Essentials of Management Information Systems

Thirteenth Edition

Essentials of MIS

GLOBAL EDITION

THIRTEENTH EDITION

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Pearson
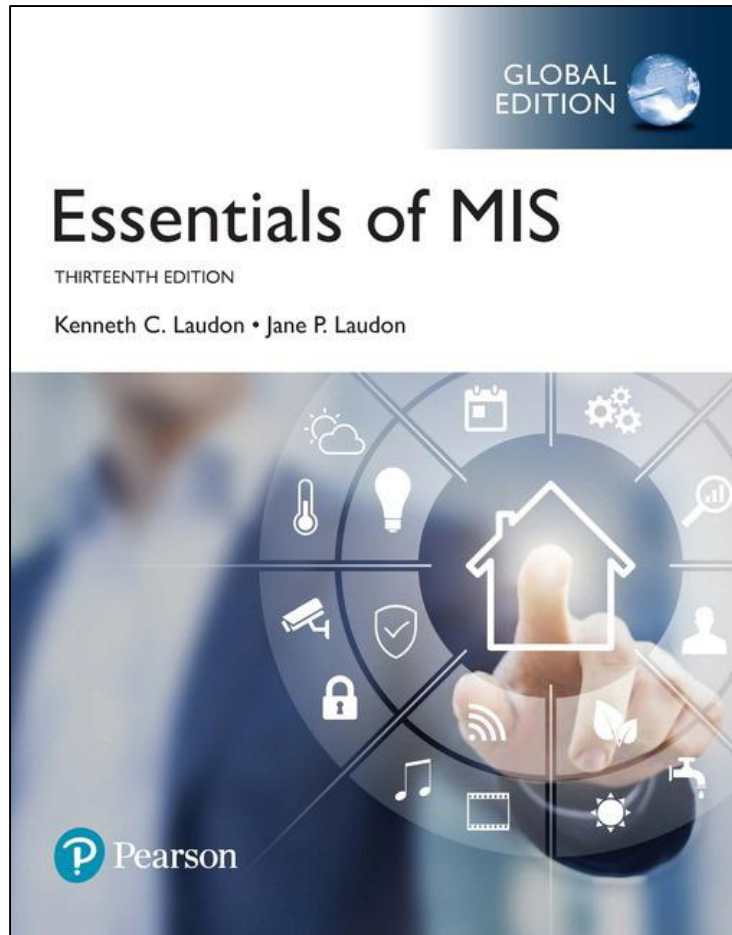
Chapter 9

Achieving Operational Excellence and Customer Intimacy: Enterprise Applications

Learning Objectives

9.1 How do enterprise systems help businesses achieve operational excellence?

9.2 How do supply chain management systems coordinate planning, production, and logistics with suppliers?

9.3 How do customer relationship management systems help firms achieve customer intimacy?

9.4 What are the challenges that enterprise applications pose, and how are enterprise applications taking advantage of new technologies?

Enterprise Systems

How Enterprise Systems Work

- Enterprise resource planning (ERP) systems

- 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
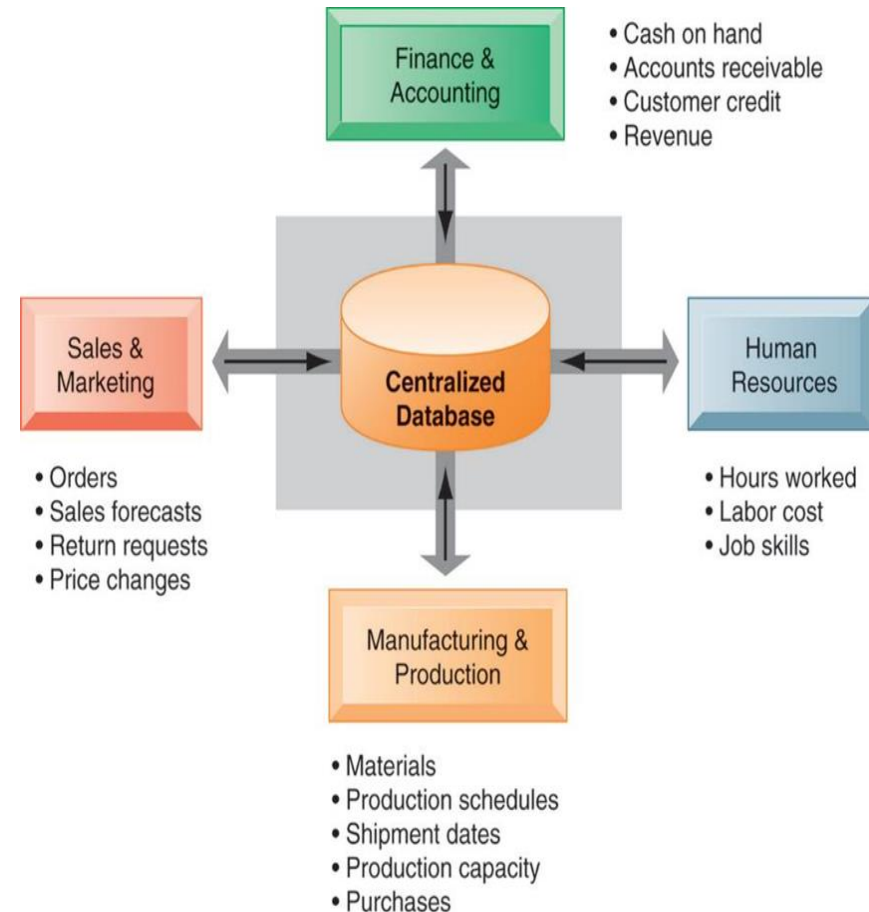
Enterprise Software

- 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 Enterprise Systems

- Increase 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

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
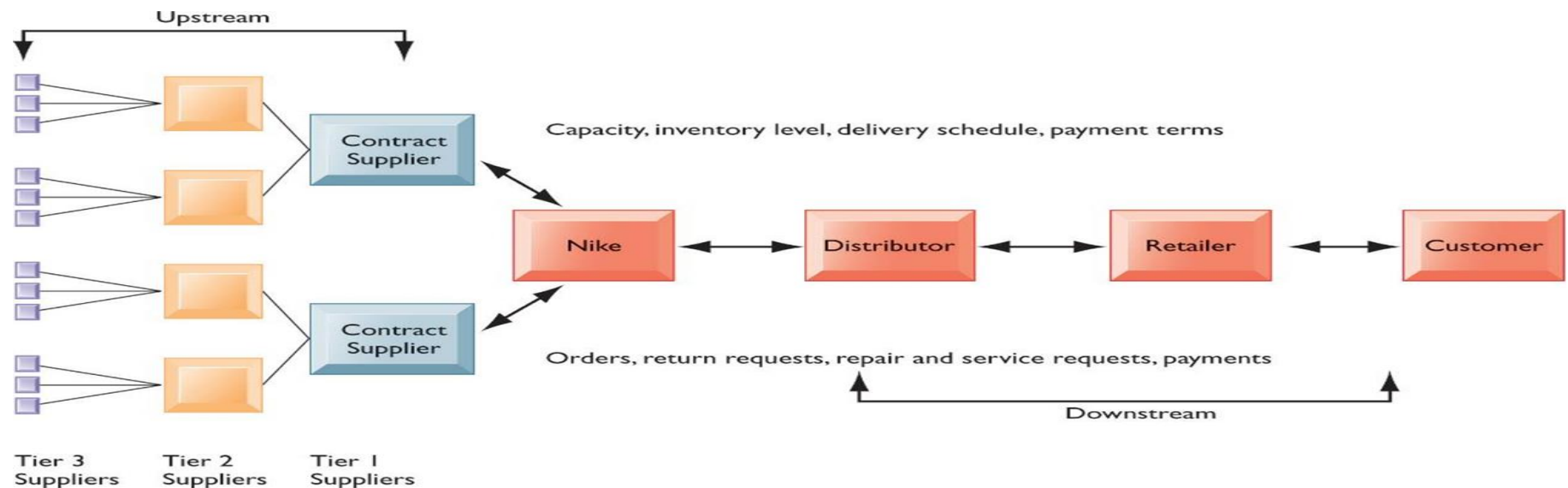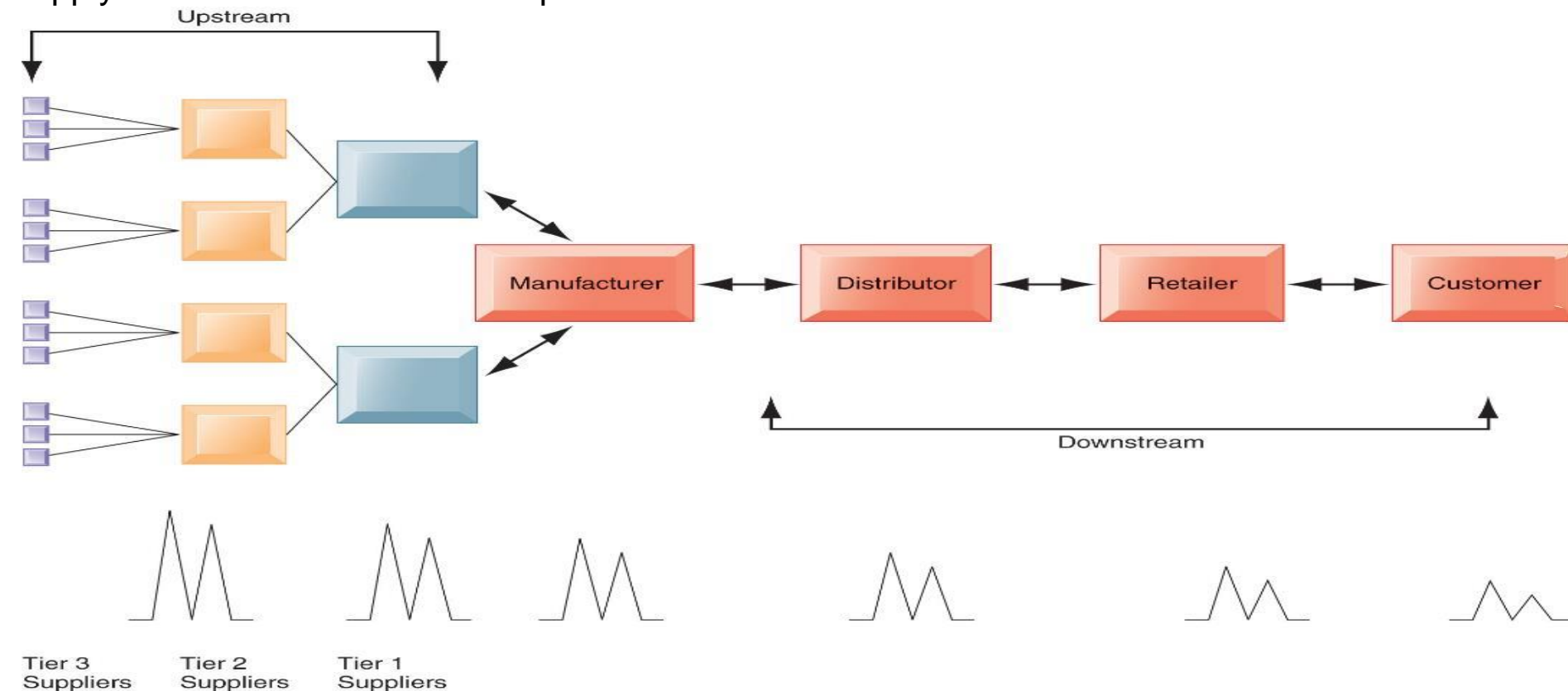
Supply Chain Management

- 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

The Bullwhip Effect

The bullwhip effect occurs when information about the demand for a product gets distorted as it passes from one entity to the next across the supply chain.

It can also result from "gaming," as purchasers present manufacturers or suppliers with a false picture of consumer demand.

It can be dealt with by reducing uncertainties about demand and supply when all the players in a supply chain have accurate and up-to-date information.

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

Global Supply Chains and the Internet

- Global supply chain issues
  - Greater 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

Demand-Driven Supply Chains: From Push to Pull Manufacturing and Efficient Customer Response

- Push-based model (build-to-stock)

- Pull-based model (demand-driven)

- Internet enables move from sequential supply chains to concurrent supply chains

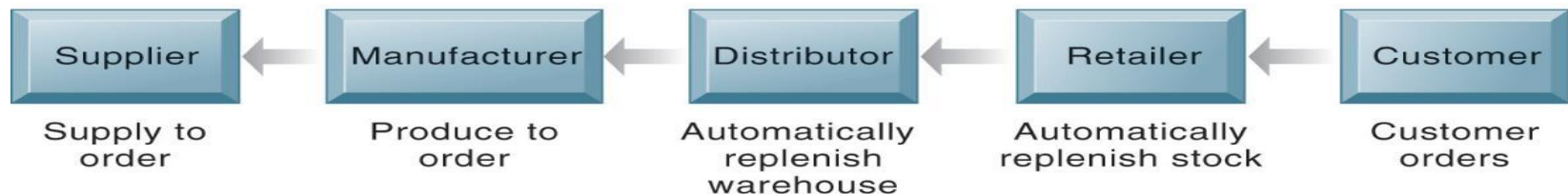# Demand-Driven Supply Chains: From Push to Pull Manufacturing and Efficient Customer Response

- Push-based model (build-to-stock)
  - Earlier SCM systems
  - Schedules based on best guesses of demand

- Pull-based model (demand-driven)
  - Web-based
  - Customer orders trigger events in supply chain

Push-Based Model

Supplier	←	Manufacturer	→	Distributor	→	Retailer	→	Customer
Supply to forecast		Production based on forecasts		Inventory based on forecasts		Stock based on forecasts		Purchase what is on shelves

Pull-Based Model

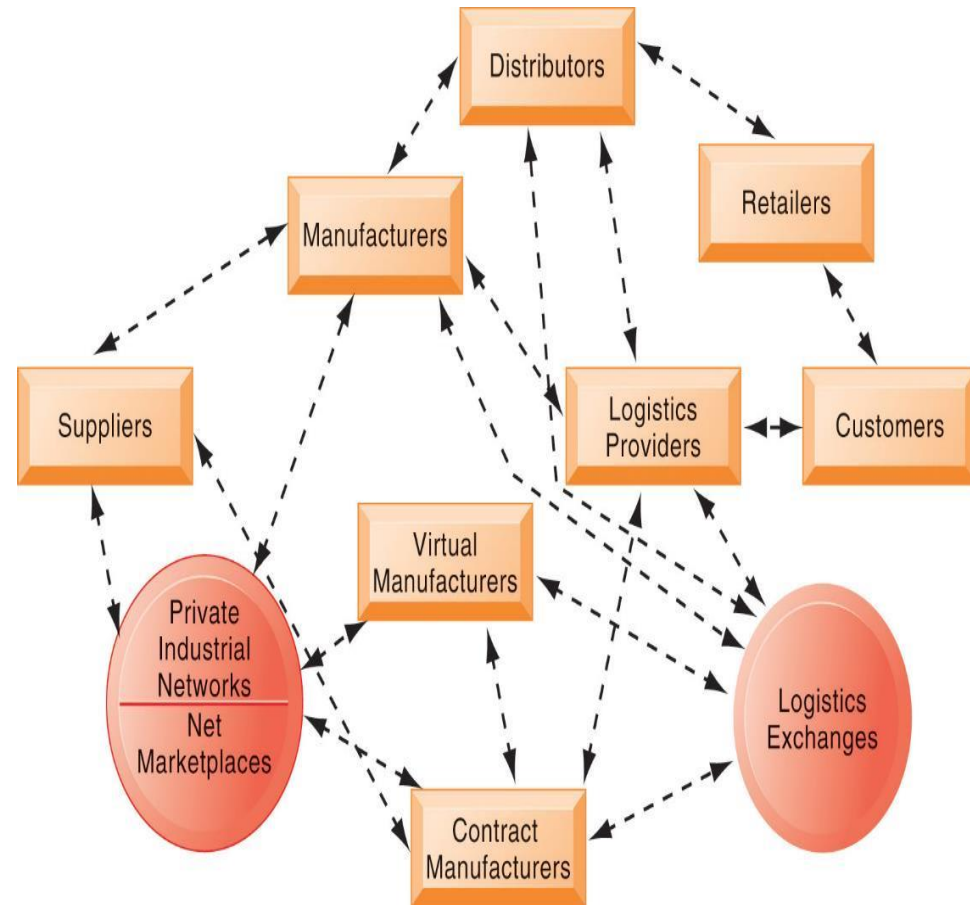| Supplier	←	Manufacturer	←	Distributor	←	Retailer	←	Customer
Supply to order		Produce to order		Automatically replenish warehouse		Automatically replenish stock		Customer orders

The Emerging Internet-Driven Supply Chain

Internet enables move from sequential supply chains to concurrent supply chains Complex networks of suppliers can adjust immediately

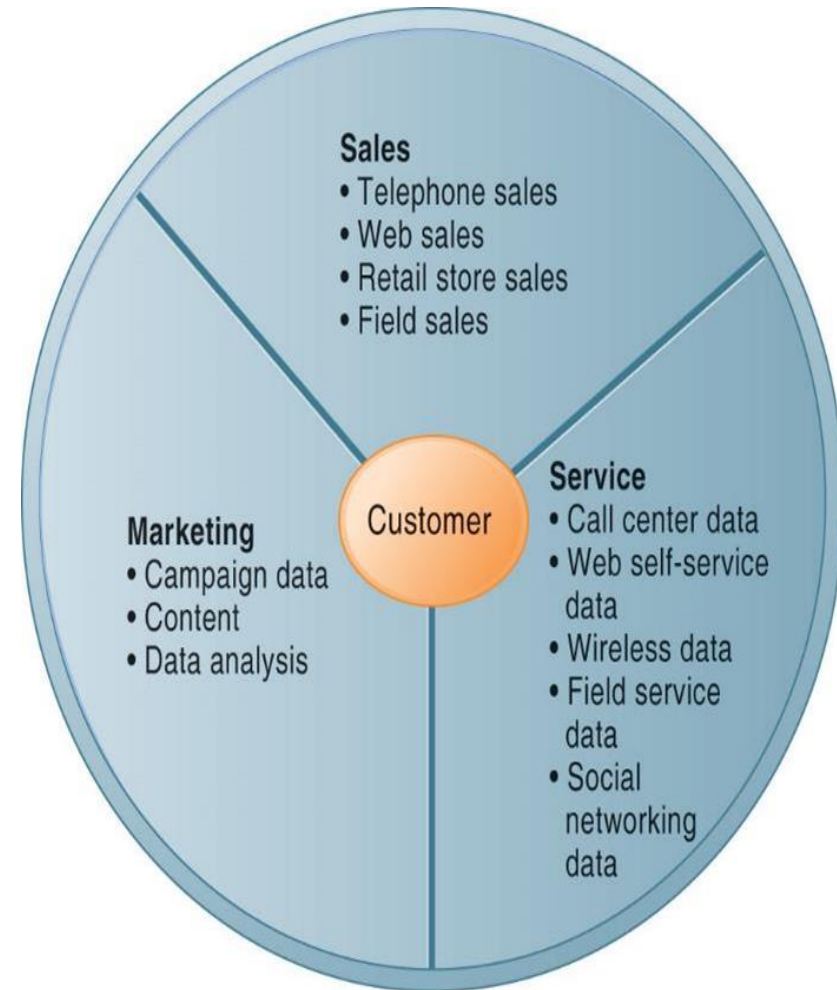# Business Value of Supply Chain Management Systems

- 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

Interactive Session: Management: Physical Flow in Alibaba

- The supply chain management problems **Alibaba Group** faced include the following:

- **Volume:** growing customer base and increasing purchasing power make logistics demands for warehousing and delivery vast

- **Complication:** delivery requirements vary with orders (e.g., perishable goods)

- **Scalability:** need for product delivery skyrockets in peak season

- **Quality:** outsourcing to third-party logistics service providers implies sacrificing service quality because market players competing on price

- **Growth:** scattered market segmentation and growing overall demand in a large country make acquiring existing companies not a permanent solution or a huge investment

- **Speed:** cross-country delivery lengthens delivery time

Customer Relationship Management

- Knowing the customer

- In large businesses, too many customers and too many ways customers interact with firm

- CRM systems
  - Capture and integrate customer data from all over the organization
  - Consolidate and analyze customer data
  - Distribute customer information to various systems and customer touch points across enterprise
  - Provide single enterprise view of customers

Sales
- Telephone sales
- Web sales
- Retail store sales
- Field sales

Customer

Service
- Call center data
- Web self-service data
- Wireless data
- Field service data
- Social networking data

Marketing
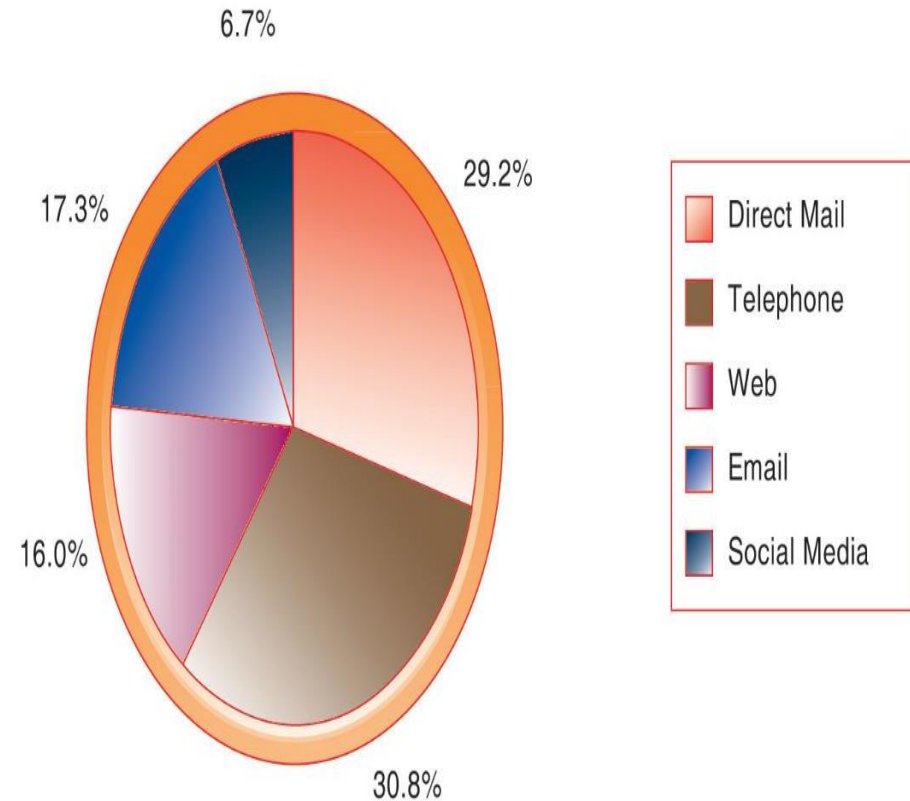- Campaign data
- Content
- Data analysis
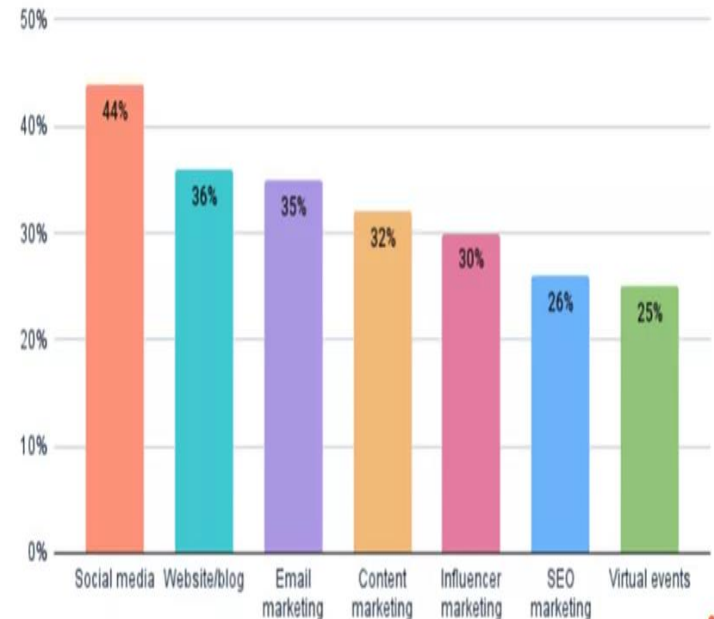
Customer Relationship Management Software

- Packages range from niche tools to large-scale enterprise applications

- More comprehensive packages have modules for:
  - Partner relationship management (PRM)
    - Integrating lead generation, pricing, promotions, order configurations, and availability
    - Tools to assess partners' performances
  - Employee relationship management (ERM)
    - Setting objectives, employee performance management, performance-based compensation, employee training

- CRM packages typically include tools for:
  - Sales force automation (SFA)
    - 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 email
    - Cross-selling

How CRM Systems Support Marketing

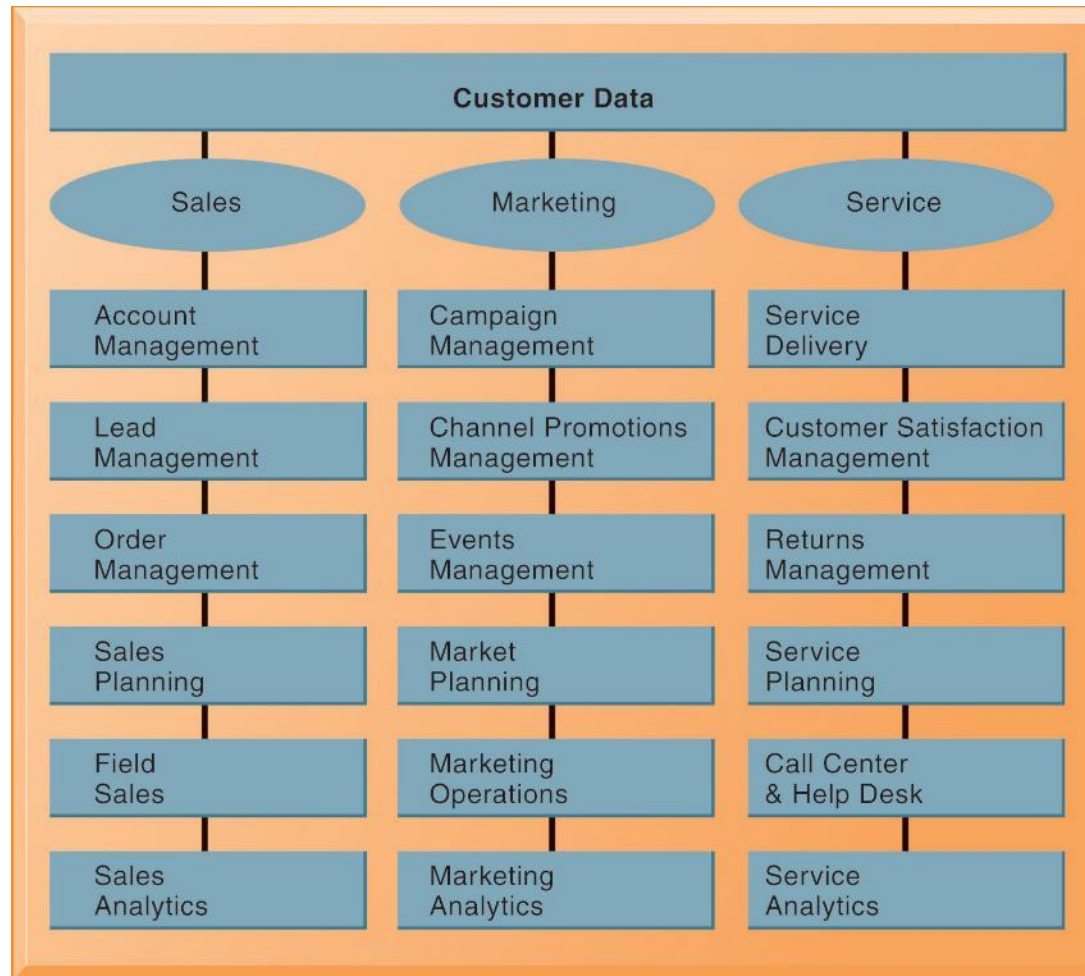**Responses by Channel for January
2018 Promotional Campaign**

Pie chart legend: Direct Mail, Telephone, Web, Email, Social Media

Values shown: 6.7%, 29.2%, 17.3%, 16.0%, 30.8%

What channels do marketers' companies leverage? (Top 7)

Channel	Percentage
Social media	44%
Website/blog	36%
Email marketing	35%
Content marketing	32%
Influencer marketing	30%
SEO marketing	26%
Virtual events	25%

https://www.omnisend.com/blog/marketing-channels/

CRM Software Capabilities

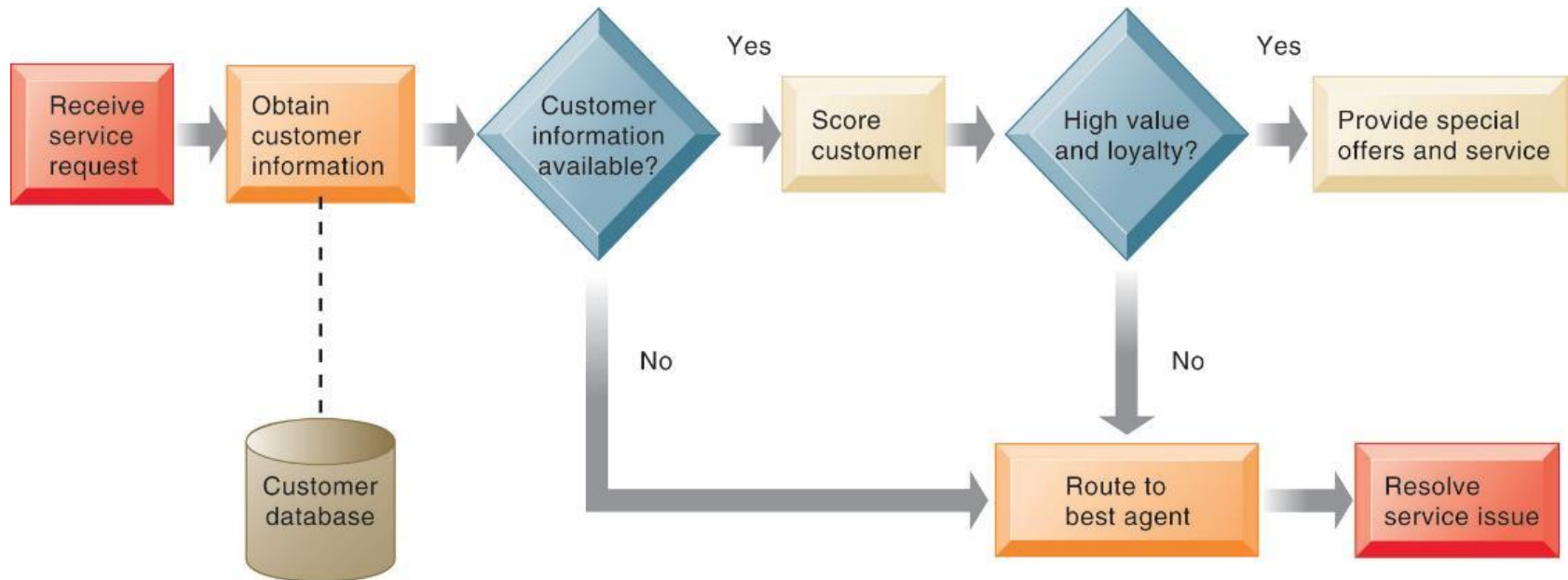| Customer Data		
Sales	**Marketing**	**Service**
Account Management	Campaign Management	Service Delivery
Lead Management	Channel Promotions Management	Customer Satisfaction Management
Order Management	Events Management	Returns Management
Sales Planning	Market Planning	Service Planning
Field Sales	Marketing Operations	Call Center & Help Desk
Sales Analytics	Marketing Analytics	Service Analytics

Customer Loyalty Management Process Map

Operational and Analytical CRM

- Operational CRM
    - Customer-facing applications
    - Sales force automation Call center and customer service support
    - Marketing automation

- Analytical CRM
    - Based on data warehouses populated by operational CRM systems and customer touch points
    - Analyzes customer data (OLAP, data mining, etc.) **Online Analytical Processing**) is the technology behind many Business Intelligence (BI) applications. OLAP is a powerful technology for data discovery, including capabilities for limitless report viewing, complex analytical calculations, and predictive "what if" scenario (budget, forecast) planning.
        - Customer lifetime value (CLTV)
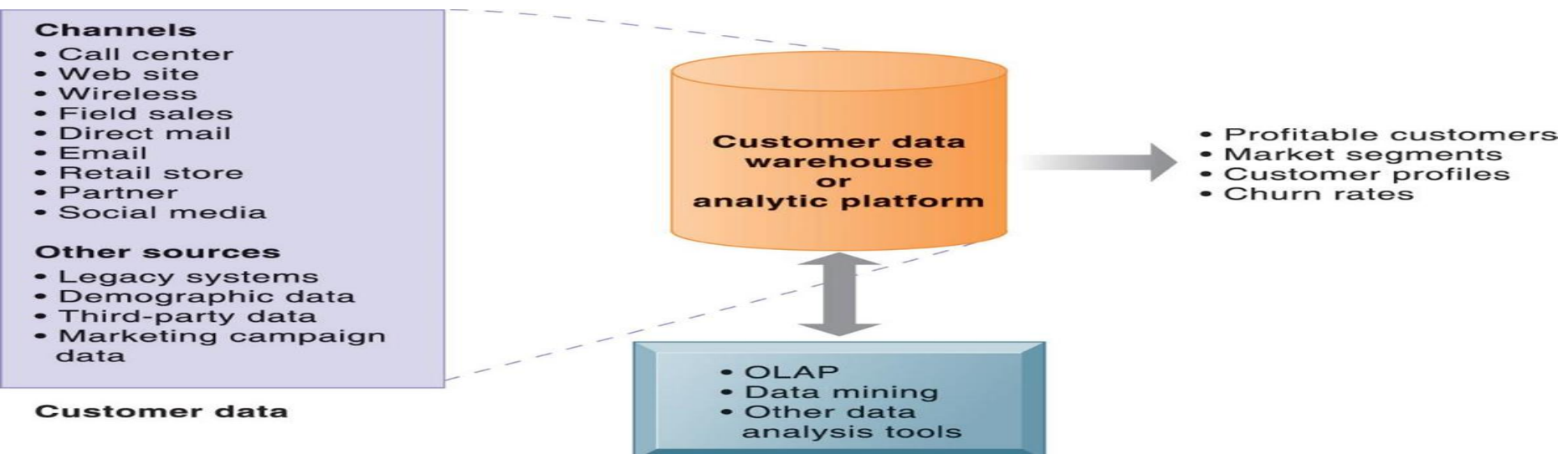
Interactive Session – Organizations: Kenya Airways Flies High with Customer Relationship Management

- Class discussion
  - What was the problem at Kenya Airways described in this case? What people, organization, and technology factors contributed to this problem?
  - What was the relationship of customer relationship management to Kenya Airway's business performance and business strategy?
  - Describe Kenya Airway's solution to its problem. What people, organization, and technology issues had to be addressed by the solution?
  - How effective was this solution? How did it affect the way Kenya Airways ran its business and its business performance?

Business Value of Customer Relationship Management Systems

- Business value of CRM systems
  - Increased customer satisfaction
  - Reduced direct-marketing costs
  - More effective marketing
  - Lower costs for customer acquisition/retention
  - Increased sales revenue

- Churn (Mix) 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

Enterprise Application Challenges

- Highly expensive to purchase and implement enterprise applications

  - The standard perpetual or purchase of a license renewal fees for an ERP is 10% to 20%of the software costs. Therefore, if your ERP costs $1 million, your annual renewal fees will range between $100,000 and $200,000.

  - A 2019 ERP report showed that the average budget per user for an ERP project **is $7,200**. When you factor in how many users your system may have (especially for larger businesses), and added costs, you'll find an ERP implementation can cost anything between $150,000 and $750,000 for a mid-sized business.

- Technology changes

- Business process changes

- Organizational learning, changes

- Switching costs, dependence on software vendors

- Data standardization, management, cleansing

Next-Generation Enterprise Applications

- Enterprise solutions/suites
  - Make applications more flexible, web-enabled, integrated with other systems

- SOA standards service-oriented architecture, defines a way to make software components reusable and interoperable via **service interfaces**. Services use common interface standards and an architectural pattern so they can be rapidly incorporated into new applications.

- Open-source applications

- On-demand solutions

- Cloud-based versions

- Functionality for mobile platform

- Social CRM
  - Incorporating social networking technologies
  - Company social networks
  - Monitor social media activity; social media analytics
  - Manage social and web-based campaigns

- Business intelligence
  - Inclusion of BI with enterprise applications
  - Flexible reporting, ad hoc analysis, "what-if" scenarios, digital dashboards, data visualization