaged customer relationships
- Reasons for failure
  - Lack of understanding and preparation
  - Not solving business process problems first
  - No participation on part of business stakeholders involved

Reference :
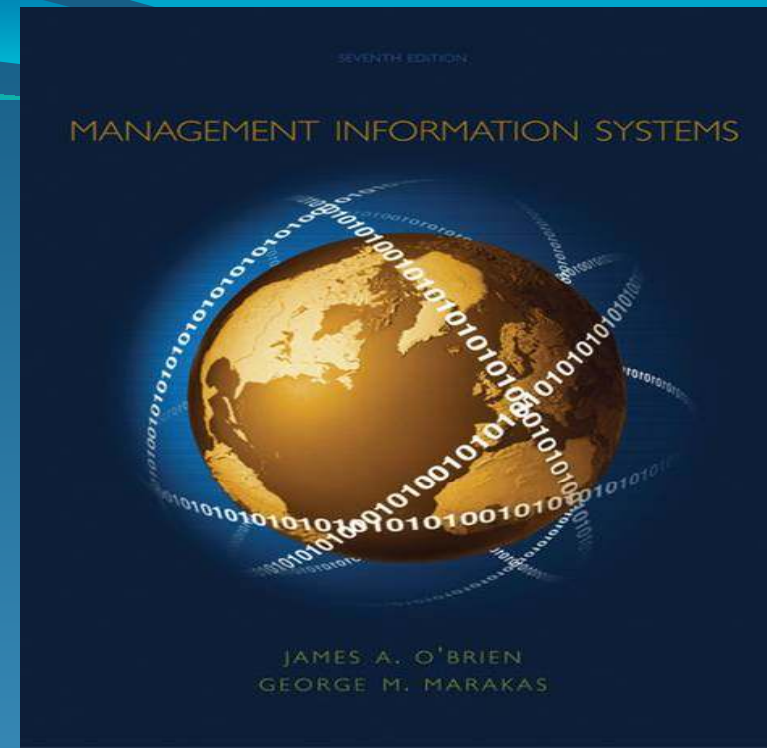
Chapter 8 Enterprise Business Systems

James A. O'Brien, and George Marakas. Management Information Systems with MISource 2007, 8th ed. Boston, MA: McGraw-Hill, Inc., 2007.

ISBN: 13 9780073323091

Internet Resources

- https://www.oracle.com/in/applications/erp/what-is-erp.html

- https://www.onupkeep.com/answers/maintenance-software/what-is-an-erp-system/

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