

Chapter 2

GLOBAL E-BUSINESS AND COLLABORATION

Dr. N. Abdolvand

Management Information System

Sources

- ◆ Management Information Systems, Ken Laudon & Jane Laudon, Prentice Hall

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Cases 2

- ◆ Case 1: Walmart's Retail Link Supply Chain
- ◆ Case 2: Salesforce.com: The Emerging Social Enterprise
- ◆ Case 3: How FedEx Works: Enterprise Systems
- ◆ Case 4: Oracle's Austin Data Center
- ◆ Instructional Video 1: US Foodservice Grows Market with Oracle CRM on Demand

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Cases 9

- ◆ Case 1: Sinosteel Strengthens Business Management with ERP Applications
- ◆ Case 2: Ingram Micro and H&R Block Get Close to Their Customers
- ◆ Case 3: Evolution Homecare Manages Patients with Microsoft CRM (2011)
- ◆ Case 4
 - a: What Is Workday: Enterprise Software as a Service (Saas)
 - b: Workday: Mobile Solutions for iPad
- ◆ Instructional Video 1: Zara's" Wearing Today's Fashions With Supply Chain Management

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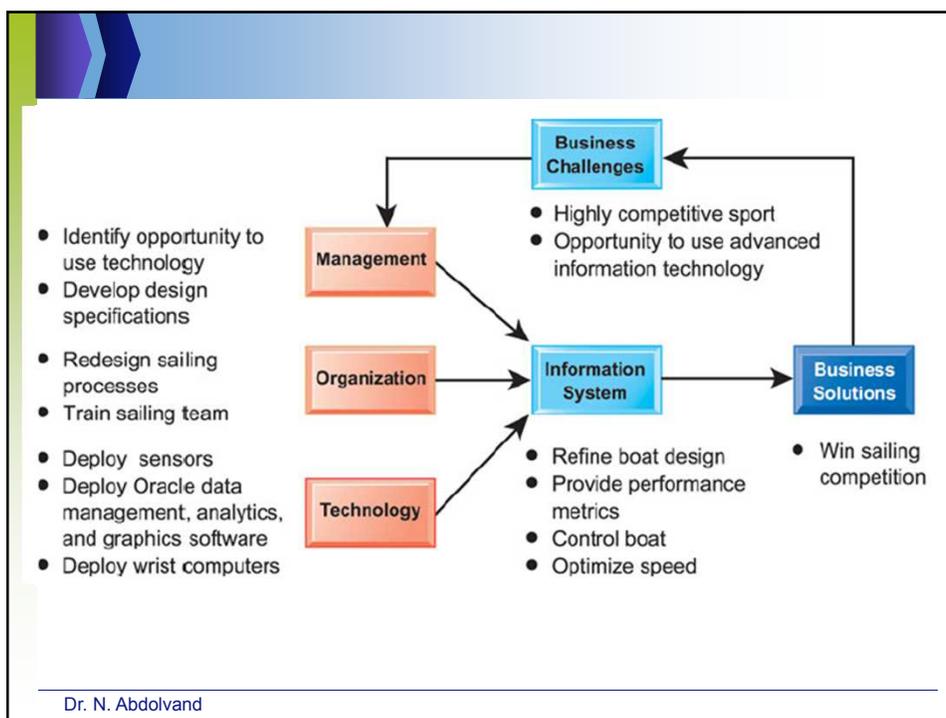
Learning Objectives

- Define and describe business processes and their relationship to information systems.
- Evaluate the role played by systems serving the various levels of management in a business and their relationship to each other.
- Explain how enterprise applications improve organizational performance.
- Explain the importance of collaboration and teamwork in business and how they are supported by technology.
- Assess the role of the information systems function in a business.

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America's Cup 2010: USA Wins with Information Technology

- ◆ **Problem:** Using IT to win the America's Cup race
- ◆ **Solutions:** New technology for physical engineering of boat; sensor network to monitor conditions and data analysis to improve the performance of sails and more.
- ◆ **IBM Oracle Database 11g** data management software provided real time analysis of boat's sensor data.
- ◆ Demonstrates IT's role in fostering innovation and improving performance.
- ◆ Illustrates the benefits of using data analysis and IT to improve products



Business Processes and Information Systems

- ◆ Business processes:
 - Workflows of material, information, knowledge
 - Sets of activities, steps
 - May be tied to functional area or be cross-functional
- ◆ Businesses: Can be seen as collection of business processes
- ◆ Business processes may be assets or liabilities

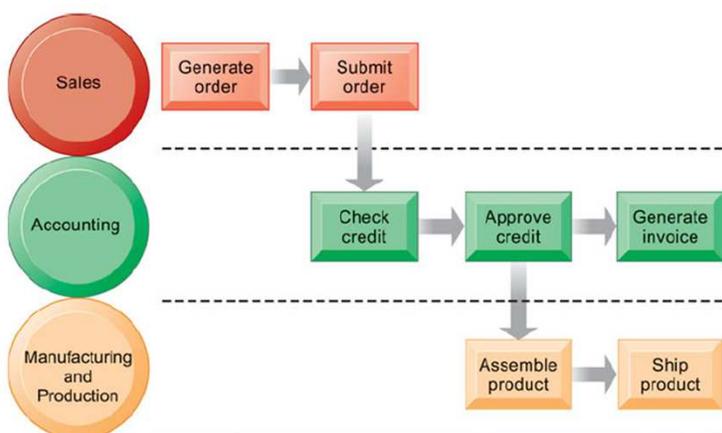
Business Processes and Information Systems

TABLE 2-1 EXAMPLES OF FUNCTIONAL BUSINESS PROCESSES

FUNCTIONAL AREA	BUSINESS PROCESS
Manufacturing and production	Assembling the product Checking for quality Producing bills of materials
Sales and marketing	Identifying customers Making customers aware of the product Selling the product
Finance and accounting	Paying creditors Creating financial statements Managing cash accounts
Human resources	Hiring employees Evaluating employees' job performance Enrolling employees in benefits plans

Business Processes and Information Systems

FIGURE 2-1 THE ORDER FULFILLMENT PROCESS



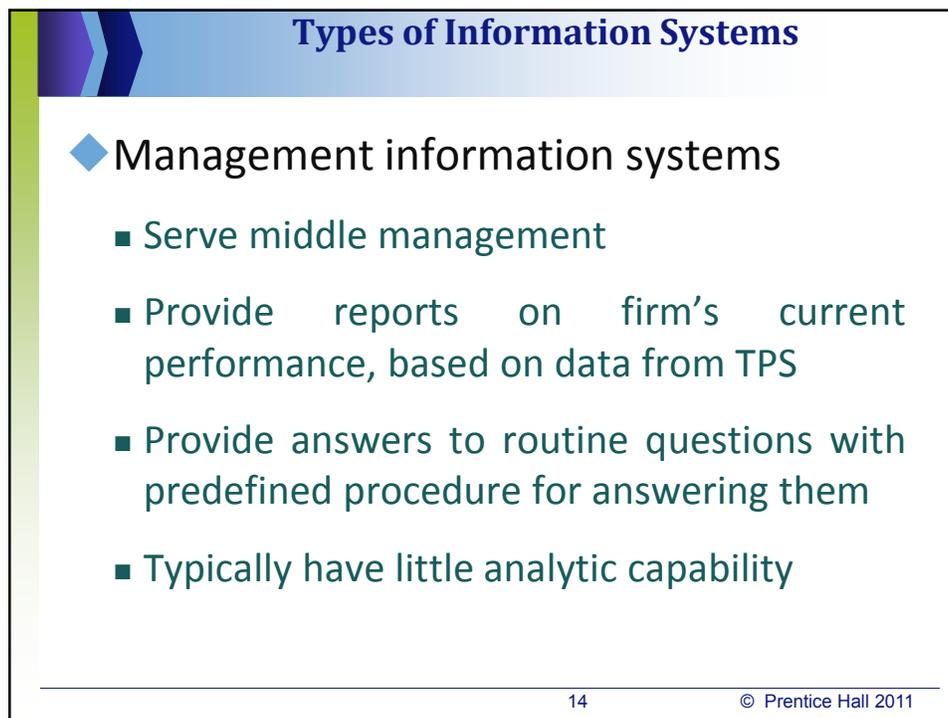
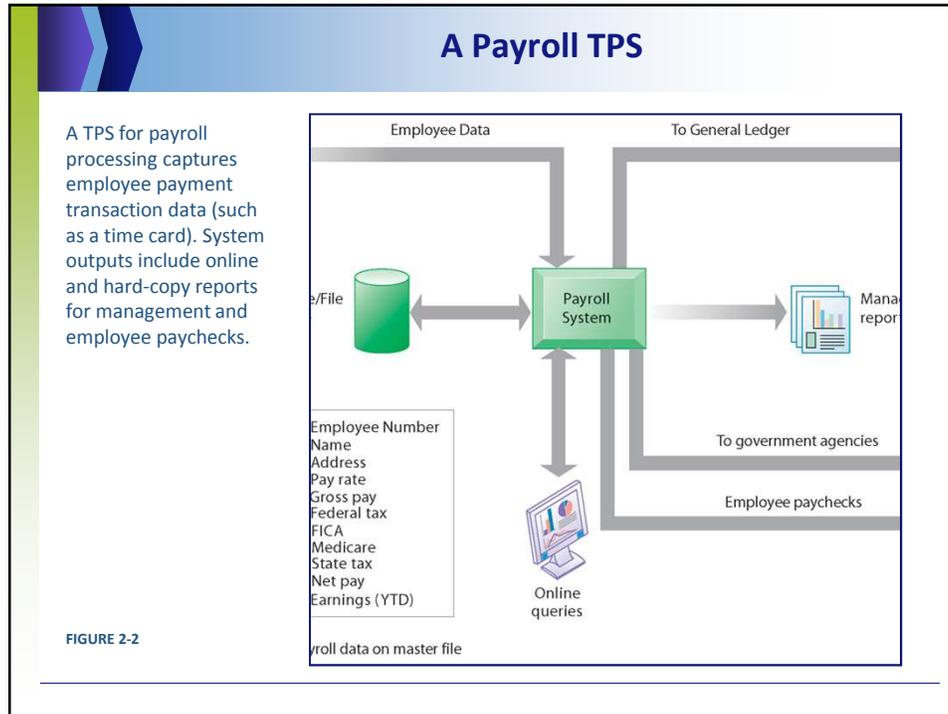
Fulfilling a customer order involves a complex set of steps that requires the close coordination of the sales, accounting, and manufacturing functions.

Business Processes and Information Systems

- ◆ Information technology enhances business processes in two main ways:
 1. Increasing efficiency of existing processes
 - Automating steps that were manual
 2. Enabling entirely new processes that are capable of transforming the businesses
 - Change flow of information
 - Replace sequential steps with parallel steps
 - Eliminate delays in decision making

Types of Information Systems

- ◆ Transaction processing systems
 - Perform and record daily routine transactions necessary to conduct business
 - Examples: sales order entry, payroll, shipping
 - Allow managers to monitor status of operations and relations with external environment
 - Serve operational levels
 - Serve predefined, structured goals and decision making



Types of Information Systems

How Management Information Systems Obtain Their Data from the Organization's TPS

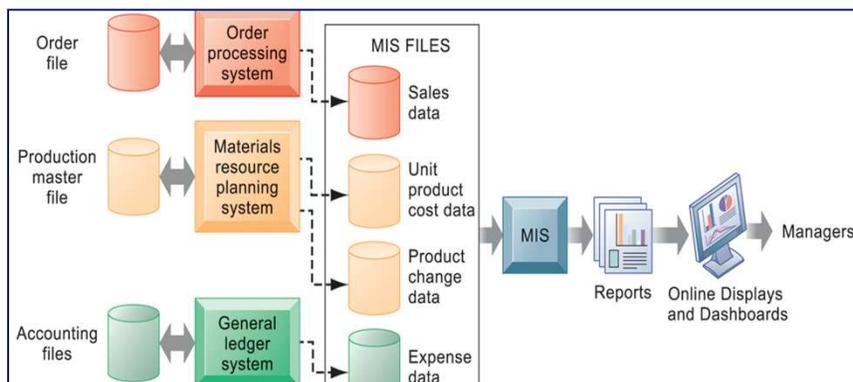


FIGURE 2-3 In the system illustrated by this diagram, three TPS supply summarized transaction data to the MIS reporting system at the end of the time period. Managers gain access to the organizational data through the MIS, which provides them with the appropriate reports.

Sample MIS Report

PRODUCT CODE	PRODUCT DESCRIPTION	SALES REGION	ACTUAL SALES	PLANNED	ACTUAL versus PLANNED
4469	Carpet Cleaner	Northeast	4,066,700	4,800,000	0.85
		South	3,778,112	3,750,000	1.01
		Midwest	4,867,001	4,600,000	1.06
		West	4,003,440	4,400,000	0.91
TOTAL			16,715,253	17,550,000	0.95
5674	Room Freshener	Northeast	3,676,700	3,900,000	0.94
		South	5,608,112	4,700,000	1.19
		Midwest	4,711,001	4,200,000	1.12
		West	4,563,440	4,900,000	0.93
TOTAL			18,559,253	17,700,000	1.05

FIGURE 2-4 This report, showing summarized annual sales data, was produced by the MIS in Figure 2-3.

Types of Information Systems

◆ Decision support systems

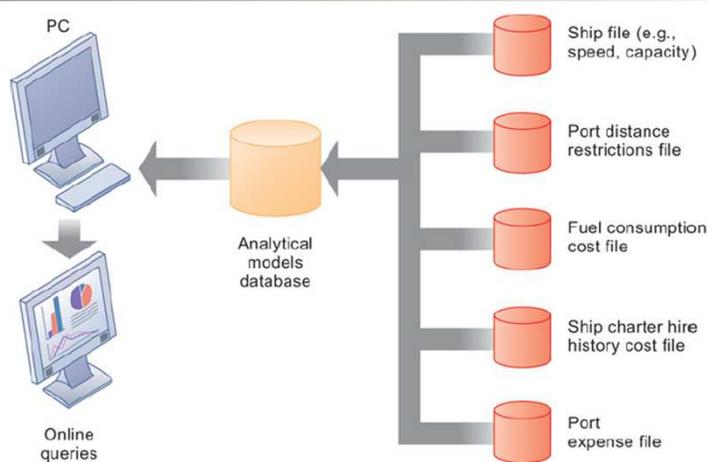
- Serve middle management
- Support non-routine decision making
 - Example: What is impact on production schedule if December sales doubled?
- Often use external information as well from TPS and MIS
- Model driven DSS
 - Voyage-estimating systems
- Data driven DSS
 - Intrawest's marketing analysis systems

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Voyage-Estimating Decision Support System

FIGURE 2-5 VOYAGE-ESTIMATING DECISION-SUPPORT SYSTEM



This DSS operates on a powerful PC. It is used daily by managers who must develop bids on shipping contracts.

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Types of Information Systems

◆ Business intelligence

- Class of software applications
- Analyze current and historical data to find patterns and trends and aid decision-making
- Used in systems that support middle and senior management
 - Data-driven DSS
 - Executive support systems (ESS)

Types of Information Systems

◆ Executive support systems

- Support senior management
- Address non-routine decisions
 - Requiring judgment, evaluation, and insight
- Incorporate data about external events (e.g. new tax laws or competitors) as well as summarized information from internal MIS and DSS
- Example: Digital dashboard with real-time view of firm's financial performance: working capital, accounts receivable, accounts payable, cash flow, and inventory

Types of Information Systems

- ◆ Systems from a constituency perspective
 - Transaction processing systems: supporting operational level employees
 - Management information systems and decision-support systems: supporting managers
 - Executive support systems: supporting executives

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Types of Information Systems

- ◆ Relationship of systems to one another
 - TPS: Major source of data for other systems
 - ESS: Recipient of data from lower-level systems
 - Data may be exchanged between systems
 - In reality, most businesses' systems are only loosely integrated (but they are getting better!)

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Types of Information Systems

- ◆ Enterprise applications
 - Systems for linking the enterprise
 - Span functional areas
 - Execute business processes across firm
 - Include all levels of management
 - Four major applications:
 - Enterprise systems
 - Supply chain management systems
 - Customer relationship management systems
 - Knowledge management systems

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Enterprise Application Architecture

Enterprise applications automate processes that span multiple business functions and organizational levels and may extend outside the organization.

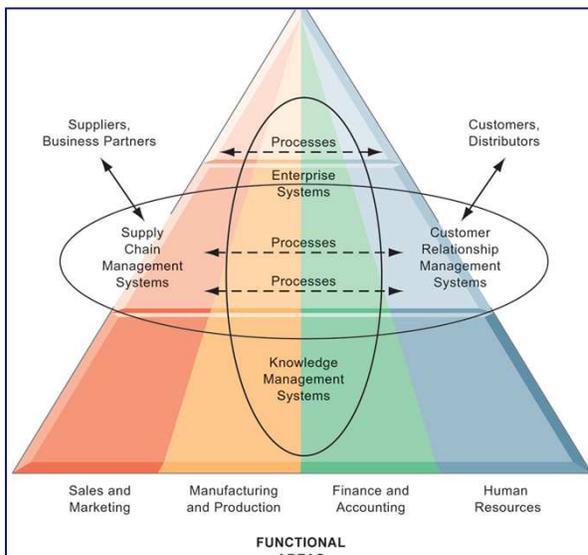


FIGURE 2-6

Enterprise applications

◆ Enterprise systems

- Collects data from different firm functions and stores data in single central data repository
- Resolves problem of fragmented, redundant data sets and systems
- Enable:
 - Coordination of daily activities
 - Efficient response to customer orders (production, inventory)
 - Provide valuable information for improving management decision making

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Enterprise Systems

◆ 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

Enterprise applications

- ◆ Supply chain management (SCM) systems
 - Manage firm's relationships with suppliers
 - Share information about
 - Orders, production, inventory levels, delivery of products and services
 - Goal:
 - Right amount of products to destination with least amount of time and lowest cost

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Supply Chain Management Systems

- ◆ Supply chain:
 - Network of organizations and processes for:
 - Procuring raw materials
 - Transforming them into products
 - Distributing the products
- ◆ Upstream supply chain:
 - Firm's suppliers, suppliers' suppliers, processes for managing relationships with them
- ◆ Downstream supply chain:
 - Organizations and processes responsible for delivering products to customers

NIKE'S SUPPLY CHAIN

◆ Supply Chain Management Systems

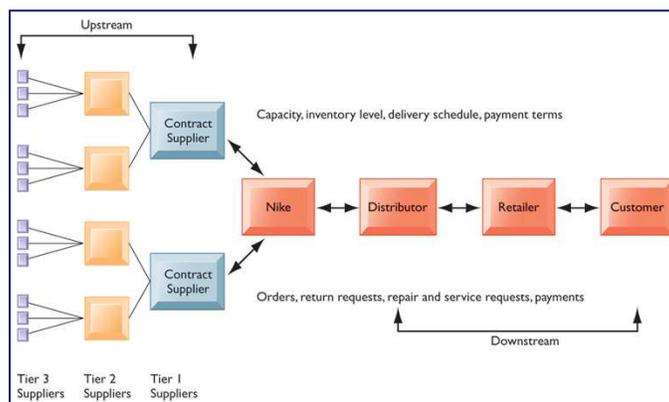


FIGURE 9-2 This figure illustrates the major entities in Nike's supply chain and the flow of information upstream and downstream to coordinate the activities involved in buying, making, and moving a product. Shown here is a simplified supply chain, with the upstream portion focusing only on the suppliers for sneakers and sneaker soles.

Supply Chain Management Systems

◆ Information and supply chain management

- Inefficiencies cut into a company's operating costs
 - Can waste up to 25% 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

◆ Supply Chain Management Systems

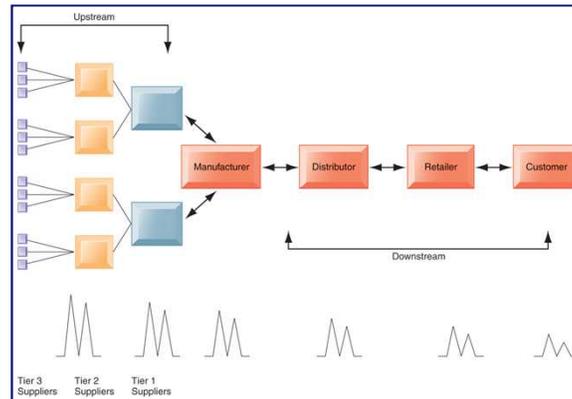


FIGURE 9-3 Inaccurate information can cause minor fluctuations in demand for a product to be amplified as one moves further back in the supply chain. Minor fluctuations in retail sales for a product can create excess inventory for distributors, manufacturers, and suppliers.

Supply Chain Management Systems

◆ Supply chain management software

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

Supply Chain Management Systems

◆ Supply chain management systems

- Push-based model (build-to-stock)
 - Schedules based on best guesses of demand
- Pull-based model (demand-driven)
 - Customer orders trigger events in supply chain
- Sequential supply chains
 - Information and materials flow sequentially from company to company
- Concurrent supply chains
 - Information flows in many directions simultaneously among members of a supply chain network

THE FUTURE INTERNET-DRIVEN SUPPLY CHAIN

The future Internet-driven supply chain operates like a digital logistics nervous system. It provides multidirectional communication among firms, networks of firms, and e-marketplaces so that entire networks of supply chain partners can immediately adjust inventories, orders, and capacities.

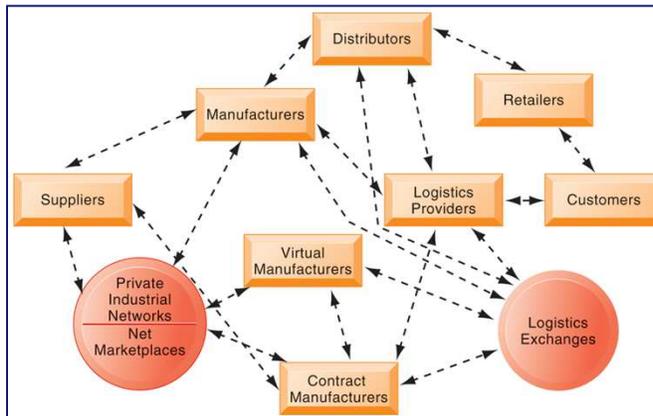


FIGURE 9-5

Enterprise applications

- ◆ Customer relationship management systems:
 - Provide information to coordinate all of the business processes that deal with customers in sales, marketing, and service to optimize revenue, customer satisfaction, and customer retention
 - Integrate firm's customer-related processes and consolidate customer information from multiple communication channels

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Customer Relationship Management Systems

- ◆ Knowing the customer
 - In large businesses, too many customers and too many ways customers interact with firm
- ◆ Customer relationship management (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

Customer Relationship Management Systems

- ◆ CRM packages typically include tools for:
 - Sales force automation (SFA)
 - E.g. sales prospect and contact information, and sales quote generation capabilities
 - Customer service
 - E.g. assigning and managing customer service requests; Web-based self-service capabilities
 - Marketing
 - E.g. capturing prospect and customer data, scheduling and tracking direct-marketing mailings or e-mail

Customer Relationship Management Systems

- ◆ CRM software
 - CRM packages range from niche tools to large-scale enterprise applications
 - More comprehensive 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)**
 - E.g. Setting objectives, employee performance management, performance-based compensation, employee training

HOW CRM SYSTEMS SUPPORT MARKETING

Customer relationship management software provides a single point for users to manage and evaluate marketing campaigns across multiple channels, including e-mail, direct mail, telephone, the Web, and wireless messages.

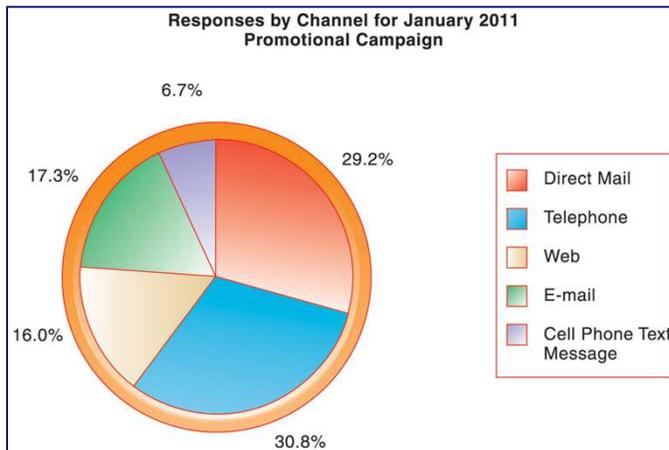


FIGURE 9-7

CUSTOMER LOYALTY MANAGEMENT PROCESS MAP

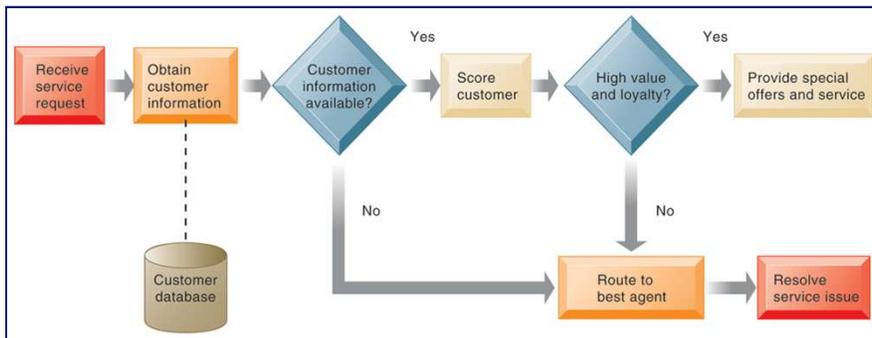


FIGURE 9-9

This process map shows how a best practice for promoting customer loyalty through customer service would be modeled by customer relationship management software. The CRM software helps firms identify high-value customers for preferential treatment.

Customer Relationship Management Systems

◆ Operational CRM:

- Customer-facing applications
 - E.g. sales force automation, call center and customer service support, and marketing automation

◆ Analytical CRM:

- Analyze customer data output from operational CRM applications
- Based on data warehouses populated by operational CRM systems and customer touch points
 - Customer lifetime value (CLTV)

Customer Relationship Management Systems

◆ Business value of CRM

- Increased customer satisfaction
- Reduced direct-marketing costs
- More effective marketing
- Lower costs for customer acquisition/retention
- Increased sales revenue
- Reduce **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

Enterprise applications

- ◆ Knowledge management systems (KMS)
 - Support processes for acquiring, creating, storing, distributing, applying, integrating knowledge
 - How to create, produce, distribute products and services
 - Collect internal knowledge and experience within firm and make it available to employees
 - Link to external sources of knowledge

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Enterprise applications

- ◆ Alternative tools that increase integration and expedite the flow of information
 - Intranets:
 - Internal company Web sites accessible only by employees
 - Extranets:
 - Company Web sites accessible externally only to vendors and suppliers
 - Often used to coordinate supply chain

E-...

- ◆ E-business
 - Use of digital technology and Internet to drive major business processes
- ◆ E-commerce
 - Subset of e-business
 - Buying and selling goods and services through Internet
- ◆ E-government:
 - Using Internet technology to deliver information and services to citizens, employees, and businesses

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Enterprise Applications: New Opportunities and Challenges

- ◆ Highly expensive to purchase and implement
 - \$3.5 million to over \$12 million
- ◆ Technological changes
- ◆ Business process changes
- ◆ Organizational changes
- ◆ Switching costs, dependence on software vendors
- ◆ Data standardization, management, cleansing

Enterprise Applications: New Opportunities and Challenges

- ◆ Next-generation enterprise applications
 - Move is to make applications more flexible, Web-enabled, integrated with other systems
 - Enterprise suites
 - Software to enable CRM, SCM, and enterprise systems work together and with suppliers and client systems
 - Utilize Web services, SOA
 - Open source & on-demand solutions
 - Mobile compatible; Web 2.0 capabilities
 - Complementary analytics products

Systems for Collaboration and Teamwork

- ◆ Collaboration:
 - Short-lived or long-term
 - Informal or formal (teams)
- ◆ Growing importance of collaboration:
 - Changing nature of work
 - Growth of professional work – “interaction jobs”
 - Changing organization of the firm
 - Changing scope of the firm
 - Emphasis on innovation
 - Changing culture of work

Systems for Collaboration and Teamwork

TABLE 2-2 BUSINESS BENEFITS OF COLLABORATION

BENEFIT	RATIONALE
Productivity	People working together can complete a complex task faster than the same number of people working in isolation from one another. There will be fewer errors.
Quality	People working collaboratively can communicate errors, and correct actions faster, when they work together than if they work in isolation. Can lead to a reduction in buffers and time delay among production units.
Innovation	People working collaboratively in groups can come up with more innovative ideas for products, services, and administration than the same number working in isolation from one another.
Customer service	People working together in teams can solve customer complaints and issues faster and more effectively than if they were working in isolation from one another.
Financial performance (profitability, sales, and sales growth)	As a result of all of the above, collaborative firms have superior sales growth and financial performance.

Building a collaborative culture and business processes

- ◆ “Command and control” organizations
 - No value placed on teamwork or lower-level participation in decisions
- ◆ Collaborative business culture
 - Senior managers rely on teams of employees
 - Policies, products, designs, processes, systems rely on teams
 - Managers purpose is to build teams

The Information Systems Function in Business

- ◆ Information systems department:
 - Formal organizational unit responsible for information technology services
 - Often headed by chief information officer (CIO)
 - Other senior positions include
 - chief security officer (CSO),
 - chief knowledge officer (CKO),
 - chief privacy officer (CPO)
 - Programmers
 - Systems analysts
 - Information systems managers

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The Information Systems Function in Business

- End users
 - Representatives of other departments for whom applications are developed
 - Increasing role in system design, development
- IT Governance:
 - Strategies and policies for using IT in the organization
 - Decision rights
 - Accountability
 - Organization of information systems function
 - Centralized, decentralized, etc.

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