Management Information Systems
Eleventh Edition
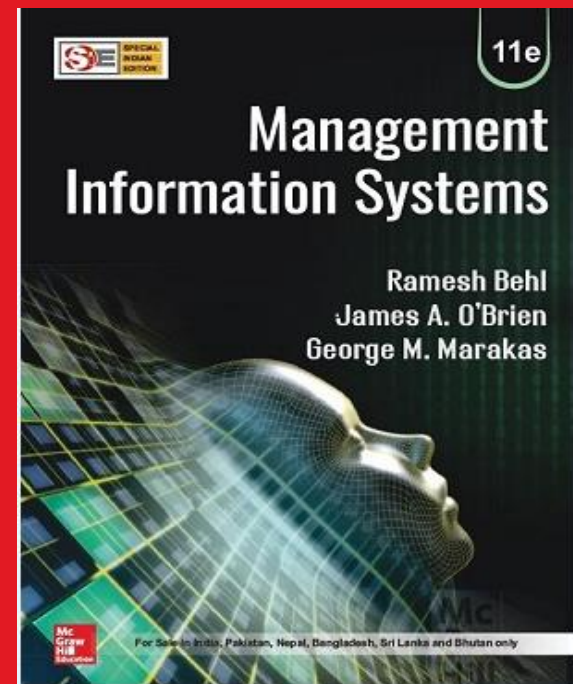
Chapter 4 : Enterprise Business Systems
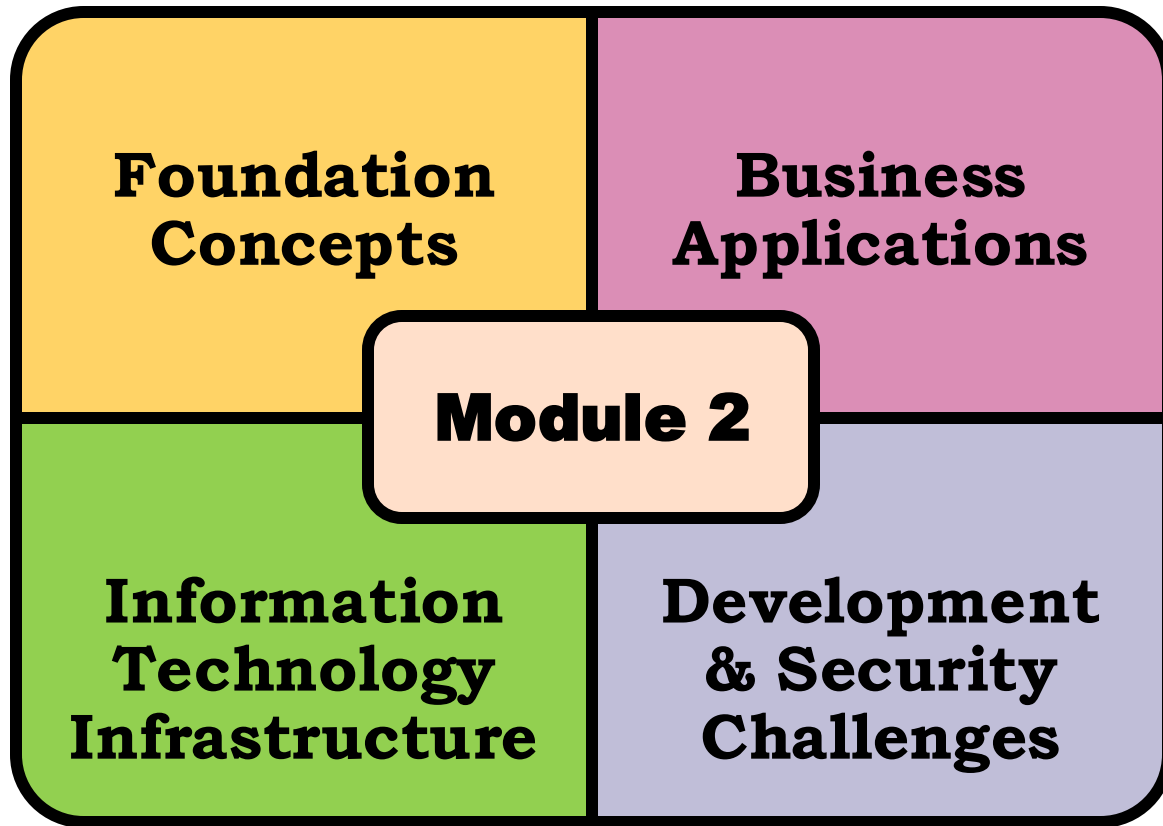
Learning Objectives

Understand the concept of a system and how it relates to information system.

Explain fundamental role and importance of information system in business.

What are the new trends in information systems?

Provide examples of several major types of information systems from business organizations in the real world.

Learning Objectives

Understand customer relationship management and its business processes.

Explain enterprise resource planning and its business processes.

Discuss supply chain management and its business processes.

Managing at the Enterprise Level

Lessons from Geese
(https://www.youtube.com/watch?v=y-ezwb-lyw8)

- Importance of team work
- Encourage passion and energy

Customer Relationship Management (CRM)

Customer Relationship Management (CRM)

* CRM is the process of getting and keeping customers and maximizing their profitability, behavior and satisfaction. CRM is to improve customer focus.

* Customer relationships – most valued asset

* Find and retain most profitable customers possible

So, CRM is used to gain customer focus

Objective of CRM

* **For the Company:** It helps everyone working in the company who deals with customers to have all the important information about each customer. This way, they can understand what the customers like, what they've bought before, and how they've interacted with the company in the past.

* **For the Customers:** It ensures that whenever customers interact with the company, whether it's buying something, asking a question, or reaching out for help, they get a consistent and smooth experience. It's like the company remembers who they are and what they prefer, making things easier and more enjoyable for them

Customer Management System

- CRM uses IT to integrate and automates many custumer-serving processes

- include family of software modules that provides the tools that enable a business and its employees to deliver fast, convinient and consistent service to its customers.

- Some leading vendor of CRM:
    - Oracle
    - PeopleSoft
    - SAP AG
    - Epiphany
    - Odoo

Application Components of CRM

- Contact and Account Management:

  - Store and manage customer information, including contact details, preferences, and interactions.

  - Track and organize customer data across different touchpoints.

- Sales:

  - Manage sales pipeline, track leads, and forecast sales opportunities.

  - Assist sales teams in prioritizing leads and closing deals.

- Marketing and Fulfillment:

  - Automate marketing campaigns and manage lead nurturing.

  - Facilitate order fulfillment processes for timely delivery of products/services.

- Customer Service and Support:

  - Handle customer inquiries, complaints, and support tickets.

  - Provide tools for case management, ticketing systems, and knowledge bases for effective issue resolution.

- Retention and Loyalty Programs:

  - Implement strategies to retain customers and manage loyalty programs.

  - Identify at-risk customers and create personalized retention campaigns for long-term relationships.

Application Clusters in CRM
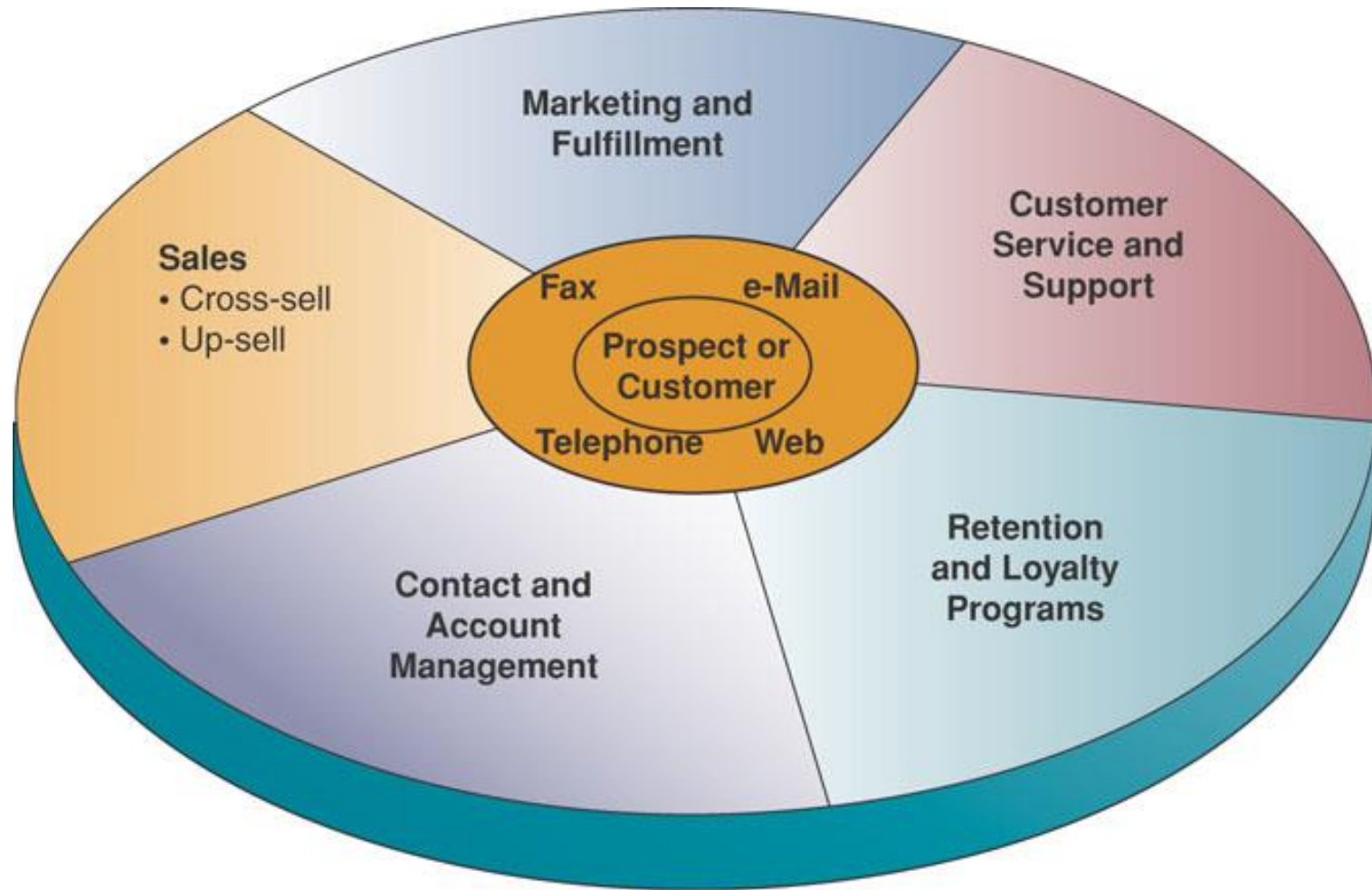
Contact and Account Management

- CRM Records Interactions:

    - Stores details of all past communications (conversations, emails, phone calls), meetings, purchases, inquiries, and support requests with customers.

    - Logs planned future interactions like scheduled meetings or follow-ups, ensuring proactive relationship management.

- Tracks Business Events:

    - Records significant business-related events like company size changes, acquisitions, mergers, product launches, upgrades, contract renewals, and other vital milestones affecting customers.

- Captures Life Cycle Events:

    - Includes essential personal and business milestones such as birthdays, anniversaries, business expansions, new locations, or any changes impacting the customer's relationship with the company.

➢ CRM systems collect information from various touchpoints: telephone calls, emails, websites, retail stores, kiosks, and in-person interactions.

➢ The collected data is centralized within a unified database in the CRM system, amalgamating customer account information, interaction records, purchase history, and preferences.

➢ This centralized database is accessible company-wide via Internet, Intranet, or network links.

Sales

A CRM system provides sales representative with software tools and company data sources they need to

- support and manage sales activities
- Optimize cross-selling and up-selling
- check account status and history

Sales:

Cross-sell

- **Definition:** Cross-selling is a sales technique that involves suggesting and promoting additional products or services that complement a customer's initial purchase.

- **Objective:** The goal of cross-selling is to increase revenue by encouraging customers to make supplementary purchases related to their primary purchase.

- **Example:** When buying a new smartphone, the salesperson recommends compatible accessories like a screen protector and phone case to enhance and protect the phone.

Sales:

Upsell

- **Definition**: Upselling is a sales technique that involves persuading customers to choose a more expensive or upgraded version of the product or service they are considering or have chosen.

- **Objective:** The aim of upselling is to increase the average transaction value by encouraging customers to opt for a higher-priced option that offers additional features or benefits.

- **Example**: While shopping for a compact sedan, the salesperson showcases a higher-end model with advanced features and highlights its superior performance and technology to convince the customer to upgrade.

Marketing and Fulfillment

CRM systems support marketing professionals in direct marketing campaigns by automating tasks and providing valuable insights by:

- **Qualifying leads**: CRM systems help identify and categorize leads based on specific criteria for targeted marketing.

- **Scheduling and tracking mailings:** The systems automate scheduling and tracking of marketing materials like emails or physical mailings.

- **Capturing and managing responses:** CRM systems store and organize customer responses, inquiries, and feedback for effective follow-up.

Marketing and Fulfillment

Contd....

- Analyzing campaign value: The systems offer analytics to evaluate campaign success, customer responses, and sales generated.

- Fulfilling responses and requests: CRM systems streamline the process of fulfilling customer inquiries and requests generated by the campaign.

Customer Service and Support

CRM system provides service reps with software tools and real-time access to the common customer databse shared by sales and marketing professionals by which

- customer service managers requests for service are created, assigned, and managed

- Call center software routes calls to agents

- Help desk software provides service data and suggestions for solving problems

Personalized support information

Customer Service and Support

Help Desk:

- **Centralized Ticket Management:** CRM provides a centralized platform for help desk agents to log, track, and prioritize customer inquiries or issues.

- **Customer Information Access:** CRM integration allows agents to access comprehensive customer information for personalized support.

- **Knowledge Base Integration:** CRM includes a knowledge base for quick access to articles, FAQs, and troubleshooting guides.

- **Communication Channels:** CRM integrates various communication channels for streamlined customer interactions.

- **Automation and Workflow**s: CRM automates routine tasks like ticket assignment and follow-up reminders, improving help desk efficiency.

Customer Service and Support

Call Center

- **Call Logging and Tracking:** CRM captures and records information about customer calls, ensuring accurate record-keeping and providing a history of interactions.

- **Caller Identification and Routing:** CRM integration identifies incoming callers and displays relevant customer information to agents, enabling personalized and efficient interactions.

- **Call Scripting and Guidance:** CRM offers access to call scripts and prompts, ensuring consistent and standardized call handling.

- **Customer Information Access:** CRM allows agents to view comprehensive customer information during calls, including profiles, previous interactions, and purchase history.

Retention and Loyalty Programs

Statistics

- Costs 6 times more to sell to a new customer

- Unhappy customer will tell 8-10 others

- Boosting customer retention by 5 percent can boost profits by 85 percent

- Odds of selling:

  - Existing customer - 50 percent

  - New - 15 percent

- 70 percent of customers will do business again if problems are quickly resolved.

Retention and Loyalty Programs

Primary objective - enhancing and optimizing customer retention and loyalty

- Identify, reward, and market to the most loyal and profitable customers

- Evaluate targeted marketing and relationship marketing programs

The Three Phases of CRM

CRM can be viewed as integrated stem of Web-enabled software tools and databases accomplishing a variety of customer focused business processes that supports 3 phases of the relationship between a business and its customers
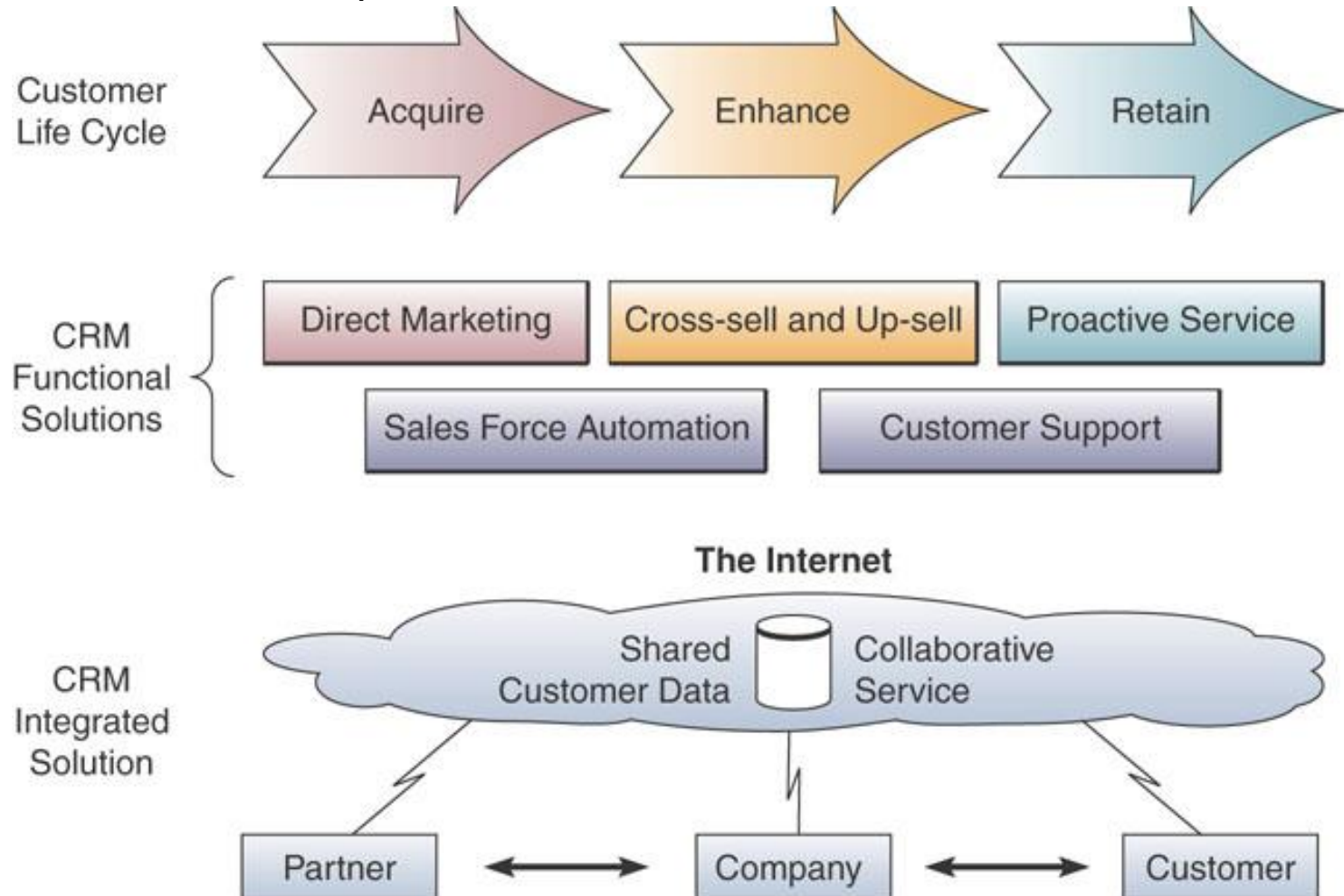
Benefits of CRM

- **Identifying and targeting the best customers:** CRM helps businesses analyze customer data to identify their most valuable customers and tailor marketing efforts accordingly, leading to improved conversions and customer satisfaction.

- **Real-time customization and personalization:** CRM enables businesses to gather real-time data on customer preferences and behaviors, allowing them to customize products and services for a more personalized and relevant customer experience.

Benefits of CRM

- **Tracking customer interactions:** CRM systems track and log customer interactions, providing insights into preferred communication channels and specific needs, facilitating prompt and appropriate responses.

- **Consistent customer experience:** CRM centralizes customer information, ensuring consistent experiences across departments, leading to enhanced brand consistency and customer trust.

- **Superior service and support:** CRM equips support teams with comprehensive customer data, enabling efficient issue resolution and proactive support measures, resulting in higher customer satisfaction.

CRM Failures

No participation on the part of business stakeholders involved: Lack of involvement and engagement from key business stakeholders, such as sales, marketing, and customer service teams, can hinder the CRM implementation and result in a system that does not meet their specific requirements.**Lack of senior management sponsorship:** Without strong support from senior management, CRM initiatives may lack the necessary resources, funding, and organizational buy-in, leading to limited success.

- **Improper change management:** Insufficient planning and execution of change management activities, such as communication, training, and addressing resistance, can hinder CRM adoption and undermine its effectiveness.

- **Poor CRM strategy:** Inadequate planning and formulation of a comprehensive CRM strategy can result in unclear goals, improper alignment with business objectives, and a lack of focus on customer-centricity.

- **Scope creep:** Allowing the scope of the CRM project to expand

CRM Failures(contd..)

- **Elongated projects that take on too much, too fast**: Trying to implement a CRM system with an aggressive timeline without proper consideration of resources, capabilities, and readiness can lead to rushed implementations and suboptimal outcomes.

- **Lack of or poor integration between CRM and core business systems:** If the CRM system is not effectively integrated with existing business systems, it can result in data silos, duplicated efforts, and a fragmented view of customer information.

- **Lack of end-user incentives leading to poor user adoption rates:** Insufficient motivation and incentives for end-users to embrace and utilize the CRM system can result in low adoption rates and limited engagement with the platform.

CRM Failures(contd..)

- **Lack of understanding and preparation:** Insufficient understanding of the organization's specific needs, customer processes, and limitations can result in inadequate customization and configuration of the CRM system.

- **Not solving business process problems first:** Implementing CRM without addressing underlying business process issues or inefficiencies can lead to the CRM system exacerbating existing problems rather than providing effective solutions.

- **No participation on the part of business stakeholders involved**: Lack of involvement and engagement from key business stakeholders, such as sales, marketing, and customer service teams, can hinder the CRM implementation and result in a system that does not meet their specific requirements.

Trends in CRM

Types of CRM	Business Value
Operational CRM	• Supports customer interaction with greater convenience through a variety of channels, including phone, fax, e-mail, chat, and mobile devices • Synchronizes customer interactions consistently across all channels • Makes your company easier to do business with
Analytical CRM	• Extracts in-depth customer history, preferences, and profitability information from your data warehouse and other databases • Allows you to analyze, predict, and derive customer value and behavior and forecast demand • Lets you approach your customers with relevant information and offers that are tailored to their needs
Collaborative CRM	• Enables easy collaboration with customers, suppliers, and partners • Improves efficiency and integration throughout the supply chain • Allows greater responsiveness to customer needs through sourcing of products and services outside of your enterprise
Portal-Based CRM	• Provides all users with the tools and information that fit their individual roles and preferences • Empowers all employees to respond to customer demands more quickly and become truly customer-focused • Provides the capability to instantly access, link, and use all internal and external customer information

Trends in CRM

Personalized CRM using AI: With AI-based CRM solutions, businesses can tap hidden patterns automatically to suit the requirements. This will help in implementing better prediction models and understanding the customer need better to serve them better.

Social CRM: Social CRM uses the customer interaction data available on social media to understand the customer better. Social CRM helps in creating virtual communities to engage customers in a more meaningful way.

IOT Integrated CRM: Billions of small intelligent devices are going to be connected with each other and users of these devices are going to share lot of data through these devices.

Crowdsourcing: It is the practice of engaging a group of users (crowd) for a common goal. With the increased participation of customers into product development, businesses have started adopting crowdsourcing for business improvement.

What is ERP?

Enterprise Resource Planning (ERP) is an integrated cross-functional information system.

Cross-functional enterprise system

- ERP consists of a suite of software mod[ules] share a common database.

- Supports basic internal business proces[ses]

  - Manufacturing

  - Logistics

  - Distribution

  - Accounting

  - Finance

  - Human resources

- Facilitates information flows

  - Business

  - Supplier

  - Customer

RWC 2: ERPs Get a Second Lease on Life

Customization of Old ERPs:

Organizations often customize their ERP systems to meet specific needs.

Challenges with Upgrades:

Upgrading old ERPs can be complex, requiring extensive testing and modification.

Advancements in New ERPs:

Newer ERP versions offer enhanced features and capabilities, driving consideration for upgrades.

Sticking with Old Systems:

Some companies choose to stay with existing ERP systems if they still meet operational needs.
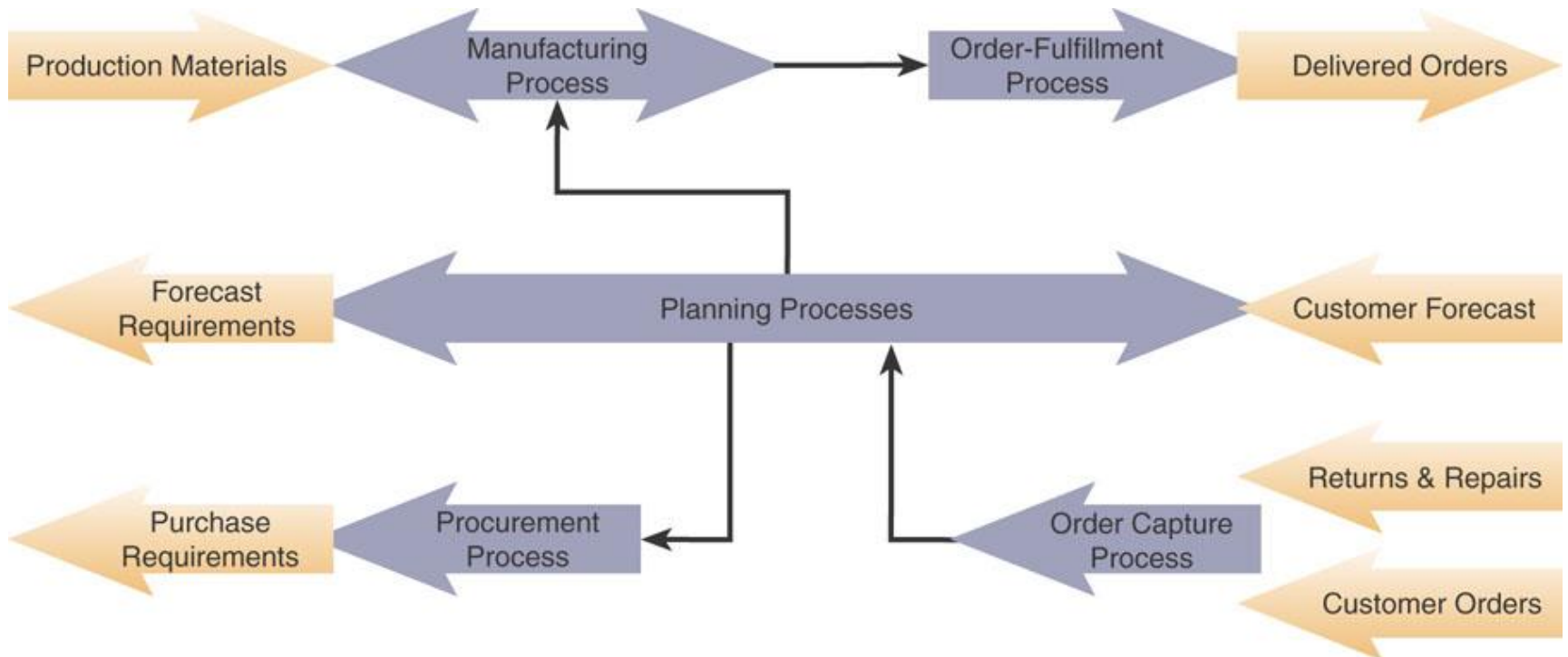
New ERPs without Extensive Customization:

Some organizations opt for new ERP systems but avoid extensive customization for easier future upgrades.

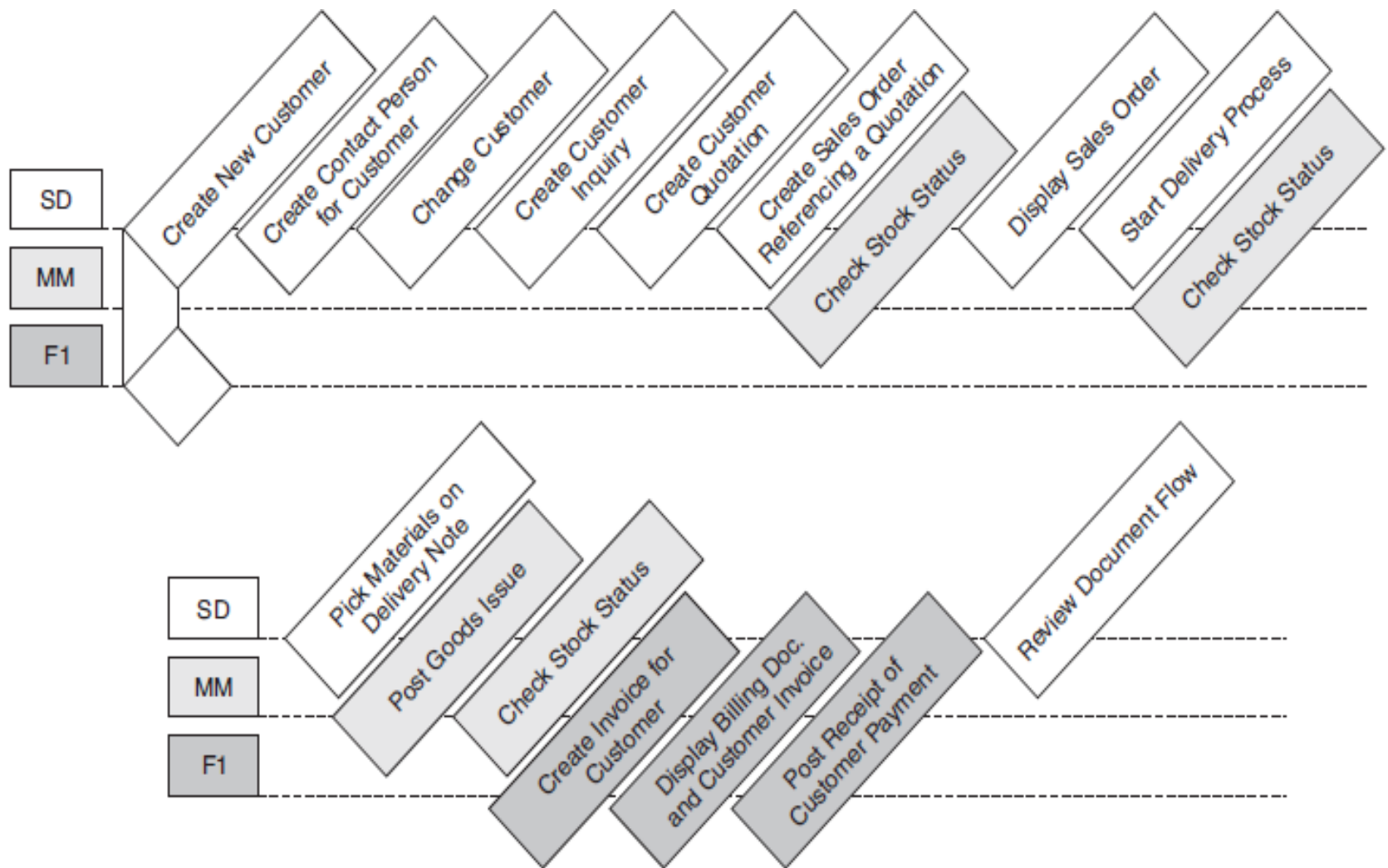# ERP Application Components

ERP Process and Information Flows

FIGURE 4.10 Integrated Order-to-Cash Process where Sales & Distribution (SD), Materials Management (MM) and Financial Accounting (FI) Modules are integrated.
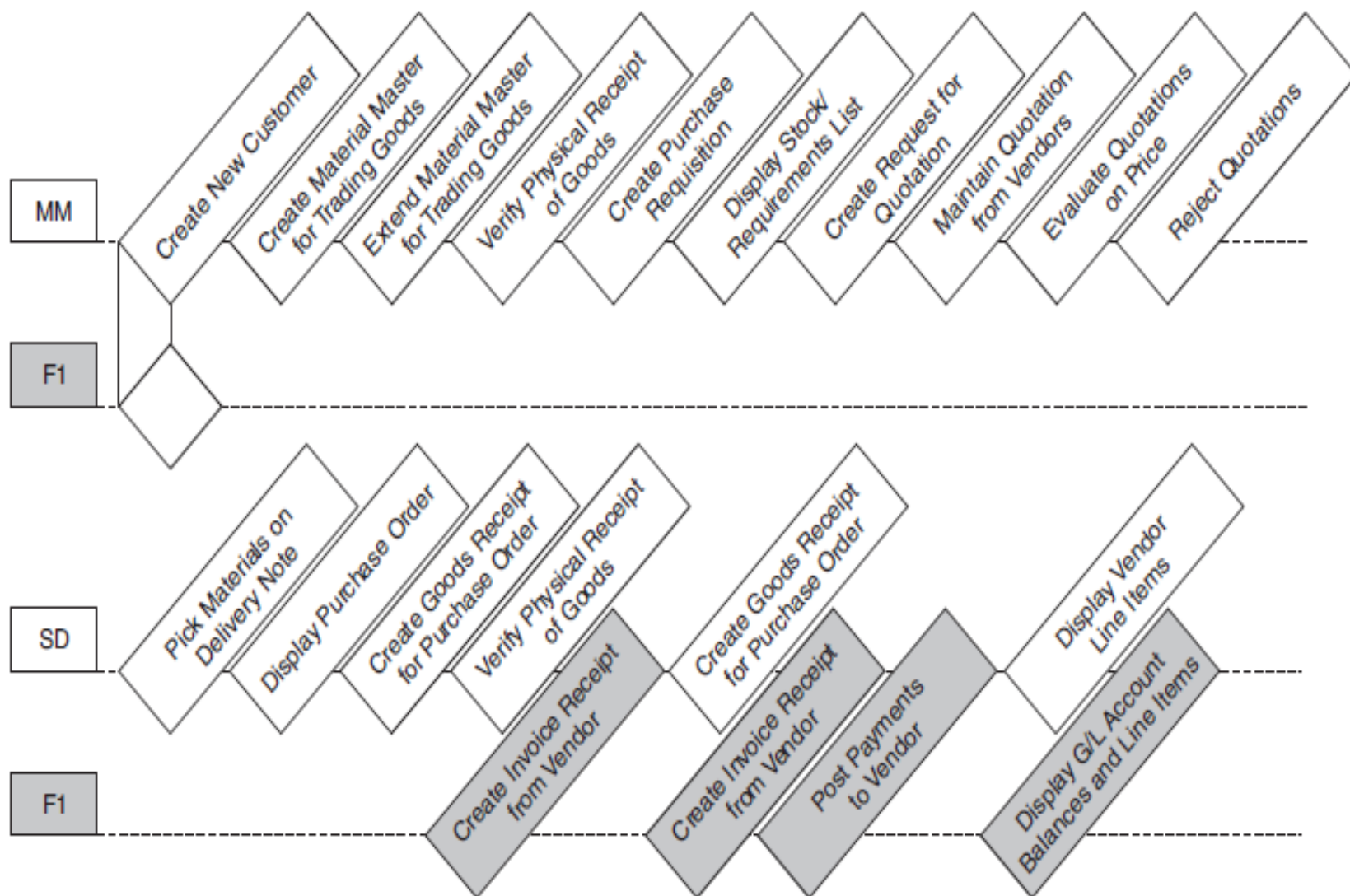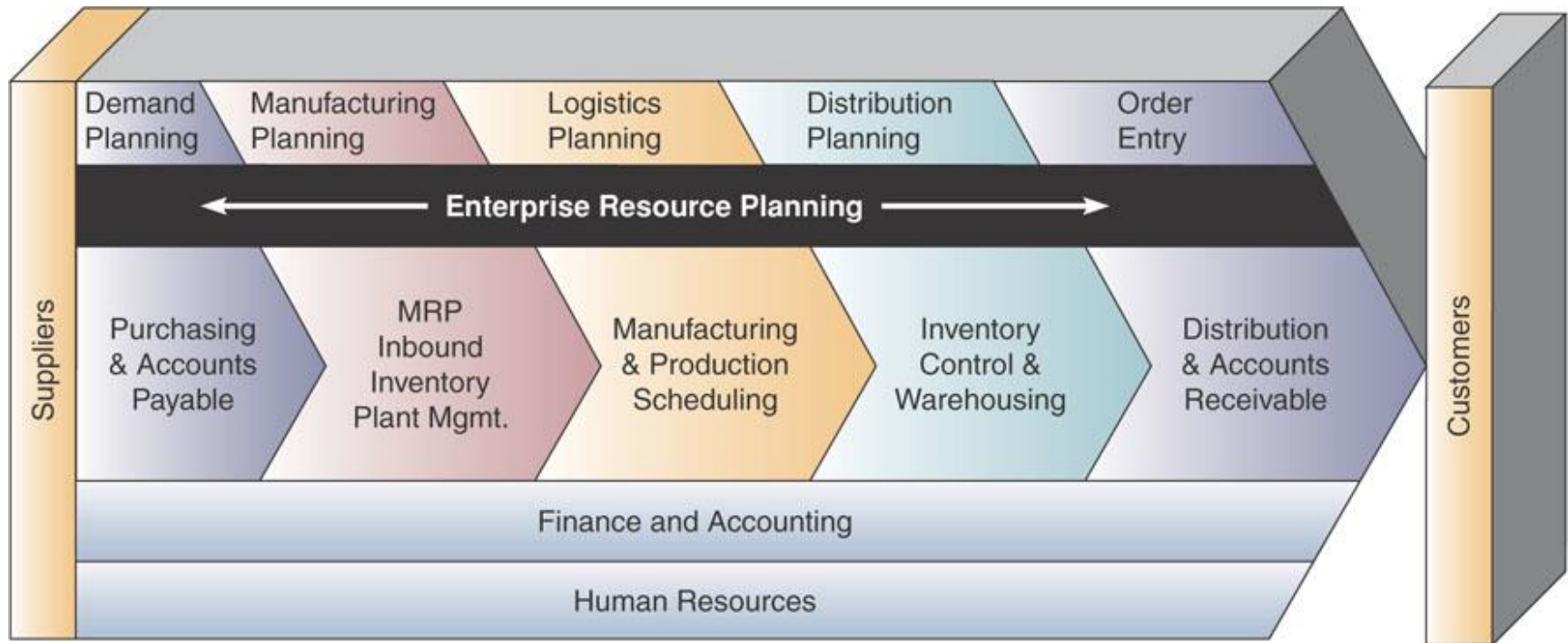
FIGURE 4.11 Integrated Material Purchase Process where Material Management (MM) and Financial Accounting (FI) modules are integrated.

MM
F1

Create New Customer
Create Material Master for Trading Goods
Extend Material Master for Trading Goods
Verify Physical Receipt of Goods
Create Purchase Requisition
Display Stock/Requirements List
Create Request for Quotation
Maintain Quotation from Vendors
Evaluate Quotations on Price
Reject Quotations

SD
F1

Pick Materials on Delivery Note
Display Purchase Order
Create Goods Receipt for Purchase Order
Verify Physical Receipt of Goods
Create Invoice Receipt from Vendor
Create Goods Receipt for Purchase Order
Create Invoice Receipt from Vendor
Post Payments to Vendor
Display Vendor Line Items
Display G/L Account Balances and Line Items

Business processes and functions of ERP

Needed to coordinate globally, act locally

- utilizes ERP for global coordination and standardization while allowing flexibility for local adaptation in diverse markets.

Order-to-delivery time cut in half

- Order acquisition and process

  - 7 days cut to 4 hours

- Distribution

  - 4 days cut to 14 hours

Increased on-time deliveries

Domestic inventories dropped by 1/3

Benefits of ERP

1. Quality and Efficiency.

2. Decreased Costs.

3. Decision Support.

4. Enterprise Agility.

5. Centralized Business Data.

6. Best Practice.

7. Cost Saving.

8. Scalability & Flexibility.

9. Security.

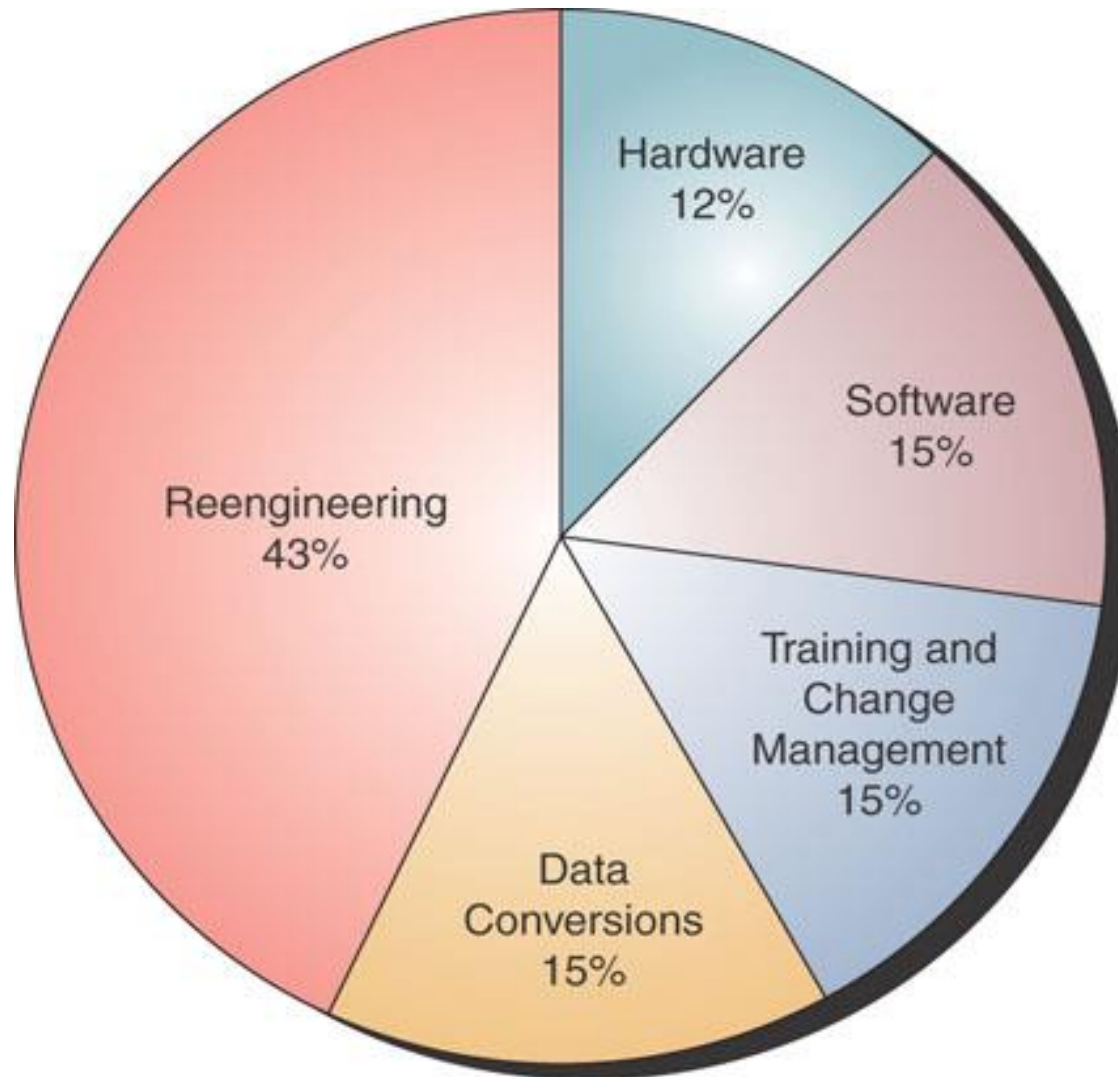# Challenges of ERP

Costly Solution.

No Customization.

Ownership.

Reengineering.

Change Management.

Implementation Partners.

Costs of Implementing a New ERP

Costs of Implementing a New ERP pie chart:
- Reengineering 43%
- Hardware 12%
- Software 15%
- Training and Change Management 15%
- Data Conversions 15%

Causes of ERP Failures

Most common causes of ERP failure

- No clear objectives

- Lack of proper user training

- Change management

- Data accuracy norms

- Lack of project management skills

- Selection of implementation partner

- Commitment of top management

- Selection of project team

Trends in ERP (Replace this Figure 4.14)
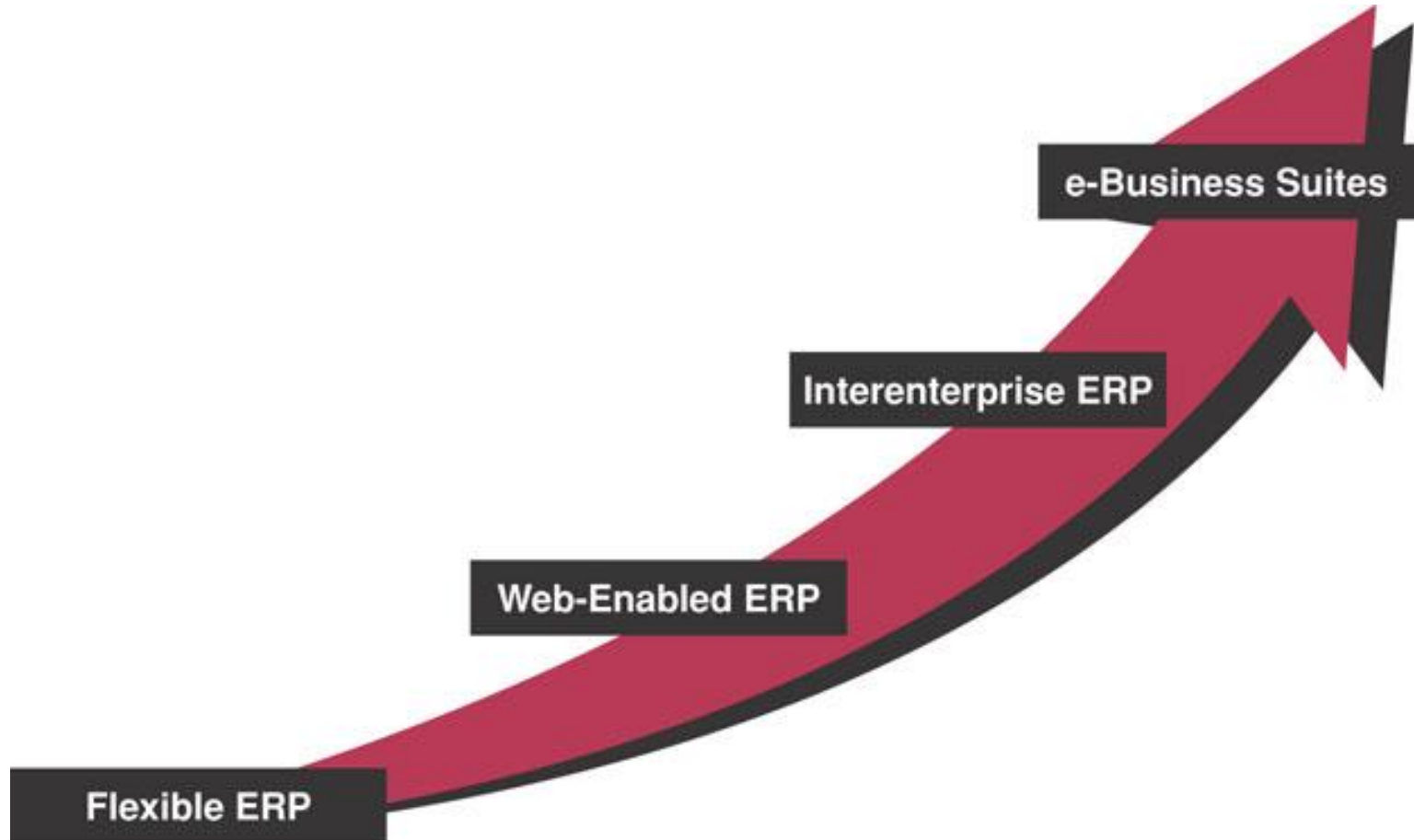
Supply Chain Management (SCM)

Supply Chain Management (SCM) helps a company

- Get the right products

- To the right place

- At the right time

- In the proper quantity

- At an acceptable cost

Goal of SCM is to efficiently…

- Forecast demand
  How much to build

- Control inventory
  How much to have on hand

- Enhance relationships with customers, suppliers, distributors, and others
- Receive feedback on the status of every link in the supply chain

RWC 3: Supply Chains Adapt to Tough Times

**Old push model uses best-guess forecasts**

- Traditional supply chain model.

- Based on forecasts derived from best guesses of future demand

- Primary emphasis on pushing products into the market based on these forecasts.

- Businesses in the push model maintain high inventory levels for aiming to meet forecasted demand without delays.

- During a downturn or reduced demand, challenges arise.

- Supply chain is structured around initial forecasts, causing difficulties in adapting.

Key to survival in down-turn

- Shifting to a pull system is crucial for survival during downturns.

- Pull System Overview: Production and distribution are driven by actual customer demand, not forecasts.Pull system

- Involves minimizing reliance on high inventory levels.

- Emphasis on fulfilling actual customer demand in real-time

- Although inventory may decrease, working capital might increase.

- Investments in systems for a more responsive supply chain contribute to this shift.
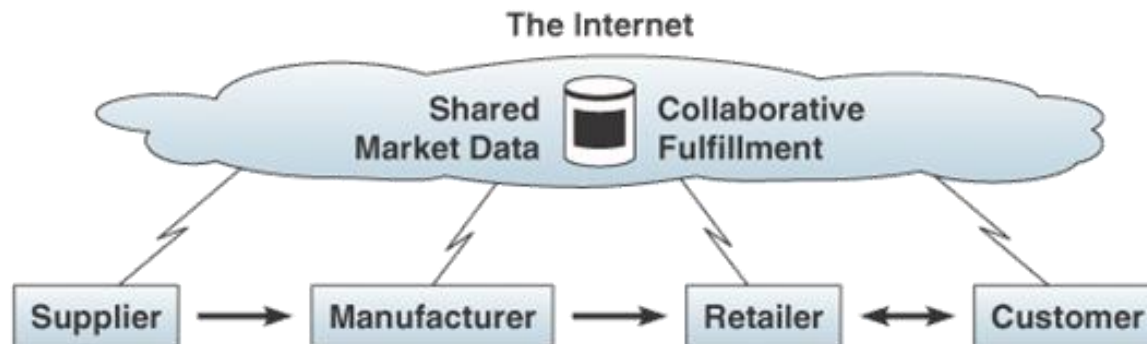
Supply Chain Life Cycle
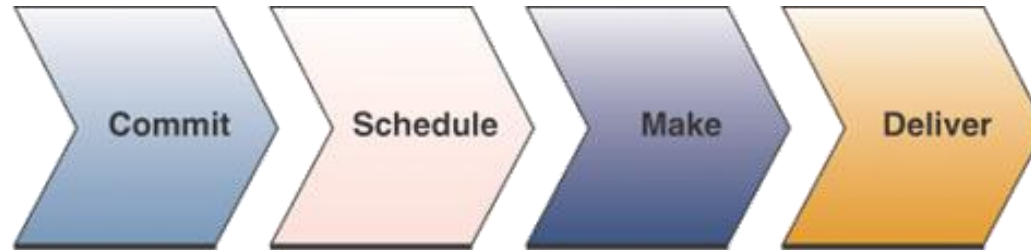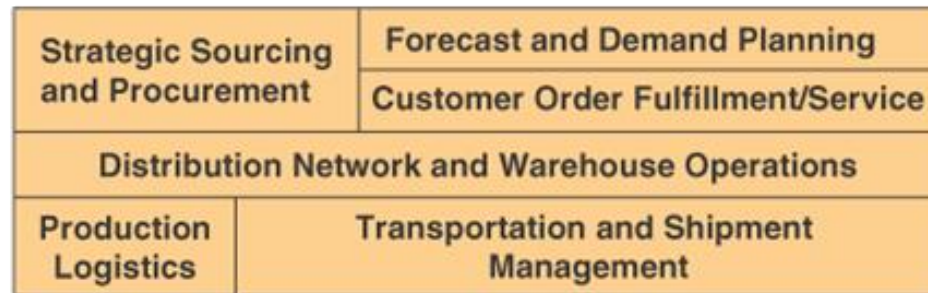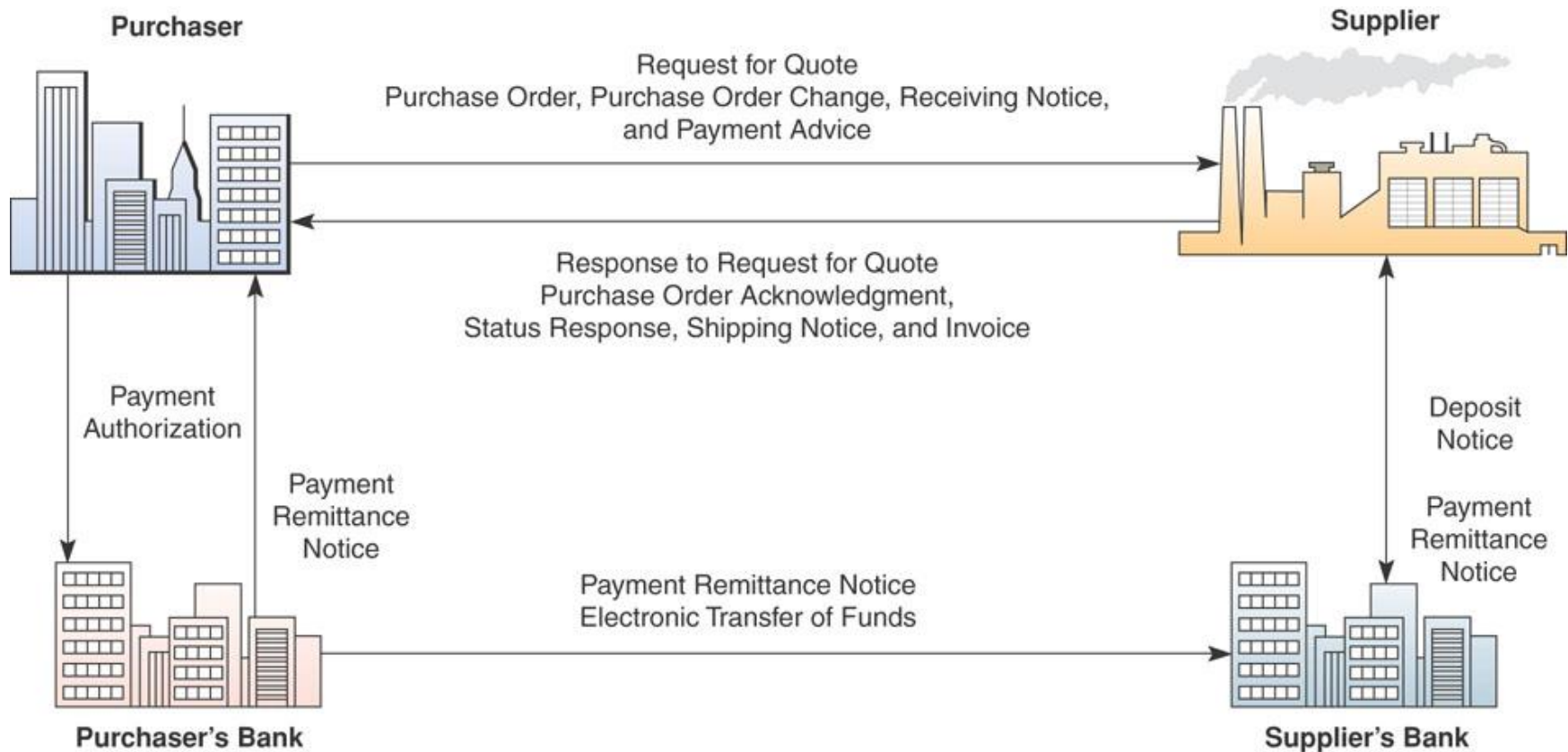
EDI Activities

Electronic Data Interchange (EDI) refers to the electronic exchange of structured business documents between trading partners in a standardized format. EDI activities involve the transmission, processing, and management of these electronic documents.

Purchaser

Supplier

Request for Quote
Purchase Order, Purchase Order Change, Receiving Notice, and Payment Advice

Response to Request for Quote
Purchase Order Acknowledgment, Status Response, Shipping Notice, and Invoice

Payment Authorization

Payment Remittance Notice

Deposit Notice

Payment Remittance Notice

Payment Remittance Notice
Electronic Transfer of Funds

Purchaser's Bank

Supplier's Bank

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

Functions and Benefits of SCM

SCM Functions	SCM Outcomes
Planning	
Supply chain design	• Optimize network of suppliers, plants, and distribution centers
Collaborative demand and supply planning	• Develop an accurate forecast of customer demand by sharing demand and supply forecasts instantaneously across multiple tiers • Internet-enable collaborative scenarios, such as collaborative planning, forecasting, and replenishment (CPFR), and vendor-managed inventory
Execution	
Materials management	• Share accurate inventory and procurement order information • Ensure materials required for production are available in the right place at the right time • Reduce raw material spending, procurement costs, safety stocks, and raw material and finished goods inventory
Collaborative manufacturing	• Optimize plans and schedules while considering resource, material, and dependency constraints
Collaborative fulfillment	• Commit to delivery dates in real time • Fulfill orders from all channels on time with order management, transportation planning, and vehicle scheduling • Support the entire logistics process, including picking, packing, shipping, and delivery in foreign countries
Supply chain event management	• Monitor every stage of the supply chain process, from price quotation to the moment the customer receives the product, and receive alerts when problems arise
Supply chain performance management	• Report key measurements in the supply chain, such as filling rates, order cycle times, and capacity utilization

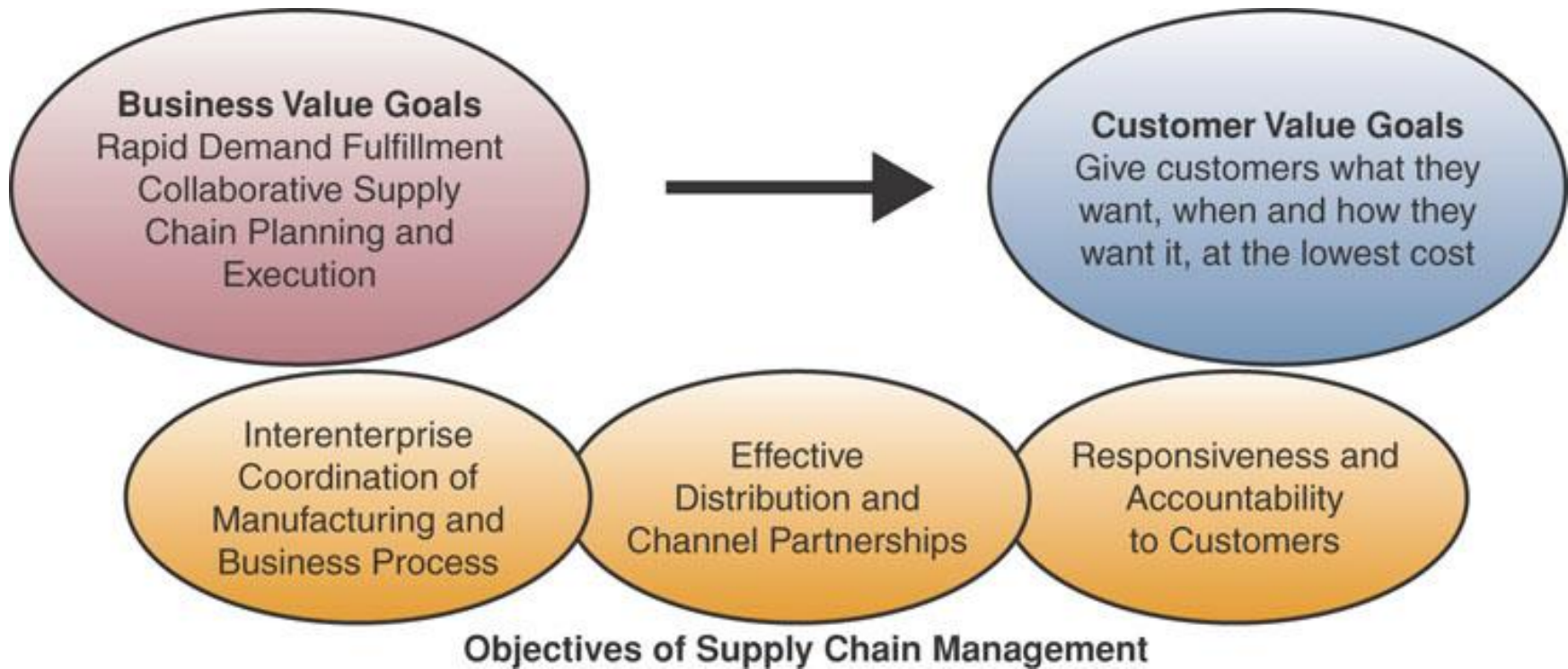**Benefits of SCM**

Key Benefits

- Faster, more accurate order processing

- Reductions in inventory levels

- Quicker times to market

- Lower transaction and materials costs
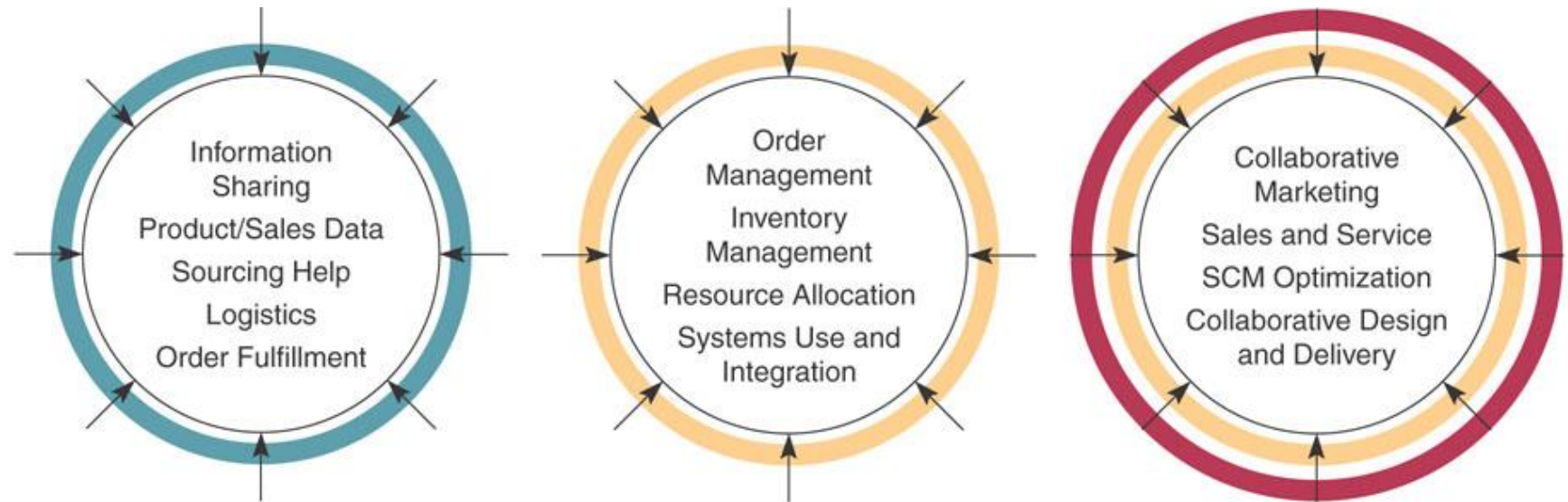
- Strategic relationships with supplier

Key Challenges

- Lack of knowledge, tools, and guidelines

- Inaccurate data

- Lack of collaboration

- SCM tools are immature, incomplete, and hard to implement

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

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

CVS, McKesson

- CVS leading drug retail chain

- McKesson largest pharmaceutical distributor

- Point-of-sale data

- Agreed on service levels

- Reduced replenishment time

Modern Plastics, SupplySolution, Inc.

- Upraded reactive system to proactive system

RWC 4: The Secret to CRM is in the Data

CRM enables increased sales revenue

CRM provides more and better services to customers and prospects.

CRM – better earlier than later.

"Without accurate, complete, and comprehensive data, any CRM effort will be less than optimal."

RWC 5: CRM for Building Closer Relationship with Dealers

Examine role of IT in transforming Automobile industry

One automobile for every 11 people on earth

The challenge was to enable information access for a country-wide business

Solution is required for:

- Centralized customer database and standardized business process.

- Increase in sales and profitability by easy management of processes.

- Collaboration between the manufacturers, dealers and salespeople.

- A strong feedback mechanism and interface for communicating with customers.

- Better feedback mechanism on product quality and measuring effectiveness of promotion campaigns and other programs.

RWC 6: Managing Supply Chain at Flipkart

The mission of the organization is to provide a memorable online shopping experience to its customers.

Some of the unique selling propositions that they offered to their customers are 30-day replacement, Cash on Delivery, free shipping, EMI options mainly for electronics and on-time delivery.

Flipkart uses lots of analytical tools to predict its sales and based on that it manages its inventory.