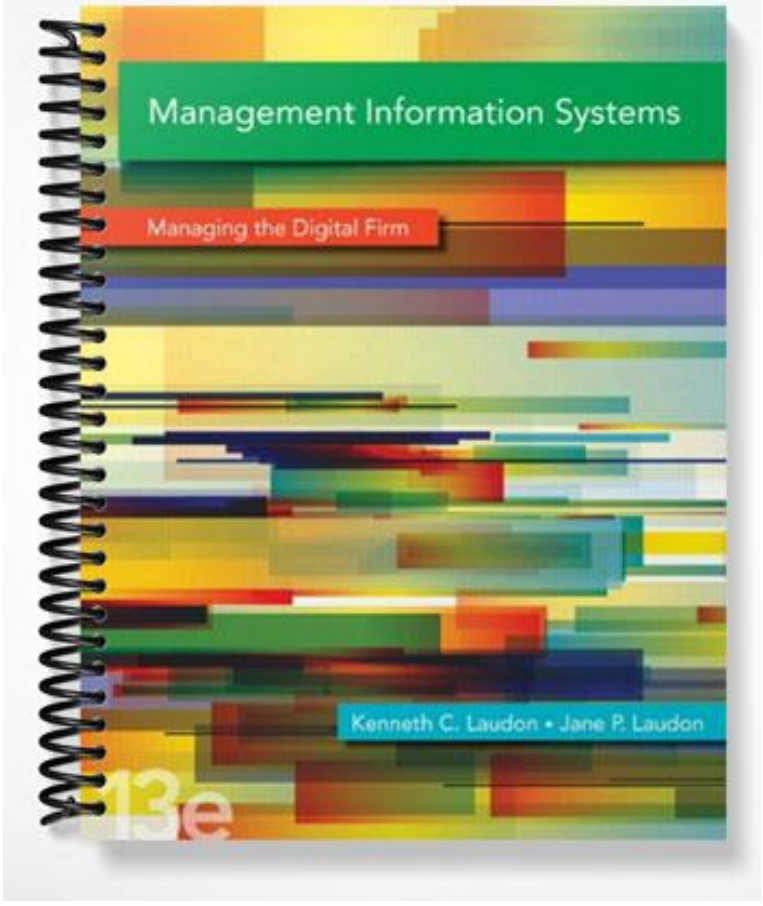
SOLUTIONS MANUAL



Chapter 2
Global E-Business and Collaboration

Learning Objectives

1. What are business processes? How are they related to information systems?
2. How do systems serve the different management groups in a business?
3. How do systems that link the enterprise improve organizational performance?
4. Why are systems for collaboration and teamwork so important and what technologies do they use?
5. What is the role of the information systems function in a business?

Chapter Outline

2.1 *Business Processes and Information Systems*
Business Processes
How Information Technology Improves Business Processes
2.2 *Types of Information Systems*
Systems for Different Management Groups
Systems for Linking the Enterprise
E-Business, E-Commerce and E-Government
2.3 *Systems for Collaboration and Social Business*
What is Collaboration?
What is Social Business?
Business Benefits of Collaboration and Social Business
Building a Collaborative Culture and Business Processes
Tools and Technologies for Collaboration and Social Business
2.4 *The Information Systems Function in Business*
The Information Systems Department
Organizing the Information Systems Function

Key Terms

The following alphabetical list identifies the key terms discussed in this chapter. The page number for each key term is provided.

Business intelligence, 47
Chief information officer (CIO), 69
Chief knowledge officer (CKO), 69
Chief privacy officer (CPO), 69
Chief security officer (CSO), 69
Executive support systems (ESS), 52
Information systems department, 68
Information systems managers, 69
Interorganizational system, 56
IT governance, 70

Copyright © 2014 Pearson Education, Inc.

Collaboration, 58
Customer relationship management (CRM) systems, 56
Cyberlockers, 64
Decision-support systems (DSS), 49
Digital dashboard, 52
Electronic business (e-business), 57
Electronic commerce (e-commerce), 57
E-government, 57
End users, 69
Enterprise applications, 53
Enterprise systems, 53
Knowledge management systems (KMS), 56
Management information systems (MIS), 47
Portal, 52
Programmers, 69
Social business, 59
Supply chain management (SCM) systems, 55
Systems analysts, 69
Teams, 58
Telepresence, 63
Transaction processing systems (TPS), 46

Teaching Suggestions

The opening vignette, "TELUS Embraces Social Learning," provides an outstanding example of how the company embraced social business tools to significantly reduce its learning budget all the while it increased the amount of learning and education available to its employees. These technologies are the very same ones every business needs to succeed.

Prior to incorporating the new social business tools, 90 percent of the TELUS learning budget was devoted to formal learning in which employees had to wait until attending a scheduled class before they could learn new techniques. After the company began incorporating new collaboration and social business tools into its employee education, only 60 percent of the budget was devoted to formal learning. Further cost savings will occur as the new learning solutions take hold.

TELUS uses Microsoft SharePoint Server 2010 as a single point of entry to shared knowledge. It has the ability to search all the company's learning assets simultaneously. Employees create their own Web pages to describe their areas of expertise and special skills. It also offers blogging tools to allow employees to locate an expert, discuss his or her experiences, share advice, and find answers to questions without having to take a class or interrupt a colleague.

Document sharing, tagging user-generated content, and videos, all contribute to the social learning and collaboration among employees at TELUS. Along the way, TELUS changed its organizational culture and business processes for knowledge dissemination and employee learning.

Section 2.1, "Business Processes and Information Systems" Table 2-1 may help students understand that every business, large and small, uses the same basic business processes. Referring back to this table may help as you examine information needs for

Copyright © 2014 Pearson Education, Inc.

each functional area. You could have students select a business with which they are familiar and identify some of the business processes involved in each of the basic functional areas.

Another good classroom exercise is to use Figure 2-1 to compare how the order fulfillment process can be accomplished sequentially, as the figure shows, versus simultaneously as a new information system would allow.

Section 2.2, "Types of Information Systems" This section focuses on how information systems serve various management levels in companies. The ultimate goal is for students to realize that one system helps serve other systems and, working together, all the systems serve the entire organization.

Type of System	Information Inputs	Information Outputs	Users
Transaction Processing Systems (TPS)	Transactions; daily events	Detailed reports; lists; summaries	Operations personnel; first-line supervisors
Management Information Systems (MIS)	Summary transaction data; high-volume data; simple models	Summary and exception reports	Middle managers
Decision Support Systems (DSS)	Optimized for data analysis, analytic models and data analysis tools	Interactive; simulations; analysis	Professionals, staff managers
Executive Support Systems (ESS)	Aggregate data; external, internal	Projections; responses to queries	Senior managers

It's likely students' main encounter will be with TPS systems when they first begin their careers. Stress the importance of accurate data at the TPS level because it serves as the initial source for the other systems.

Typically, DSS and ESS systems will be the least familiar. Students may better understand them if you ask these types of questions: Why do national retail chains open stores in certain locations and not others? How can a retail chain determine which type of clothing to stock at different geographic locations?

Most importantly, students need to understand that each type of information system supports the different kinds of decisions made at each managerial level.

Interactive Session: Technology: Can Airlines Solve Their Baggage Handling?

Case Study Questions

1. What types of transactions are handled by baggage handling systems?

Copyright © 2014 Pearson Education, Inc.

The primary types of transactions handled by baggage handling systems are moving bags from check-in areas to departure gates, moving them from gate to gate and then finally, moving them from arrival gates to baggage claim areas. That's a lot of input data, processing, and output data.

When computers scan the bar code on a piece of baggage, the data is processed quickly. The output determines where and when to send the bags. After being scanned once, the system always knows where the bags are at any point in the system.

2. What are the management, organization, and technology components of baggage handling systems?

Management: Those who tag luggage at check-in counters must enter the data correctly. The tags contain flight information and a bar code that all of the computers in the system can read. Once bags reach the gate, they enter a sorting station where airline employees use computer terminals to send bags to the correct plane. Delta recently added a service that allows passengers to track their checked bags from scanning at check-in, to the flight they're loaded on, and then arrival at baggage claim.

Organization: Paying for often spotty and unreliable baggage handling service was one of the biggest sources of customer dissatisfaction throughout the industry. Baggage handling systems can be extremely expensive, but if implemented successfully, pay for themselves. Lost and mishandled baggage is a major expense for airlines, and reducing the incidence of lost and mishandled baggage creates significant yearly savings.

Technology: Baggage handling systems are among the most complex systems because they involve a wide variety of sensors, actuators, mechanical devices, and computers. The systems use over three million lines of software program code. Advanced technology used in these systems include destination-coded vehicles (DCV), automatic bar code scanners, use of radio frequency identification (RFID) tags, and high-tech conveyors equipped with sorting machines. Because DCVs move at high speed and do not come to a full stop to receive baggage, the conveyors must be extremely precise, depositing bags where they are needed at just the right time for maximum efficiency.

3. What is the problem these baggage handling systems are trying to solve? Discuss the business impact of this problem. Are today's baggage handling systems a solution to this problem? Explain.

The problem baggage handling systems are trying to solve is customer dissatisfaction and to promote customer goodwill as well as reduce costs.

Business impact: Overall the airline industry rate for lost luggage has improved by 38 percent over similar figures from two years ago when nearly 2.5 million bags were

Copyright © 2014 Pearson Education, Inc.

lost or delayed. Lost and mishandled baggage is a major expense for airlines. Reducing the problem creates significant yearly savings. The global airline industry price tag for mishandled baggage is $2.5 billion per year.

Today's baggage handling systems do appear to be a solution to the problem. US Airways lost nine bags for every 1,000 travelers in 2007. After implementing a new system, that number dropped to three bags for every 1,000 travelers. Even though the company spent $16 million on the system, the airline saved $25 million a year and boosted customer satisfaction.

Between 2008 and 2010, Delta Airlines installed optical scanners to read baggage tag bar codes, widened and extended its system of baggage conveyor belts, and installed a central control room to monitor conveyor belts and baggage carousels in Atlanta and most of its other airport terminals. The airline recorded a top-notch baggage handling record of just 2.93 mishandled bags per 1,000 passengers. Bags now take less than 10 minutes to travel from terminal to terminal. The process used to take as long as 30 minutes with the older system.

4. What kinds of management reports can be generated from the data from these systems?

All data input into the baggage handling systems are recorded in transaction processing systems. From there, a variety of Management Information Systems (MIS), Decision Support Systems (DSS), and Executive Support Systems (ESS) reports can be generated.

MIS reports may include information about the number of bags at any given time in any given place; how long it takes to move a bag from point A to any other point in the system; the number of bags processed through the baggage handling system that are outside the norms. Equipment management reports can be generated that provide information about the maintenance status of the various system components.

DSS reports can be generated that advise managers when to perform maintenance on equipment or whether equipment should be moved to alternate locations based on baggage loads. These kinds of reports can also provide information to managers about whether the system is meeting its goals and how it can be improved.

ESS reports can advise executives about cost factors and if the system is providing the targeted return on investment. Information about the efficiency of the system is also available to executives based on data generated by the baggage handling systems.

It's quite possible students feel overwhelmed by all the different kinds of information systems described in the first part of this section. "*Systems for Linking the Enterprise"* helps you tie together all of the information systems into a cohesive

Copyright © 2014 Pearson Education, Inc.

package and shows how data and information can flow seamlessly through an organization.

Enterprise systems: Central to this section is the need to coordinate activities, decisions, and knowledge across the firm's different levels, functions, and business units. Enterprise systems use a single central data repository in order to supply all users with a consolidated view of employees, customers, suppliers, and vendors. The key to effectively using enterprise systems is to eliminate redundancy and duplication, not just in the information systems but also in business processes.

Supply chain management systems: Students should understand the importance of a business managing its relationships with suppliers through a free-flowing exchange of information. The concept may seem foreign to those students who think a company is a closed entity and shouldn't share data or information with anyone outside the organization. A review of a typical supply chain may be helpful: sourcing, producing, and delivering goods and services. It may also be helpful to engage the students in an exercise that lists all the entities involved in producing and delivering goods and services.

Customer relationship management systems: Ask students how many times they've quit doing business with a company because of poor customer service. Ask them how many times they've had to supply a business with the same information simply because they talked to a different department in the company. Discuss how important it is for every functional area in a business to have the same consolidated view of its customers to avoid these kinds of problems.

Knowledge management systems: Few, if any, students have probably had any experience with these systems. Point out that businesses are beginning to realize how much expertise and experience is locked away in employees' heads and that it's imperative to find a way to capture that information. Moreover, it's important that businesses find a way to make the expertise and experience available to a wide range of users. On the other hand, students should understand that employees are very reluctant to impart with their individual knowledge due to fear or self-preservation.

Intranets and extranets: As Internet-based technologies continue to expand the basic platforms for disseminating information, smaller businesses that cannot afford to implement enterprise applications can turn to intranets and extranets. Your difficulty will be getting students to understand the difference between the two since they operate basically the same way. Intranets are limited to internal users; extranets are available to external users as well as internal users. Both are an inexpensive way to quickly disseminate information and data across functional lines and organizational boundaries.

E-business, e-commerce, and e-government: Have students give examples of their own experiences with of each of these. Students are most often confused between e-business and e-commerce. Stress that e-business refers to the use of digital

Copyright © 2014 Pearson Education, Inc.

technology and the Internet to execute major business processes while e-commerce is more narrowly centered on the buying and selling of goods and services over the Internet.

Interactive Session: Management: Piloting Procter & Gamble from Decision Cockpits

Case Study Questions

1. **What management, organization, and technology issues had to be addressed when implementing Business Sufficiency, Business Sphere, and Decision Cockpits?**

   Management: Managers and executives were receiving data and information but only when it was days or weeks old—too late to make on-the-spot decisions and immediately solve problems.

   Organization: A major reason for P&G's success has been its robust information technology and willingness to pursue new IT innovations to maintain a competitive advantage in its industry. P&G has made it its goal to digitize its process from end to end and to fundamentally change the way it gathers, reports, and interprets data. One of its major goals was to eliminate time spent by employees debating the validity of competing versions of data found in emails, spreadsheets, letters, and reports. By providing a one-stop source of accurate and detailed real-time business data, all employees are able to focus instead on decisions for improving the business.

   Technology: The old business model was to figure out what reports people wanted, capture the data, and then deliver them to the key decision-makers days or weeks later. The new model is more instantaneous with people huddling together in person or via video and pulling in the right experts to fix a problem the moment it arises. More real-time data and analytics expertise were required.

2. **How did these decision-making tools change the way the company ran its business? How effective are they? Why?**

   These solutions eliminate time spent debating different data sets, and instead use a system that allows leaders to focus on immediate business decisions using the most accurate data available at that precise moment.

   The Business Sufficiency program, furnishes executives with predictions about market share and other key performance metrics six to twelve months into the future. It's based on analytic models that show what is occurring in the business right now, why it's happening, and what actions the company can take to mitigate the situation. By providing the "why," the company can take a more appropriate action.

Copyright © 2014 Pearson Education, Inc.

The Business Sphere interactive system reveals insights, trends and opportunities for leaders, and prompts them to ask focused business questions that can be addressed with the right data on the spot. Thousands of algorithms and analytical models aggregate data, organize them appropriately and then monitor trends. Everyone in the meeting or organization sees the same information.

The Decision Cockpit eliminates time spent by employees debating the validity of competing data versions. Employees are able to focus instead on decisions for improving the business. The Business Sphere and Decision Cockpits encourage P&G employees and managers to manage by exception and devote their time and energy where it is most needed.

3. How are these systems related to P&G's business strategy?

Managers and employees are able to make faster and better decisions than were previously possible. The company enjoys a reduced complexity involved in generating a statistical report, as well as cost reductions from maintaining one standardized set of data across the enterprise instead of duplicated, redundant data. Employee-generated emails have dropped sharply since more workers can answer their own questions and obtain their own information. The company is also able to better anticipate future events affecting the business and more quickly respond to market stimuli.

Section 2.3 "Systems for Collaboration and Teamwork" Students have probably used most of these systems without even realizing their business value. Your task is to relate these increasingly common technologies to business processes and needs. Discuss how they can use cell phones, instant messaging, social networking sites, and wikis in a business setting to communicate, collaborate, and share ideas with team members, business partners, customers, and suppliers.

One exercise you can use to reinforce the usefulness of team collaboration is to have small student groups explore social networking sites or Twitter to see how many postings by businesses they can find. For instance, Twitter has tweets for Free Honey Bunches of Oats at Walmart and a tweet for an article about General Electric's solar technology. Businesses also make use of the popular YouTube.com to post videos of their products. This exercise will help demonstrate how businesses must constantly adapt their marketing strategies to reach customers. You can also generate a discussion about students' experience on these kinds of sites in relation to business uses and ask them to relate how effective these new methods of engaging customers are.

Table 2-2 (page 60) emphasizes the benefits of collaboration while Figure 2-7 (page 62) highlights the necessity of having the appropriate organization structure and culture, along with the right technology, to successfully use collaboration in an organization. Discuss how the absence of even one of these three can hinder or prevent collaboration. Ask students to draw on their own experiences to compare and contrast firms with a collaborative culture to those without.

Copyright © 2014 Pearson Education, Inc.

Because most of the online collaborative tools listed in Table 2-5 (page 66) are relatively unknown, you can have teams of students explore one or two of them and then present to the class a list of characteristics, capabilities, advantages and disadvantages, for each one.

Many times people and businesses decide which collaborative tools to use based on which ones they are most familiar with rather than which are the most appropriate tool for the task at hand.
You can have student teams evaluate one or more collaborative programs for an organization to which they belong like a sports team, sorority/fraternity, workplace, or even their use in your classroom. Have them use the time/space matrix in Figure 2-8 (page 67) and the information in the section "*Checklist for Managers: Evaluating and Selecting Collaboration Software Tools*" (page 67) to help select the best tool.

Have students explore the use of business wikis first-hand by visiting SAP's Enterprise Solution Wiki at http://wiki.sdn.sap.com/wiki/display/ESpackages/ES+Wiki+Home, or IBM's LotusNotes Wiki at http://www-10.lotus.com/ldd/dominowiki.nsf/. Both wikis will help demonstrate the usefulness of having so much knowledge at your fingertips plus the ease with which companies are gathering, storing, and disseminating knowledge. The home page of IBM's LotusNotes Wiki also has a great list of how to perform various wiki tasks. Students can see how easy it is to navigate wikis by reading these instructions.

Section 2.4. "The Information Systems Function in Business." If possible, arrange a session with the school's information systems department to allow students to see first-hand how such a center works and who is responsible for running the systems. Have the IS staff and students participate in a Question and Answer forum about how typical processes are handled. Many students have a better appreciation of how these complex centers work when they actually see one in operation rather than just reading about it. Stress to students that in all but the smallest of firms these systems are critical to the operational efficiency and sheer survival in a very competitive marketplace.

Most importantly, students should understand that the IS staff is responsible for the well-being of all users in an organization. Users and the IS staff are teammates not polarizing opposites.

Review Questions

1. What are business processes? How are they related to information systems?

Define business processes and describe the role they play in organizations.

A business process is a logically related set of activities that define how specific business tasks are performed. Business processes are the ways in which organizations coordinate and organize work activities, information, and knowledge to produce their valuable products or services.

Copyright © 2014 Pearson Education, Inc.

How well a business performs depends on how well its business processes are designed and coordinated. Well-designed business processes can be a source of competitive strength for a company if it can use the processes to innovate or perform better than its rivals. Conversely, poorly designed or executed business processes can be a liability if they are based on outdated ways of working and impede responsiveness or efficiency.

Describe the relationship between information systems and business processes.

Information systems automate manual business processes and make an organization more efficient. Data and information are available to a wider range of decision-makers more quickly when information systems are used to change the flow of information. Tasks can be performed simultaneously rather than sequentially, speeding up the completion of business processes. Information systems can also drive new business models that perhaps wouldn't be possible without the technology.

2. How do systems serve the different management groups in a business?

Describe the characteristics of transaction processing systems (TPS) and the roles they play in a business.

Transaction processing systems (TPS) are computerized systems that perform and record daily routine transactions necessary in conducting business; they serve the organization's operational level. The principal purpose of systems at this level is to answer routine questions and to track the flow of transactions through the organization.

- At the operational level, tasks, resources, and goals are predefined and highly structured.
- Managers need TPS to monitor the status of internal operations and the firm's relationship with its external environment.
- TPS are major producers of information for other types of systems.
- Transaction processing systems are often so central to a business that TPS failure for a few hours can lead to a firm's demise and perhaps that of other firms linked to it.

Describe the characteristics of management information systems (MIS) and explain how MIS differ from TPS and from DSS.

Middle management needs systems to help with monitoring, controlling, decision-making, and administrative activities.

- MIS provide middle managers with reports on the organization's current performance. This information is used to monitor and control the business and predict future performance.

Copyright © 2014 Pearson Education, Inc.

- MIS summarize and report the company's basic operations using data supplied by TPSs. The basic transaction data from TPS are compressed and usually presented in reports that are produced on a regular schedule.
- MIS serve managers primarily interested in weekly, monthly, and yearly results, although some MIS enable managers to drill down to see daily or hourly data if required.
- MIS generally provide answers to routine questions that have been specified in advance and have a predefined procedure for answering them.
- MIS systems generally are not flexible and have little analytical capability.
- Most MIS use simple routines, such as summaries and comparisons, as opposed to sophisticated mathematical models or statistical techniques.

MIS differs from TPS in that MIS deals with summarized and compressed data from the TPS.

Although MIS have an internal orientation, DSS will often use data from external sources, as well as data from TPS and MIS. DSS supports "what-if" analyses rather than a long-term structured analysis inherent in MIS systems. MIS are generally not flexible and provide little analytical capabilities. In contrast, DSS are designed for analytical purposes and are flexible.

Describe the characteristics of decision-support systems (DSS) and how they benefit businesses.

Decision-support systems (DSS) support nonroutine decision-making for middle managers.

- DSS provide sophisticated analytical models and data analysis tools to support semistructured and unstructured decision-making activities.
- DSS use data from TPS, MIS, and external sources, in condensed form, allowing decision makers to perform "what-if" analysis.
- DSS focus on problems that are unique and rapidly changing; procedures for arriving at a solution may not be fully predefined.
- DSS are designed so that users can work with them directly; these systems include interactive, user-friendly software.

Describe the characteristics of executive support systems (ESS) and explain how these systems differ from DSS.

Executive support systems (ESS) help senior managers address strategic issues and long-term trends, both in the firm and in the external environment.

- ESS address nonroutine decisions requiring judgment, evaluation, and insight because there is no agreed-on procedure for arriving at a solution.
- ESS provide a generalized computing and communications capacity that can be applied to a changing array of problems.

Copyright © 2014 Pearson Education, Inc.

- ESS are designed to incorporate data about external events, such as new tax laws or competitors, but they also draw summarized information from information from internal MIS and DSS.
- ESS are designed for ease-of-use and rely heavily on graphical presentations of data.

3. How do systems that link the enterprise improve organizational performance?

Explain how enterprise applications improve organizational performance.

An organization operates in an ever-increasing competitive and global environment. The successful organization focuses on the efficient execution of its processes, customer service, and speed to market. Enterprise applications provide an organization with a consolidated view of its operations across different functions, levels, and business units. Enterprise applications allow an organization to efficiently exchange information among its functional areas, business units, suppliers, and customers.

Define enterprise systems, supply chain management systems, customer relationship management systems, and knowledge management systems and describe their business benefits.

Enterprise systems integrate the key business processes of an organization into a single central data repository. This makes it possible for information that was previously fragmented in different systems to be shared across the firm and for different parts of the business to work more closely together.

Business benefits include:

- Information flows seamlessly throughout an organization, improving coordination, efficiency, and decision making.
- Gives companies the flexibility to respond rapidly to customer requests while producing and stocking only that inventory necessary to fulfill existing orders.
- Increases customer satisfaction by improving product shipments, minimizing costs, and improving a firm's performance.
- Improves decision making by improving the quality of information for all levels of management. That leads to better analyses of overall business performance, more accurate sales and production forecasts, and higher profitability.

In short, **supply chain management (SCM) systems** help businesses better manage relationships with their suppliers. Objective of SCM: Get the right amount of products from the companies' source to their point of consumption with the least amount of time and with the lowest cost. SCM provide information to help suppliers, purchasing firms, distributors, and logistics companies share information about orders, production, inventory levels, and delivery of products and services so that

Copyright © 2014 Pearson Education, Inc.

they can source, produce, and deliver goods and services efficiently. SCM helps organizations achieve great efficiencies by automating parts of these processes or by helping organizations rethink and streamline these processes. SCM is important to a business because through its efficiency it can coordinate, schedule, and control the delivery of products and services to customers.

Business benefits include:

- Decide when and what to produce, store, and move
- Rapidly communicate orders
- Track the status of orders
- Check inventory availability and monitor inventory levels
- Reduce inventory, transportation, and warehousing costs
- Track shipments
- Plan production based on actual customer demand
- Rapidly communicate changes in product design

Customer relationship management (CRM) systems enable a business to better manage its relationships with existing and potential customers. With the growth of the Web, potential customers can easily comparison shop for retail and wholesale goods and even raw materials, so treating customers better has become very important.

Business benefits include:

- CRM systems provide information to coordinate all the business processes that deal with customers in sales, marketing, and service to optimize revenue, customer satisfaction, and customer retention. This information helps firms identify, attract, and retain the most profitable customers; provide better service to existing customers; and increase sales.
- CRM systems consolidate customer data from multiple sources and provide analytical tools for answering questions such as: What is the value of a particular customer to the firm over his/her lifetime?
- CRM tools integrate a business's customer-related processes and consolidate customer information from multiple communication channels, giving the customer a consolidated view of the company.
- Detailed and accurate knowledge of customers and their preferences helps firms increase the effectiveness of their marketing campaigns and provide higher-quality customer service and support.

Knowledge management systems (KMS) enable organizations to better manage processes for capturing and applying knowledge and expertise. These systems collect all relevant knowledge and experience in the firm, and make it available wherever and whenever it is needed to improve business processes and management decisions. They also link the firm to external sources of knowledge.

Business benefits include:

Copyright © 2014 Pearson Education, Inc.

- KMS support processes for acquiring, storing, distributing, and applying knowledge, as well as processes for creating new knowledge and integrating it into the organization.
- KMS include enterprise-wide systems for managing and distributing documents, graphics, and other digital knowledge objects; systems for creating corporate knowledge directories of employees with special areas of expertise; office systems for distributing knowledge and information; and knowledge work systems to facilitate knowledge creation.
- KMS use intelligent techniques that codify knowledge and experience for use by other members of the organization and tools for knowledge discovery that recognize patterns and important relationships in large pools of data.

Explain how intranets and extranets help firms integrate information and business processes.

Because intranets and extranets share the same technology and software platforms as the Internet, they are easy and inexpensive ways for companies to increase integration and expedite the flow of information within the company (intranets alone) and with customers and suppliers (extranets). They provide ways to distribute information and store corporate policies, programs, and data. Both types of nets can be customized by users and provide a single point of access to information from several different systems. Businesses can connect the nets to transaction processing systems easily and quickly. Interfaces between the nets and TPS, MIS, DSS, and ESS systems provide input and output for users.

4. Why are systems for collaboration and social business so important and what technologies do they use?

Define collaboration and social business and explain why they have become so important in business today.

Collaboration is working with others to achieve shared and explicit goals. It focuses on task or mission accomplishment and usually takes place in a business, or other organizations, and between businesses. Collaboration can be short-lived or longer term, depending on the nature of the task and the relationship among participants. It can be one-to-one or many-to-many.

Social business is part of an organization's business structure for getting things done in a new collaborative way. It uses social networking platforms to connect employees, customers, and suppliers. The goal of social business is to deepen interactions with groups inside and outside a company to expedite and enhance information-sharing, innovation, and decision-making.

Collaboration and social business are important because:

- *Changing nature of work.* More jobs are becoming "interaction" jobs. These kinds of jobs require face-to-face interaction with other employees, managers,

Copyright © 2014 Pearson Education, Inc.

vendors, and customers. They require systems that allow the interaction workers to communicate, collaborate and share ides.

- *Growth of professional work.* Professional jobs in the service sector require close coordination and collaboration.
- *Changing organization of the firm*. Work is no longer organized in a hierarchical fashion as much as it is now organized into groups and teams who are expected to develop their own methods for accomplishing tasks.
- *Changing scope of the firm.* Work is more geographically separated than before.
- *Emphasis on innovation.* Innovation stems more from groups and teams than it does from a single individual.
- *Changing culture of work and business*. Diverse teams produce better outputs, faster, than individuals working on their own.

List and describe the business benefits of collaboration and social business.

The general belief is that the more a business firm is collaborative in nature, the more successful it will be and that collaboration within and among firms is more essential than in the past. The overall economic benefits of collaboration and social business are significant.

The business benefits of collaboration and social business are listed in Table 2-3 (page 61):

- *Productivity:* people working together accomplish tasks faster, with fewer errors, than those working alone.
- *Quality:* people can communicate errors and correct them faster when working together versus working alone.
- *Innovation:* people working in groups can generate more innovative ideas than if they were working alone.
- *Customer service:* people working in teams can solve customer complaints and issues faster and more effectively versus working in isolation.
- *Financial performance:* collaborative firms have superior sales, sales growth, and financial performance.

Describe a supportive organizational culture and business processes for collaboration.

Historically, organizations were built on hierarchies which did not allow much decision making, planning, and organizing at lower levels of management or by employees. Communications were generally vertical through management levels rather than horizontal between groups of employees.

A collaborative culture relies on teams of employees to implement and achieve results for goals set by senior managers. Policies, products, designs, processes, and systems are much more dependent on teams at all levels of the organization to devise, to create, and to build. Rather than employees being rewarded for individual results,

Copyright © 2014 Pearson Education, Inc.

they are rewarded based on their performance in a team. The function of middle managers in a collaborative business culture is to build the teams, coordinate their work, and monitor their performance. In a collaborative culture, senior management establishes collaboration and teamwork as vital to the organization, and it actually implements collaboration for the senior ranks of the business as well.

List and describe the various types of collaboration and social business tools.

Some of the more common enterprise-wide information systems that businesses can use to support interaction jobs include:

- Internet-based collaboration environments like Lotus Notes, Groove, and WebEx provide online storage space for documents, team communications (separated from email), calendars, and audio-visual tools members can use to meet face-to-face.
- Email and Instant Messaging (IM) are reliable methods for communicating whenever and wherever around the globe.
- Cell phones and wireless handhelds give professionals and other employees an easy way to talk with one another, with customers and vendors, and with managers. These devices have grown exponentially in sheer numbers and in applications available.
- Social networking is no longer just "social." Businesses are realizing the value of providing easy ways for interaction workers to share ideas and collaborate with each other.
- Wikis are ideal tools for storing and sharing company knowledge and insights. They are often easier to use and cheaper than more proprietary knowledge management systems. They also provide a more dynamic and current repository of knowledge than other systems.
- Virtual worlds house online meetings, training sessions, and "lounges" where real-world people meet, interact, and exchange ideas.
- Google Apps/Google sites and cloud collaboration allow users to quickly create online group-editable Web sites that include calendars, text, spreadsheets, and videos for private, group, or public viewing and editing.
- Microsoft SharePoint software makes it possible for employees to share their Office documents and collaborate on projects using Office documents as the foundation.

5. What is the role of the information systems function in a business?

Describe how the information systems function supports a business.

The information systems department is the formal organizational unit responsible for information technology services. The information systems department is responsible for maintaining the hardware, software, data storage, and networks that comprise the firm's IT infrastructure.

Copyright © 2014 Pearson Education, Inc.

Compare the roles played by programmers, systems analysts, information systems managers, the chief information officer (CIO), chief security officer (CSO), and chief knowledge officer (CKO).

- Programmers are highly trained technical specialists who write the software instructions for computers.
- Systems analysts constitute the principal liaisons between the information systems groups and the rest of the organization. The systems analyst's job is to translate business problems and requirements into information requirements and systems.
- Information systems managers lead teams of programmers and analysts, project managers, physical facility managers, telecommunications mangers, or database specialists.
- Chief information officer is a senior manager who oversees the use of information technology in the firm.
- Chief security officer is responsible for information systems security in the firm and has the principle responsibility for enforcing the firm's information security policy. The CSO is responsible for educating and training users and IS specialists about security, keeping management aware of security threats and breakdowns, and maintaining the tools and policies chosen to implement security.
- Chief knowledge officer helps design programs and systems to find new sources of knowledge or to make better use of existing knowledge in organizational and management processes.

Discussion Questions

1. **How could information systems be used to support the order fulfillment process illustrated in Figure 2-1? What are the most important pieces of information these systems should capture? Explain your answer.**

   Today's systems are built to electronically coordinate all the business functions in an enterprise. The sales function begins the process by completing a sales order, electronically inputting the data into the system. The sales system updates daily sales totals and decreases inventory. The accounting department electronically receives the order and runs a credit check. If the credit is not approved, the system sends an exception notification to an accounting specialist and the sales person. If credit is approved, the order is sent to the manufacturing and production system and product assembly begins. When the product is completed, electronic shipping documents are prepared and logistics is notified. When the product is shipped, electronic notifications are sent to Sales, Manufacturing and Production, Accounting, and the customer. The system electronically bills the customer.

2. **Identify the steps that are performed in the process of selecting and checking a book out from your college library and the information that flows among these activities. Diagram the process. Are there any ways this process could be**

Copyright © 2014 Pearson Education, Inc.

improved to improve the performance of your library or your school? Diagram the improved process.

Students should rely on information from Section 2-1, Business Processes and Information Systems, and specifically the information from "*Business Processes*," to answer this question. Figure 2-2 (page 47) should serve as a guide for diagramming the library fulfillment process as it currently may exist. Information from "*How Information Technology Enhances Business Processes"* can help students diagram the improved process.

3. **Use the Time/Space Collaboration and Social Tool Matrix to classify the collaboration and social technologies used by TELUS?**

   First, students should use Table 2-5 (page 66) to evaluate various enterprise social networking software capabilities, and Figure 2-8 (page 67) to help them choose the most appropriate collaboration and social tools for the tasks. They should then use the "to-do" list (page 68) to make sure they choose the correct collaboration software at an affordable price and within the team's risk tolerance.

   TELUS employees can take advantage of these social networking capabilities to learn at their own pace and time:
   - Profiles
   - Content sharing
   - Feeds and notifications
   - Tagging and social bookmarking

Hands-on MIS Projects

Management Decision Problems

1. **Don's Lumber Company:** The price of lumber and other building materials are constantly changing. When a customer inquiries about the price on pre-finished wood flooring, sales representatives consult a manual price sheet and then call the supplier for the most recent price. The supplier in turn uses a manual price sheet, which has been updated each day. Often the supplier must call back Don's sales reps because the company does not have the newest pricing information immediately on hand. Assess the business impact of this situation, describe how this process could be improved with information technology, and identify the decisions that would have to be made to implement a solution. Who would make those decisions?

Manually updating price sheets leads to slower sales processes, pricing errors if sales reps are using outdated information, and customer dissatisfaction due to delays in obtaining information. By putting the data online using an extranet and updating it as necessary, sales reps consult the most current information immediately. That leads to faster sales and more satisfied customers. Necessary decisions include how much

Copyright © 2014 Pearson Education, Inc.

information to make available online, who will have access to it, and how to keep the information secure. Senior management would likely make these decisions.

2. **Henry's Hardware:** Owners do not keep automated, detailed inventory or sales records. Invoices are not maintained or tracked (other than for tax purposes). The owners use their own judgment in identifying items that need to be reordered. What is the business impact of this situation? How could information systems help Henry and Kathleen run their business? What data should these systems capture? What decisions could the systems improve?

   The business impact includes lost sales, over- and under-ordering products, improper sales accounting and more costly inventory control. An information system could capture data that allows owners to maintain proper inventories, order only those products needed, and ensure proper sales accounting. Decisions on pricing, product levels, and inventory replenishment could be vastly improved based on data and not a best-guess venture.

Improving Decision Making: Using a Spreadsheet to Select Suppliers

Software skills: Spreadsheet date functions, data filtering, DAVERAGE functions.
Business skills: Analyzing supplier performance and pricing.

Although the format of the student's answers will vary, a suggested solution can be found in the Microsoft Excel File named: *MIS13ch02_solutionfile.xls.*

This exercise requires some student knowledge of spreadsheet database functions. At a minimum, students should know how to sort the database by various criteria such as item description, item cost, vendor number, vendor, name, or A/P terms. Students may need to be told that A/P Terms is expressed as the number of days that the customer has to pay the vendor for a purchase. In other words, 30 designates net 30 days. The vendor that allows customers the longest amount of time to pay for an order would, of course, offer the most favorable payment terms.

Students will need to add additional columns for calculating the actual delivery time for each order and the number of days the delivery is late. The Actual Delivery Time can be calculated by subtracting the Promised Ship Date from the Arrival Date. The number of days late can be calculated by subtracting the Promised Transit Time from the Actual Delivery Time. If the number of days late is negative, it indicates that the order arrived early.

These numbers are useful when trying to determine who is the vendor with the best on-time delivery track record. Students can use the DAVERAGE function to determine the average delivery time for each vendor. Students can also use one of the database functions to determine the vendor with the best accounts payable terms. To determine the vendor with the lowest prices for the same item when it is supplied by multiple vendors, students can filter the database using the item description. This filtered list can then be

Copyright © 2014 Pearson Education, Inc.

sorted by item cost and vendor number.

Achieving Operational Excellence: Using Internet Software to Plan Efficient Transportation Routes

Obviously, the shortest amount of time is more cost effective than the shortest distance since there's only a difference of 27.05 miles. Saving the 27 miles will take 2 hours, 24 minutes longer. Encourage students to use the Advanced Tools option to quickly change back and forth between "shortest time" and "shortest distance." Only to show how convenient these kinds of online tools are, ask students to use a regular map and calculator to draw out the two routes. (Lots of ughs!)

Shortest distance: 10 hours, 11 minutes; 506.56 miles
Shortest time: 8 hours, 35 minutes; 533.61 miles

Copyright © 2014 Pearson Education, Inc.

Video Case Questions

You will find a video case illustrating some of the concepts in this chapter on the Laudon Web site at **www.pearsonhighered.com/laudon** along with questions to help you analyze the case.

Collaboration and Teamwork: *Describing Management Decisions and Systems*

With a team of three or four other students, find a description of a manager in a corporation in *Business Week, Fortune,* the *Wall Street Journal,* or another business publication or do your research on the Web. Gather information about what the manager's company does and the role he or she plays in the company. Identify the organizational level and business function where this manager works. Make a list of the kinds of decisions this manager has to make and the kind of information that manager would need for those decisions. Suggest how information systems could supply this information. If possible, use Google Sites to post links to Web pages, team communication announcements, and work assignments. Try to use Google Docs to develop a presentation of your findings for the class.

Group answers will vary because students will select different companies and different managerial levels. The major element of this project is to make sure the students select the appropriate type of information system for the level of management that they are evaluating.

Clearly, students would not list TPS as a system that would be used by a senior manager. It would be acceptable if they suggested a senior manager using an MIS, DSS, or ESS. What should be apparent in the answer is that an executive senior manager is mainly focused on the long-term direction and viability of the company. A few things that students might mention would be that a senior executive would be concentrating on issues such as plant expansion or closures, foreign market opportunities, or new markets at home, changes in market trends and interest rates, overall economic outlook, changes in stocks prices, threats, or opportunities that may be taking place in the market, and political changes.

Case Study: *Should Companies Embrace Social Business?*

1. **Identify the management, organization, and technology factors responsible for slow adoption rates of internal corporate social networks.**

   Management: Employees that are used to collaborating and doing business in more traditional ways need an incentive to use social software. Most companies are not providing that incentive: Only 22 percent of social software users believe the technology to be necessary to their jobs.

Copyright © 2014 Pearson Education, Inc.

Organization: Companies that have tried to deploy internal social networks have found that employees are used to doing business in a certain way and overcoming the organizational inertia can prove difficult. Enterprise social networking systems were not at the core of how most of the surveyed companies collaborate. About half of the survey respondents said that internal social networks had "very little impact" on employee retention, the speed of decision-making, or the reduction of meetings.

Technology: Ease of use and increased job efficiency are more important than peer pressure in driving adoption of social networking technologies. A majority of IT professionals consider their own internal social networks to be merely average or below average and the biggest reason they cite is low adoption rates on the part of employees. Content on the networks needs to be relevant, up-to-date, and easy to access; users need to be able to connect to people that have the information they need, and that would otherwise be out of reach or difficult to reach.

2. Why have each of the companies described in this case been successful in implementing internal social networks? Explain your answer.

One company, CSC, took a very passive approach when it implemented its social business networking software platform. The company allowed users to form groups on their own. Group presidents and other executives set an example by blogging with the social tool. The company also offered a "virtual water cooler" for non-work-related topics to help employees try out the tool in a more relaxed setting. Employee adoption is now at 100 percent, with significant amounts of frequently sought intellectual property generated within the network's communities and groups.

Yum! Brands, the world's largest restaurant company, took the opposite implementation approach by marketing the network to its own employees as it would with any of its products. It expects 100 percent adoption within the first year of its rollout. The system has helped eliminate redundant resources and allows users to upload and download documents.

The third company, Red Robin hamburger restaurant chain, took a viral approach to drive adoption of its social networking system. The company's CIO sees a movement away from email and collaboration portals like SharePoint toward social networking and texting. He wants to let people create conversations, perform status updates, upload and share files, and set up workgroups for small project teams. Although usage is not as high as executives would like, people are experimenting with the system.

3. Should all companies implement internal enterprise social networks? Why or why not?

Yes, companies should implement internal enterprise social networks, if for no other reason than they are cheaper and easier than other systems to operate and reduce expenses in other areas. The systems also improve productivity, in some cases

Copyright © 2014 Pearson Education, Inc.

dramatically. Companies should provide incentives if they must to encourage adoption of the new collaboration methods. Executives should be the first to use them which will speed their adoption. Executives must also tie these networks to financial results. Management must also encourage the necessary organizational cultural changes to help make the social networking tools a success.

Copyright © 2014 Pearson Education, Inc.