Chapter 2
Global E-Business and Collaboration

Student Learning Objectives

2-1 What are business processes? How are they related to information systems?

2-2 How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance?

2-3 Why are systems for collaboration and social business so important, and what technologies do they use?

2-4 What is the role of the information systems function in a business?

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Key Terms

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

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Teaching Suggestions

The opening vignette, "Enterprise Social Networking helps ABB innovate and grow," provides an outstanding example of how the company embraced social business tools to significantly reduce its expenses while it also increased the amount of learning and education available to its employees. These technologies are the very same ones every business needs to succeed.

Collaboration and sharing information are essential for ABB's continued growth and business success among its 135,000 employees in 100 countries. Even though the company already had an intranet, it was too static and outmoded to meet its current needs for empowering and energizing employees. Employees were storing information in a variety of places other than the intranet including wikis, local file servers, and other knowledge platforms.

ABB needed a central resource that would support dynamic knowledge sharing and give employees tools to help them work more closely together. A dynamic and social-media enabled platform called Inside+ gave ABB employees a single entry point to all the information and tools they need including Microsoft Yammer, Office 365, and SharePoint.

Inside+ integrates all the key internal platforms that employees use while making Yammer conversations searchable through archives. Employees use the new tools to collaborate on projects, share ideas, and discover people in other department with useful expertise. Discussions are more productive and have improved employee engagement. Staff can access Inside+ from smartphones and tablets making them more productive. The company has also saved on conference costs using online tools. And thanks to the new system, many more employees feel closely involved with the business as a whole.

Section 2-1, "What are business processes? How are they related to 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 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, "How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance?" 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.

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 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 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: Organizations: New Systems Help Plan International Manage Its Human Resources

Case Study Questions

1. Describe the problem faced by Plan International. What management, organization, and technology factors contributed to this problem?

Plan International is a worldwide organization that promotes rights and opportunities for children in need. While headquartered in the United Kingdom, it has operations in 70 countries and has worked with 81.5 million children in more than 86,676 communities. It requires a highly coordinated approach when emergencies strike. It must locate and deploy the most appropriate resources wherever they are required within hours or days.

Management: Plan's old system was outdated and decentralized, causing much of the work to be done manually. It kept track of employees by using a patchwork of 30 human resources systems, spreadsheets, and documents. There was no way for individual employees to update their own records with new training or experiences.

Organization: Plan International did not have a way to track the skills people bring when they are hired and any additional training or experiences they have acquired for disaster response emergencies.

Technology: Plan International must sift through data on all its 10,000 aid workers in 70 countries to see which people have the appropriate skills and experience in medical aid, child protection, education, and shelter management. When a disaster struck, Plan had to send an email to everyone, asking whether staff knew any people who could speak the appropriate language, had the appropriate disaster management skills, and were available to help.

2. Describe the system solution to this problem. Describe the types of systems used for the solution.

Plan now has the ability to see data about all its workers' skills the moment an emergency occurs because of its new human resources systems. The cloud-based HR system was implemented in only 16 weeks at Plan's headquarters and all international regions were brought onto the system by 2014. It is accessible through the Internet for all users. Employees can now update all their own information, creating an easily searchable directory that every employee can access.

3. Why is human resources so important at Plan International?

When disaster strikes, it is people who make the difference in the recovery. Because Plan International did not have a way to track experience, training, skills, or expertise of its employees, it was not able to deploy the appropriate resources to the disaster site in a timely manner.

4. How did these systems improve operational efficiency?

Plan International's new human resources systems provide a bird's eye view of the entire workforce. Managers know immediately how many people work for Plan, where they are, what skills they possess, their job responsibilities, and their career paths. Employees can access their own records online and update information such as address, family details, and emergency contacts. Plan can also show its donors exactly how their contributions were spent and what the results are.

Much of this information used to take days or months to compile. Now all it takes is the press of a button. The new HR system saves valuable human resources staff time that can be directed towards more value-adding work.

5. How did these systems improve decision-making? Give examples of two decisions improved by Plan's new systems.

With the new technology Plan International staff can identify and dispatch relief workers to disaster areas within hours. Two examples of improved decision making are:

--Workers can now be deployed to disaster sites within 72 hours. Being able to deploy staff to emergencies so rapidly has saved more lives.

--The improved response time has helped Plan International secure new sources of funding by giving it more credibility with governments, corporations, and other sources of grants and donations.

Section 2-3 "Why are systems for collaboration and social business so important, and what technologies do they use?" 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 emphasizes the benefits of collaboration while Figure 2-7 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.

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 and the information in the section "*Checklist for Managers: Evaluating and Selecting Collaboration Software Tools*" 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 Notes and Domino 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.

Interactive Session: Technology: Cisco IX5000: What State-of-the-Art Telepresence can do for Collaboration

Case Study Questions

1. **Describe the capabilities of Cisco's IX5000 telepresence system. How do they promote collaboration and innovation?**

The Cisco's IX5000 immersive telepresence system offers leading-edge telepresence and is much more affordable and easier to use than in the past. It is sleekly sculpted, with three 4K ultra-high-definition cameras clustered discreetly above three 70-inch LCD screens. The cameras provide crisp, high-definition video. Theater-quality sound emanates from 18 custom speakers and one powerful subwoofer, creating a high-quality lifelike collaboration experience for 8 to 18 people. Video and other content can move across any of the screens.

The system creates a more natural setting than previous systems because the camera and graphic processors are able to capture the whole room in fine detail so you can stand up and move around or go the whiteboard. Using the 4K cameras, the IX 5000 creates an image four times larger than what's actually needed to fill the system's three screens. The images can be cropped down to show participants seated behind their tables, but when someone stands up, the crop is removed to show both standing and sitting participants.

2. **Why would a company like Produban want to invest in a telepresence system such as Cisco's IX5000? How are videoconferencing technology and telepresence related to Produban's business model and business strategy?**

With more than 5,500 employees working in nine different countries, Produban services more than 120 companies in areas such as data center design and operation, IT infrastructure design and operation as a service, IT platform design and operation as a service, technology risk management and business continuity, and management of end user computing mobility and self-service management. The company is dedicated to technology innovation and continuous improvement.

By using Cisco's IX5000 system Produban brings people from all over the world together to make better decisions faster and more efficiently. Over the years it has invested in 76 Cisco TelePresence rooms worldwide. The IX500 technology has a lower total cost of ownership and can be installed into a space as small as 19 feet by 14 feet. With 50

percent less power usage, 50 percent less data transmission capacity, and half the installation time of earlier systems (only eight hours), the IX5000 reduces TCO by 30 percent over three years.

Because Produban's business model and strategy is to maximize technology innovation and continuous improvement for other companies, using the latest telepresence technology for its own inner workings fits.

3. What kinds of other companies might benefit from a telepresence service such as IX5000? Why?

Other companies that might benefit from using telepresence services are those who have operations in multiple locations like vehicle manufacturers or household product makers and distributors. When problems or opportunities arise in one location, people can meet and resolve the situation more quickly and efficiently than they would be having to travel in person to the location.

Section 2-4. "What is the role of the information systems function in a 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 IT 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 IT staff is responsible for the well-being of all users in an organization. Users and the IT staff are teammates not polarizing opposites.

Review Questions

2-1 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 defines 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.

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. (Learning Objective 2-1: What are business processes? How are they related to information systems? AACSB: Application of knowledge.)

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. (Learning Objective 2-1: What are business processes? How are they related to information systems? AACSB: Application of knowledge.)

2-2 How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance?

Describe the characteristics of transaction processing systems (TPS) and the roles they play in a business, and how systems that link the enterprise improve organization performance.

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.

(Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Application of knowledge.)

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.

- 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. (Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Application of knowledge.)

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.

(Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Application of knowledge.)

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.
- 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.

(Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Application of knowledge.)

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. (Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Analytical thinking.)

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 flowing seamlessly throughout an organization, improving coordination, efficiency, and decision making
- Giving companies the flexibility to respond rapidly to customer requests while producing and stocking only that inventory necessary to fulfill existing orders
- Increasing customer satisfaction by improving product shipments, minimizing costs, and improving a firm's performance
- Improving 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 provides 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 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:

- 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.

(Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Application of knowledge.)

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. (Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Analytical thinking.)

2-3 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, 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 less often organized in a hierarchical fashion because 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.

(Learning Objective 2-3: Why are systems for collaboration and social business so important, and what technologies do they use? AACSB: Application of knowledge.)

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:

- *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.

(Learning Objective 2-3: Why are systems for collaboration and social business so important, and what technologies do they use? AACSB: Application of knowledge.)

Describe a supportive organizational culture and business processes for collaboration.

Historically, organizations were built on hierarchies that 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, 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. (Learning Objective 2-3: Why are systems for collaboration and social business so important, and what technologies do they use? AACSB: Application of knowledge.)

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 IBM Notes 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 among 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 tools, cyberlockers, and cloud collaboration allow users to quickly create online group-editable websites 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.

(Learning Objective 2-3: Why are systems for collaboration and social business so important, and what technologies do they use? AACSB: Application of knowledge.)

2-4 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. (Learning Objective 2-4: What is the role of the information systems function in a business? AACSB: Application of knowledge.)

Compare the roles played by programmers, systems analysts, information systems managers, the chief information officer (CIO), chief security officer (CSO), chief data officer (CDO), 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.
- The chief information officer is a senior manager who oversees the use of information technology in the firm.
- The 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.
- The chief data officer is responsible for enterprise-wide governance and utilization of information to maximize the value the organization can realize from its data. The CDO ensures the firm is collecting appropriate data, analyzing it appropriately, and using the results to support business decisions.

- The 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.

(Learning Objective 2-4: What is the role of the information systems function in a business? AACSB: Analytical thinking, Application of knowledge.)

Discussion Questions

2-5 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.

Student answers to this question will vary.

2-6 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 improved to improve the performance of your library or your school? Diagram the improved process.

Student answers to this question will vary.

2-7 Use the time/space collaboration and social tool matrix to classify the collaboration and social technologies used by ABB.

Student answers to this question will vary.

Hands-on MIS Projects

Management Decision Problems

2-8 Don's Lumber Company: The price of lumber and other building materials are constantly changing. When a customer inquires 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 would lead to faster sales and more satisfied customers. Necessary decisions include how much 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. (Learning Objective 2-1: What are business processes? How are they related to information systems? AACSB: Analytical thinking, Reflective thinking, Application of knowledge.)

2-9 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. (Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Analytical thinking, Application of knowledge.)

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

2-10 Although the format of the student's answers will vary, a suggested solution can be found in the Microsoft Excel File named: *MIS15ch02_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 sorted by item cost and vendor number. (Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Written and oral communication, Analytical thinking, Application of knowledge.)

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

Software skills: Internet-based software
Business skills: Transportation planning

2-11 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!) (Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? AACSB: Analytical thinking, Application of knowledge.)

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

Collaboration and Teamwork Project

2-12 In MyMISLab, you will find a Collaboration and Teamwork Project dealing with the concepts in this chapter. You will be able to use Google Drive, Google Docs, Google Sites, Google +, or other open source collaboration tools to complete the assignment.

Case Study: Social Business: Full Speed Ahead or Proceed with Caution?

2-13 Identify the management, organization, and technology factors responsible for impeding adoption 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 a small number of social software users believe the technology to be necessary to their jobs.

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.

Technology: Ease of use and increased job efficiency are more important than peer pressure in driving adoption of social networking technologies. 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. (Learning Objective 2-1: What are business processes? How are they related to information systems? Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? Learning Objective 2-3: Why are systems for collaboration and social business so important, and what technologies do they use? AACSB: Analytical thinking, Application of knowledge.)

2-14 Compare the experiences implementing internal social networks of the two organizations. Why were they successful? What role did management play in this process?

Bayer Material Sciences made social collaboration a success by making the tools more accessible, demonstrating the value of these tools in pilot projects, employing a reverse mentoring program for senior executives, and training employee experts to spread know-how of the new social tools and approaches within the company and demonstrate their usefulness.

Bayer Material Sciences uses IBM Connections, a social platform for collaboration, cooperation, and consolidation of social networks. It features tools for employee profiles, communities of people with common interests and expertise; blogs; wikis; viewing, organizing, and managing tasks; forums for exchanging ideas with others; and polls and surveys of customers and fellow employees along with a home page for each user to see what is happening across that person's social network and access important social data.

A year after the new collaboration tools were introduced, adoption had plateaued. Working with company information technology and business leaders, management established an ambitious set of goals for growing social business along with seven key performance indicators (KPIs) to measure success. The goals included fostering global collaboration, creating stronger networks across regions and departments, creating a less

hierarchical culture of sharing, and reducing the confusion of which tools are intended for which job.

These efforts are now paying off: 50 percent of employees are now routinely active in the company's enterprise social network. Bayer Material Sciences has benefited from faster knowledge flows, increased efficiency, and lower operating costs.

Carlo's Bake Shop has 10 locations in New Jersey, New York, and Las Vegas, and people can order custom cakes from its website. Carlo's implemented Salesforce CRM with the Salesforce social networking tool Chatter. Some employees and members of Carlo's management team initially resisted the new system. They believed that because they already used e-mail, Facebook, and Twitter, they didn't need another social tool. The company was able to demonstrate the benefits of social business, and bakers and Chatter changed the way they worked.

Carlo's produces a very large volume of custom cakes from a 75,000-square-foot commissary in Jersey City operating around the clock. Chatter is now the de facto standard for internal communication from order to delivery. If a key cake decorator is away, that person is still included in the communication and discussion process. Upon returning, the decorator can view any changes in color, shape, or design.

Because Carlo's employees now work more socially, errors are down by more than 30 percent, and crews are able to produce cakes and other custom products more rapidly and efficiently. Managers have access to a data and analytics dashboard that allows them to instantly view store performance and which products are hot and which are not. They can see sales and transaction patterns in depth. As Carlo's expands nationally and perhaps globally, the ability to connect people and view order streams is critical. Social business tools have transformed an organization that was gradually sinking under the weight of paper into a highly efficient digital business. (Learning Objective 2-2: How do systems serve the different management groups in a business, and how do systems that link the enterprise improve organizational performance? Learning Objective 2-3: Why are systems for collaboration and social business so important, and what technologies do they use? AACSB: Analytical thinking, Application of knowledge.)

2-15 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 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. (Learning Objective 2-1: What are business processes? How are they related to information systems? Learning Objective 2-3: Why

are systems for collaboration and social business so important, and what technologies do they use? AACSB: Analytical thinking, Application of knowledge.)

2-16 Identify and describe the capabilities of enterprise social networking software. Describe how a firm could use each of these capabilities.

Visit MyMISLab for suggested answers.

2-17 Describe the systems used by various management groups within the firm in terms of the information they use, their outputs, and groups served.

Visit MyMISLab for suggested answers.

For an example illustrating the concepts found in this chapter, view the videos in mymislab.com.