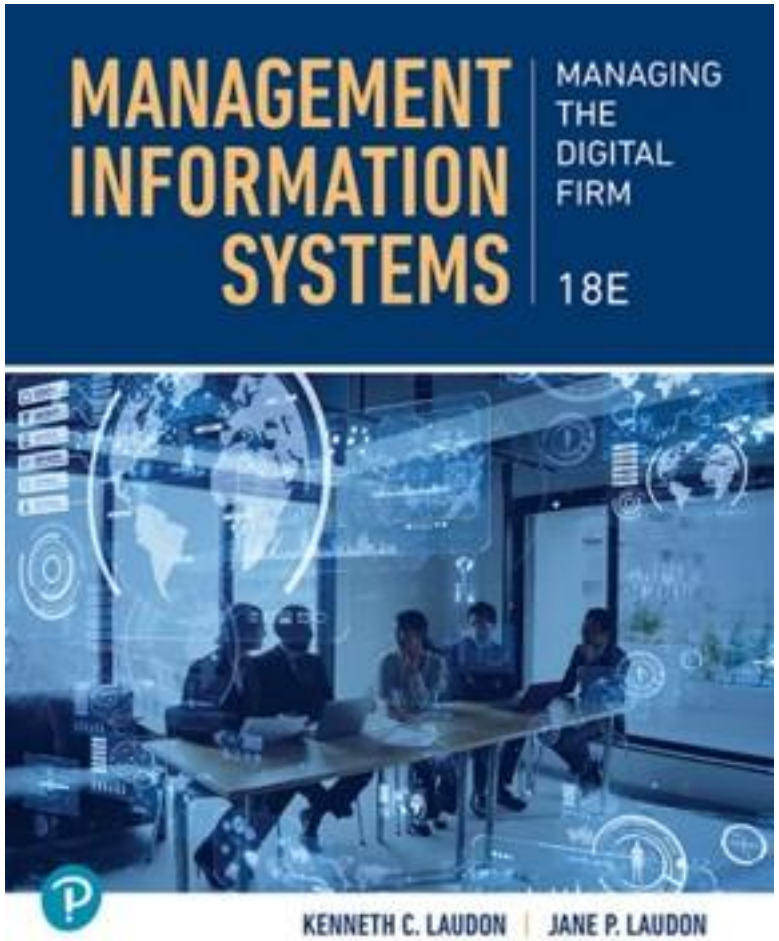
Management Information Systems: Managing the Digital Firm

Eighteenth Edition



Chapter 9

Achieving Operational Excellence and Customer Intimacy: Enterprise

Learning Objectives (1 of 2)

9.1 Understand ERP systems.

9.2 Understand SCM systems.

9.3 Describe global supply chain management challenges.

9.4 Understand CRM systems.

Learning Objectives (2 of 2)

9.5 Discuss enterprise application challenges.

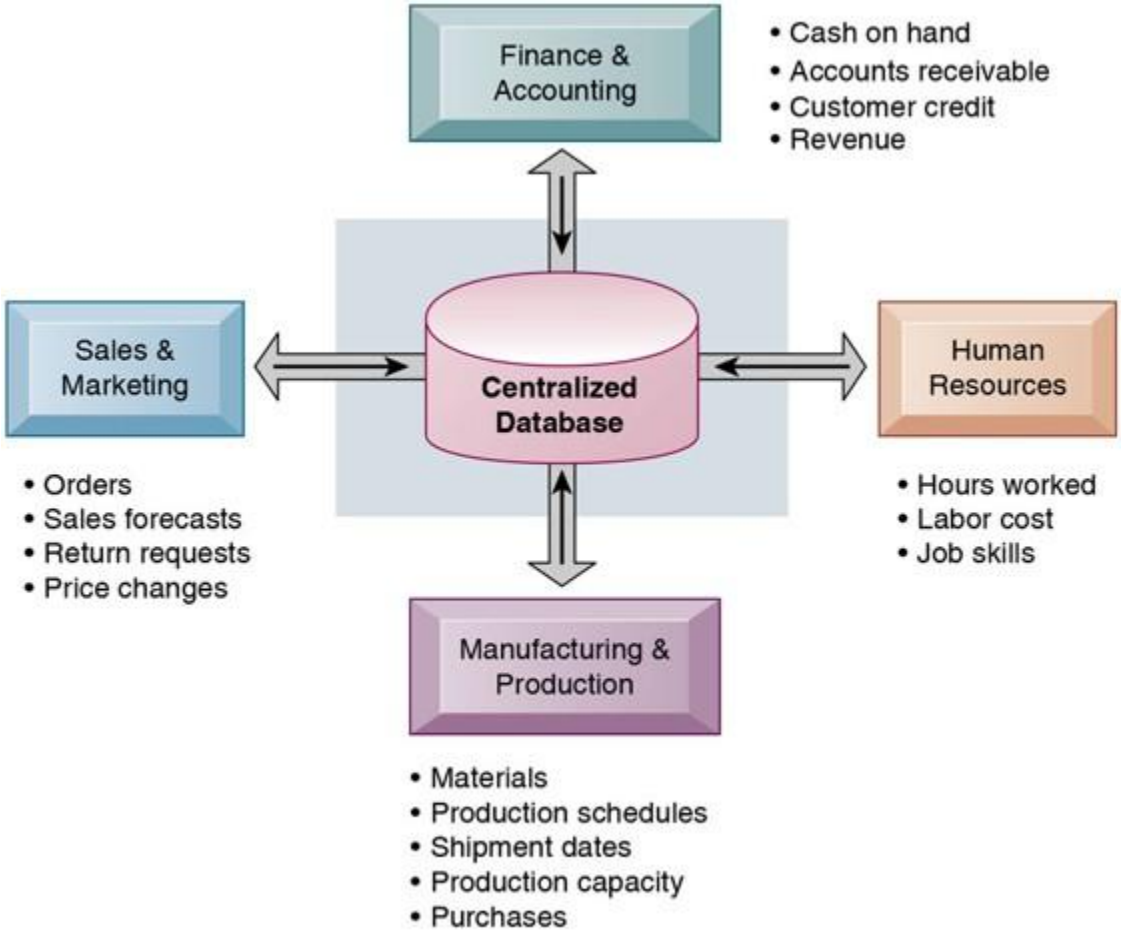
9.6 Describe how enterprise applications are using AI.

9.7 Understand how the information in this chapter can help your career.

Understand ERP Systems (1 of 2)

- What is an ERP System?
  - Also known as enterprise resource planning (ERP) systems
  - Based on a suite of integrated software modules and a common central database
  - Collects data from many divisions of firm for use in nearly all of firm's internal business activities
  - Information entered in one process is immediately available for other processes

Figure 9.1 How ERP Systems Work



Understand ERP Systems (2 of 2)

- ERP software
  - Built around thousands of predefined business processes that reflect best practices
    - Finance and accounting
    - Human resources
    - Manufacturing and production
    - Sales and marketing
  - To implement, firms:
    - Select functions of system they wish to use
    - Map business processes to software processes
      - Use software's configuration tables for customizing

Business Value of ERP Systems

- Increased operational efficiency
- Provide firm-wide information to support decision making
- Enable rapid responses to customer requests for information or products
- Include analytical tools to evaluate overall organizational performance and improve decision-making

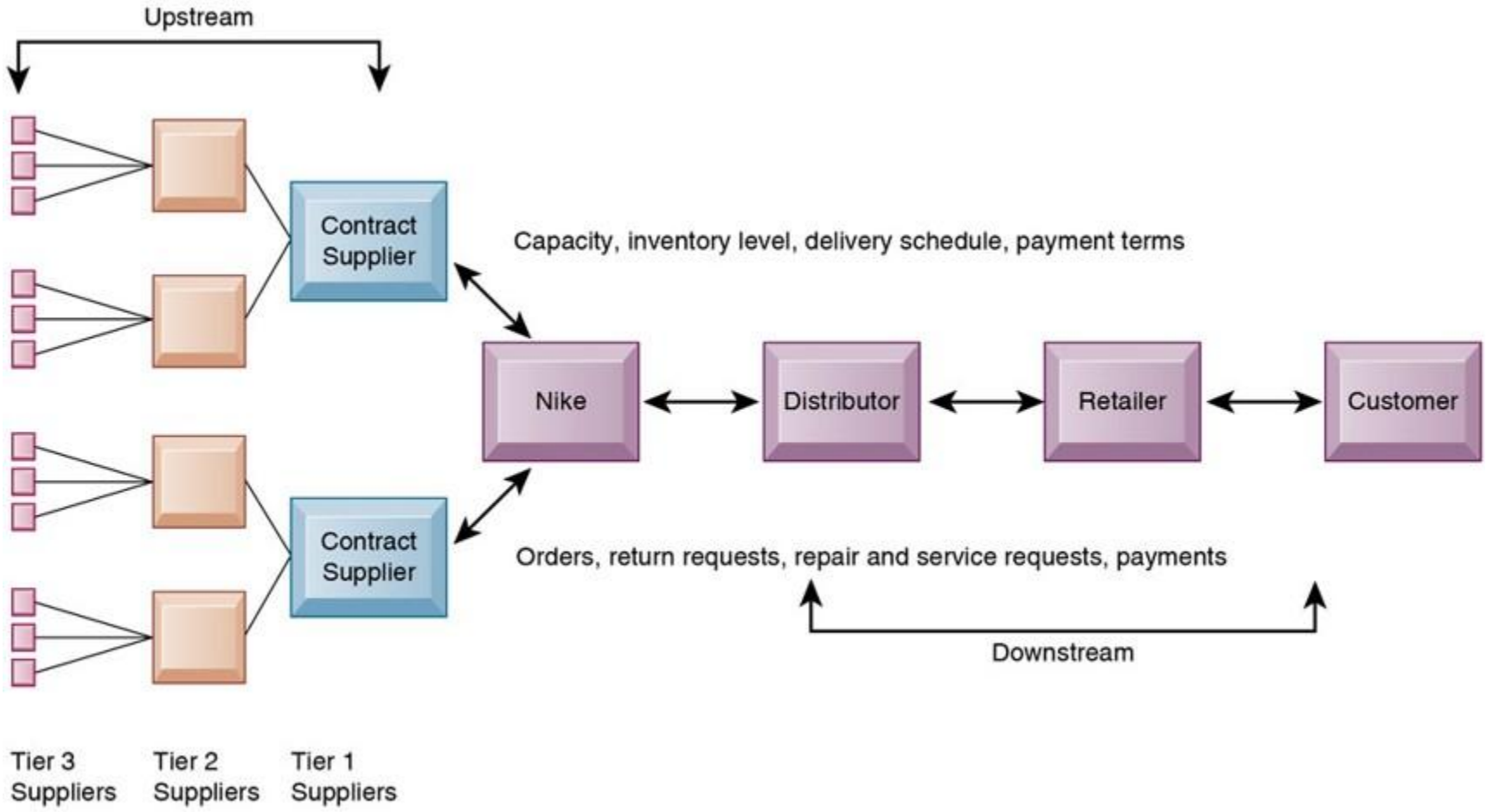
AI and ERP Systems

- ERP system vendors are increasingly incorporating AI
- Many ERP systems now include natural language processing capabilities
- AI-driven ERP systems can identify patterns in very large volumes of data

Understand SCM Systems

- The Supply Chain
  - Network of organizations and processes for:
    - Procuring materials
    - Transforming materials into products
    - Distributing the products
  - Upstream supply chain
  - Downstream supply chain
  - Internal supply chain

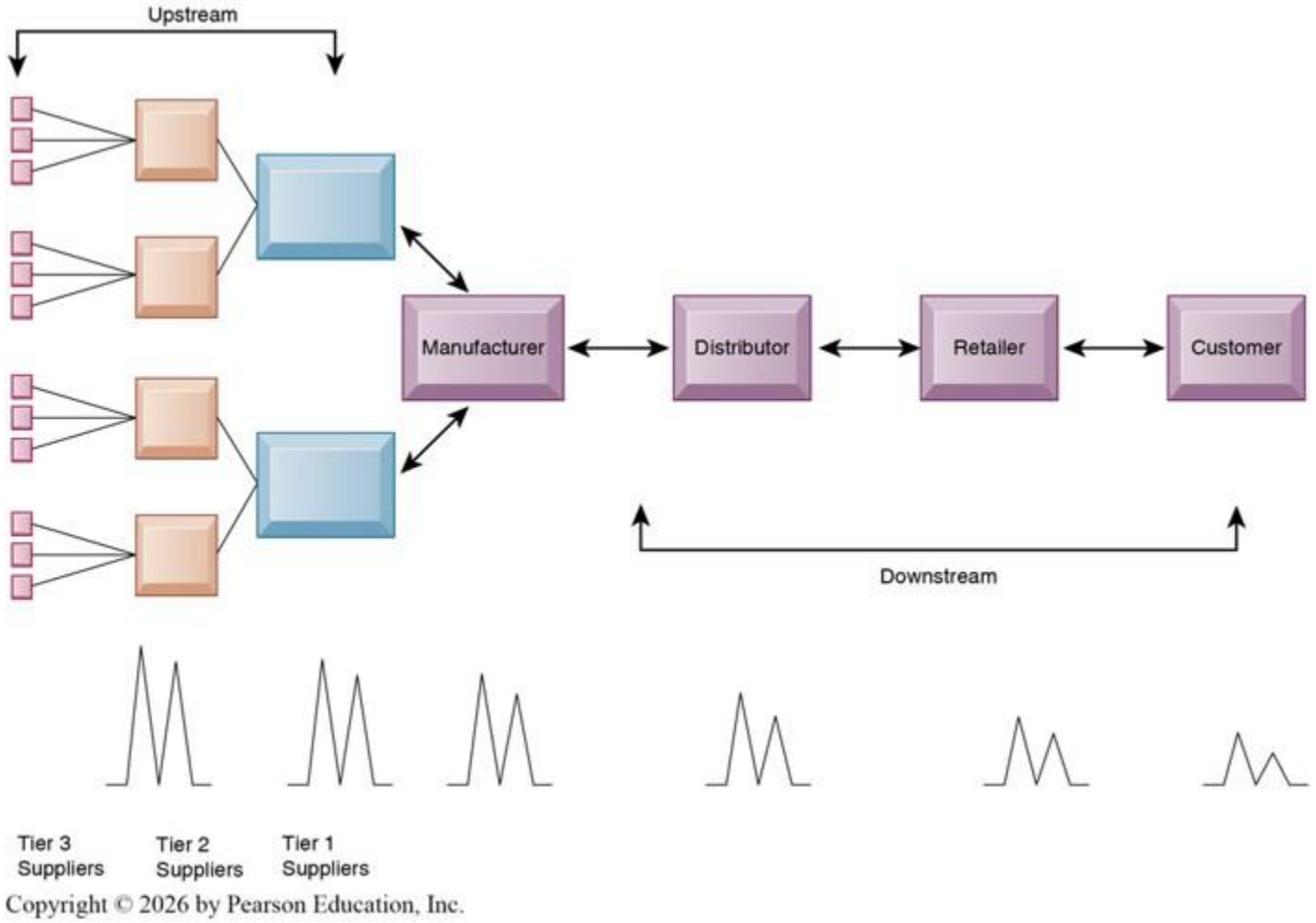
Figure 9.2 Nike's Supply Chain



Information Systems and Supply Chain Management

- Inefficiencies cut into a company's operating costs
  - Can waste up to 25 percent of operating expenses
- Just-in-time strategy
  - Components arrive as they are needed
  - Finished goods shipped after leaving assembly line
- Safety stock: buffer for lack of flexibility in supply chain
- Bullwhip effect
  - Information about product demand gets distorted as it passes from one entity to next across supply chain

Figure 9.3 The Bullwhip Effect



Supply Chain Management Software

- Supply chain planning systems
  - Model existing supply chain
  - Enable demand planning
  - Optimize sourcing, manufacturing plans
  - Establish inventory levels
  - Identify transportation modes
- Supply chain execution systems
  - Manage flow of products through distribution centers and warehouses

Demand-Driven Supply Chains

- Push-based model (build-to-stock)
  - Driven by forecasts or best guesses of demand for products, rather than what the customer orders—"build-to-stock"
- Pull-based model (demand-driven)
  - Customer orders trigger events in supply chain
- Internet enables move from sequential supply chains to concurrent supply chains
  - Complex networks of suppliers can adjust immediately

Figure 9.4 Push- Versus Pull-Based Supply Chain Models

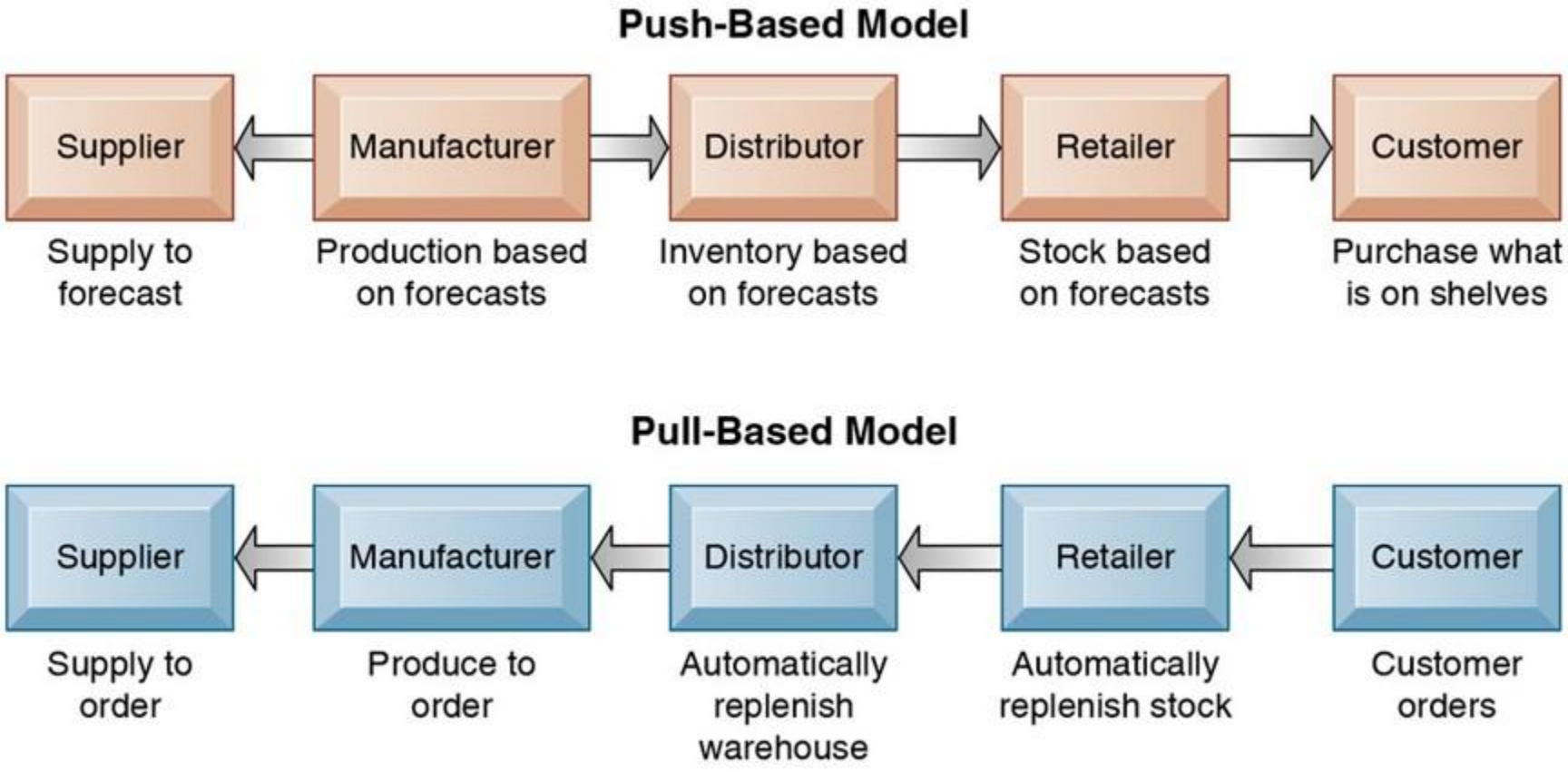
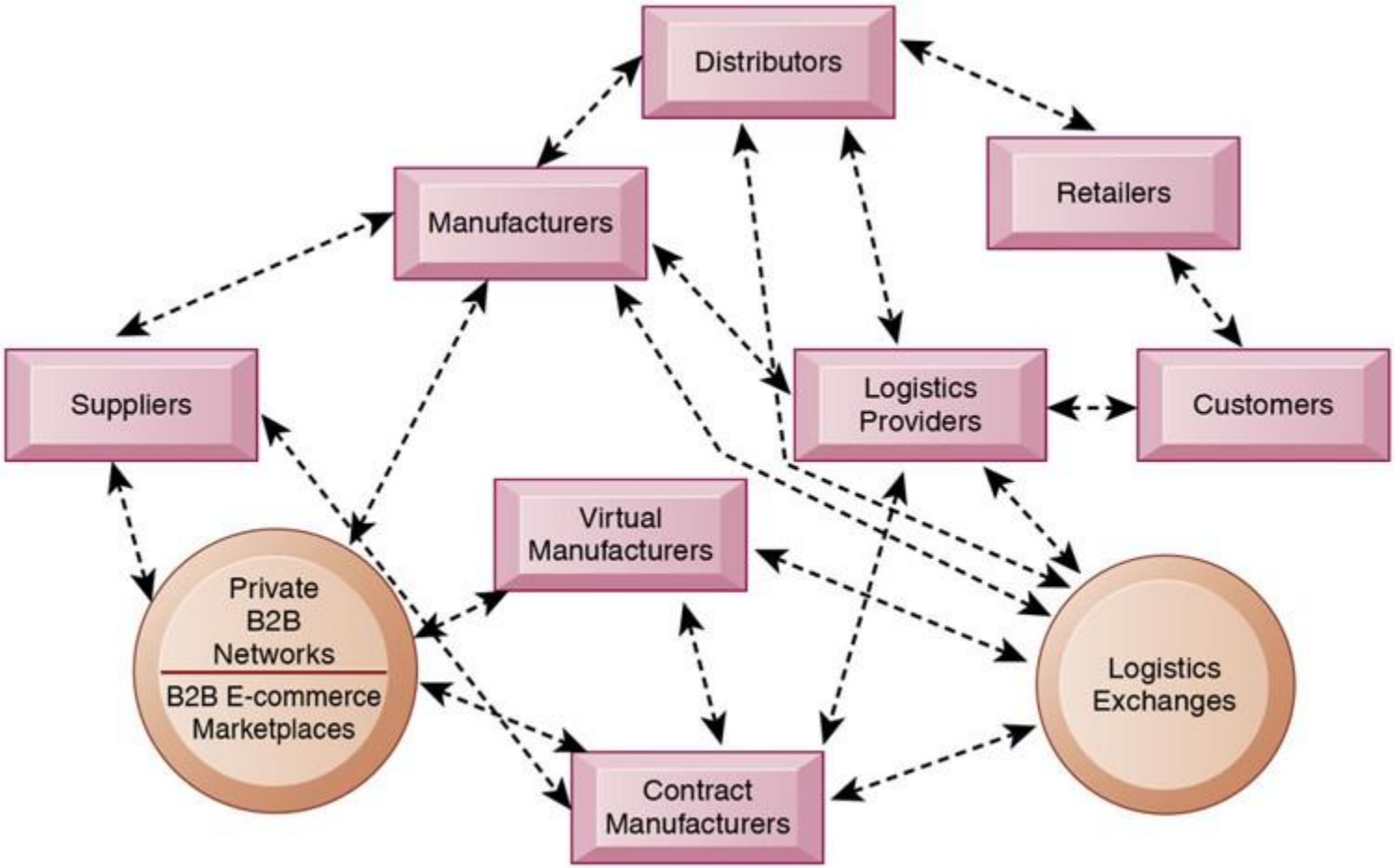


Figure 9.5 The Internet-Driven Supply Chain



Business Value of SCM Systems

- Match supply to demand
- Reduce inventory levels
- Improve delivery service
- Speed product time to market
- Use assets more effectively
  - Total supply chain costs can be 75 percent of operating budget
- Increase sales

Describe Global Supply Chain Management Challenges

- Global supply chain issues
  - Geographical distances, time differences
  - Participants from different countries
    - Different performance standards
    - Different legal requirements
- Internet helps manage global complexities
  - Warehouse management
  - Transportation management
  - Logistics
  - Outsourcing

AI and Supply Chain Management

- AI is very useful for analyzing the proliferating amount of big data generated by modern global supply chains
  - To develop more accurate forecasts
  - Reveal operational insights
  - Improve efficiency of storage and transportation processes across vast logistics networks with multiple partners

Understand CRM Systems (1 of 3)

- Customer relationship management (CRM) system
  - Captures and integrates customer data from all over the organization
  - Consolidates and analyzes customer data
  - Distributes customer information to various systems and customer touch points across enterprise
  - Provides a single enterprise view of customers

Figure 9.6 CRM Systems

Understand CRM Systems (2 of 3)

- Commercial CRM system software packages range from niche tools to large-scale enterprise applications
  - Sales force automation (S F A modules)
    - Sales prospect and contact information
    - Sales quote generation capabilities
  - Customer service
    - Assigning and managing customer service requests
    - Web-based self-service capabilities
  - Marketing
    - Capturing prospect and customer data, scheduling and tracking direct-marketing mailings or e-mail
    - Cross-selling

Figure 9.7 How C R M Systems Support Marketing

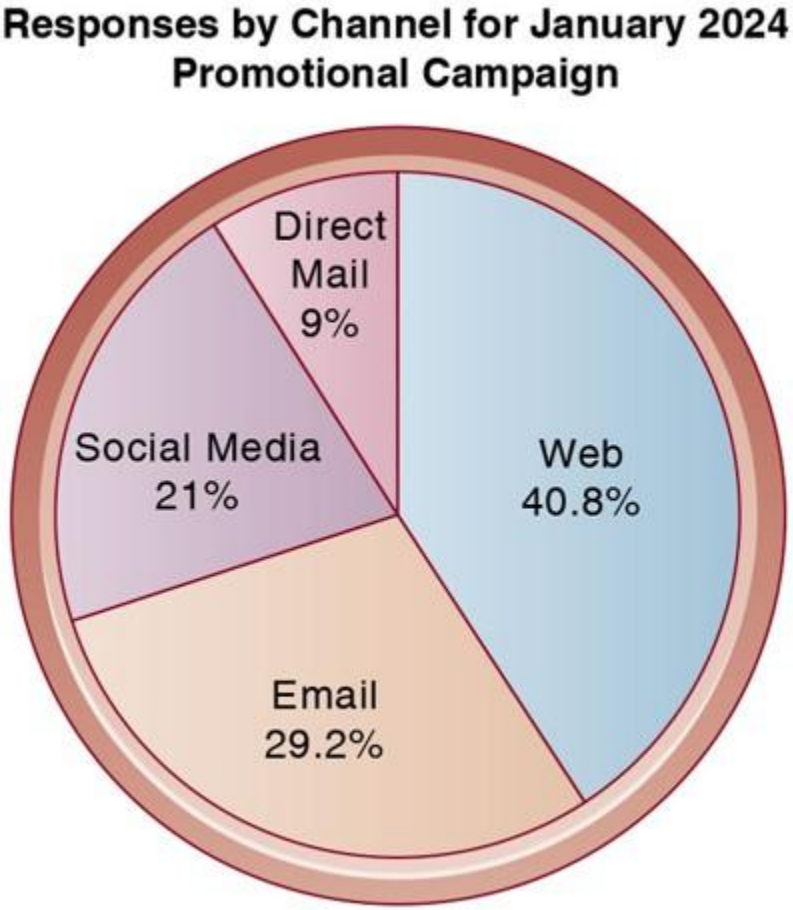


Figure 9.8 C R M System Capabilities

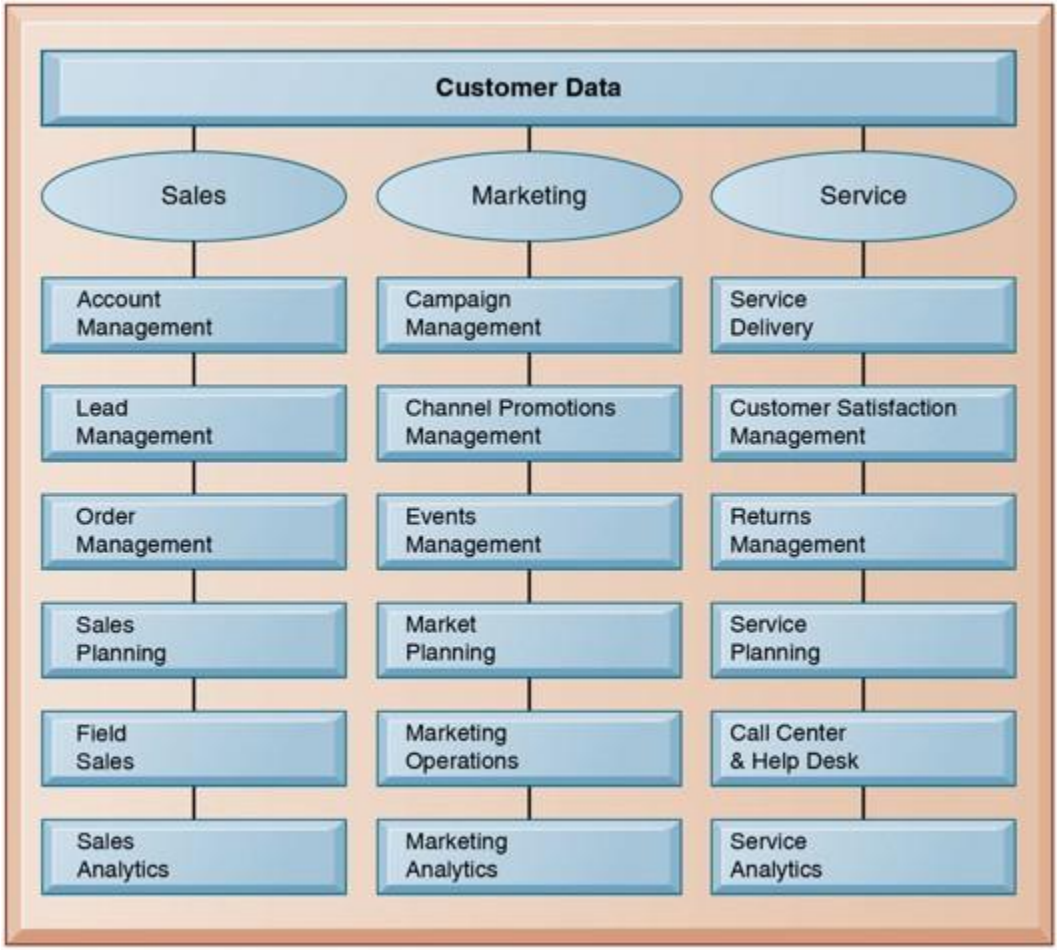
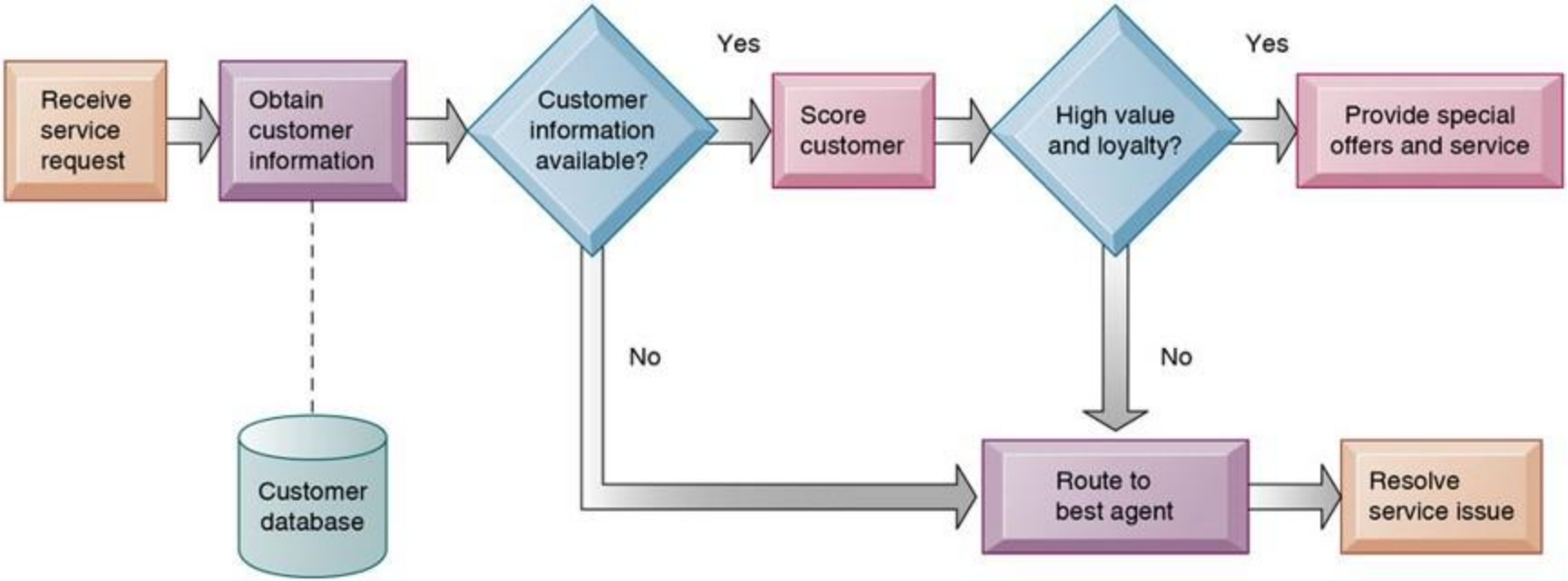


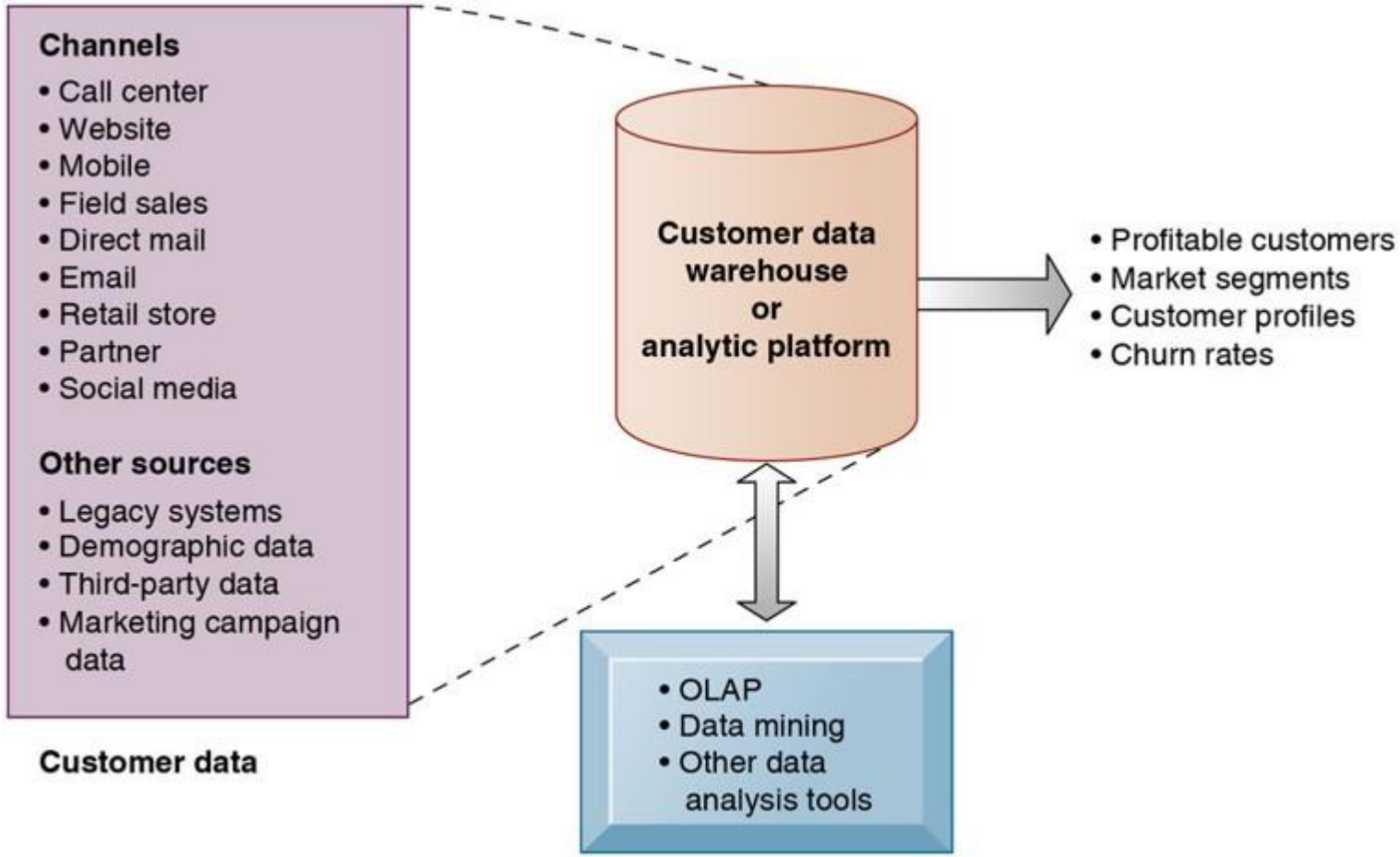
Figure 9.9 Customer Loyalty Management Process Map



Operational and Analytical C R M

- Operational C R M
  - Customer-facing applications
  - Sales force automation call center and customer service support
  - Marketing automation
- Analytical C R M
  - Based on data warehouses populated by operational C R M systems and customer touch points
  - Analyzes customer data (O L A P, data mining, etc.)
    - Customer lifetime value (C L T V)

Figure 9.10 Analytical C R M



Business Value of CRM Systems

- Business value of C R M systems
  - Increased customer satisfaction
  - Reduced direct-marketing costs
  - More effective marketing
  - Lower costs for customer acquisition/retention
  - Increased sales revenue
- Churn rate
  - Number of customers who stop using or purchasing products or services from a company
  - Indicator of growth or decline of firm's customer base

CRM and AI

- Machine learning, generative AI, and other AI technologies are being integrated into CRM systems
  - To automate, enhance, and optimize CRM processes
- AI enables businesses to analyze vast amounts of customer data in real time

Discuss Enterprise Application Challenges (1 of 3)

- Enterprise application challenges
  - Expensive to purchase and implement
    - Many projects experience cost overruns
    - Long development times
  - Technology changes
  - Business process changes
  - Organizational learning changes
  - Switching costs, dependence on software vendors
  - Data standardization, management, cleansing

Discuss Enterprise Application Challenges (2 of 3)

- Enterprise application trends
  - Enterprise application vendors are delivering more value by becoming more
    - Flexible
    - User-friendly
    - Web-enabled
    - Mobile
    - Capable of integration with other systems
  - Cloud-based CRM systems

Discuss Enterprise Application Challenges (3 of 3)

- Composable ERP
  - An adaptive technology strategy
  - Composable ERP
    - Brings together disparate systems and components in a way that allows them to work together as a platform

Describe How Enterprise Applications Are Using AI

- Enterprise application vendors have been adding business intelligence and AI tools to help managers obtain more meaningful information from the massive amounts of data these systems generate
  - Including data from the Internet of Things (IoT)
- AI-enabled tools are capable of much more rapid and complex data analysis than traditional software

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