

Chapter 2

Global E-Business and Collaboration

Learning Objectives

- 2-1 What major features of a business are important for understanding the role of information systems?
- 2-2 How do systems serve different management groups in a business, and how do systems that link the enterprise improve organizational performance?
- 2-3 Why are systems for collaboration, social business, and knowledge management so important, and what technologies do they use?
- 2-4 What is the role of the information systems function in a business?
- 2-5 How will MIS help my career?

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Chapter Outline

- 2-1 *What major features of a business are important for understanding the role of information systems?*
 - Organizing a Business: Basic Business Functions
 - Business Processes
 - Managing a Business and Firm Hierarchies
 - The Business Environment
 - The Role of Information Systems in a Business
- 2-2 *How do systems serve different management groups in a business, and how do systems that link the enterprise improve organizational performance?*
 - Systems for Different Management Groups
 - Systems for Linking the Enterprise
 - E-Business, E-Commerce and E-Government
- 2-3 *Why are systems for collaboration, and social business, and knowledge management so important, and what technologies do they use?*
 - 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
 - Systems for Knowledge Management
- 2-4 *What is the role of the information systems function in a business?*
 - The Information Systems Department
 - Information Systems Services
- 2-5 *How will MIS help my career?*

Key Terms

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

Business, 41	Information systems department, 66
Business intelligence, 48	Information systems managers, 66
Business processes, 42	Interorganizational system, 53
Chief data officer (CDO), 67	Knowledge management systems (KMS), 53
Chief information officer (CIO), 66	Knowledge workers, 44
Chief knowledge officer (CKO), 67	Management information systems (MIS), 48
Chief privacy officer (CPO), 66	Middle management, 44
Chief security officer (CSO), 66	Operational management, 44
Collaboration, 56	Portal, 50
Customer relationship management (CRM) systems, 53	Production or service workers, 44
Data workers, 44	Programmers, 66
Decision-support systems (DSS), 48	Senior management, 44
Digital dashboard, 51	Social business, 57
E-government, 55	Structured knowledge, 65
Electronic business (e-business), 55	Supply chain management (SCM) systems, 52
Electronic commerce (e-commerce), 55	Systems analysts, 66
End users, 67	Tacit knowledge, 65
Enterprise applications, 51	Teams, 56
Enterprise content management (ECM) systems, 65	Telepresence, 60
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Executive support systems (ESS), 50	

Teaching Suggestions

The opening vignette, "Enterprise Social Networking Transforms Sharp Corporation into a More Innovative Connected Organization," provides an outstanding example of how the company embraced social business tools to improve its odds for success, and solidify its commitment to using unique innovative technology to contribute to the culture and welfare of individuals throughout the world. These technologies are the very same ones every business needs to succeed.

Sharp was facing stiff competition from Asian competitors and looked to ways to improve its business processes and organizational communication. Sharp, employees 50,000 people worldwide and the large, centralized firm with a traditional hierarchical culture made it difficult for employees to experiment and innovate on their own. Directives were only flowing downward, and the company's younger employees were looking for opportunities to share ideas and opinions freely.

Sharp implemented Yammer, Microsoft's enterprise social networking platform for internal business uses, which enables employees to create groups to collaborate on projects and share and edit documents. It also includes a news feed that allows employees to easily learn what's happening company wide.

By using Yammer, employees share updates, ask for feedback, and connect volunteers around improvement initiatives. One project resulted in a 60 percent simplification of a key quality process that saved the company thousands of euros and reduced overall end-to-end process time.

Within months of implementation, over 10,000 users within the company were using Yammer. The system has helped improved the flow of information in both directions (i.e., management to rank-in-file-employees) with some department managers using Yammer to solicit input from employees regarding potential technologies that could be implemented in the organization to improve process and business efficiencies.

Section 2-1: What major features of a business are important for understanding the role of 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 2-2 (Page 43) to compare how the order fulfillment process can be accomplished sequentially, as the figure shows, versus simultaneously, as a new information system would allow.

The explanation of firm hierarchies sets the basis for the rest of the text as it explains the various levels of management. Senior management requires a different type of information than do middle management, operational management, knowledge workers, data workers, and production or service workers. Throughout the text, students will need this information to understand how and why each type of information system is necessary.

Section 2-2: How do systems serve 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	Interactive; simulations; analysis	Professionals, staff managers

	analysis tools.		
Executive Support Systems (ESS)	Aggregate data; external, internal	Projections; responses to queries	Senior managers

It's likely that students' main encounter will be with TPS systems when they first begin their careers. Stress the importance of accurate data at the TPS level since 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.

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 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 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: The City of Mississauga Goes Digital

Case Study Questions

1. Describe the problems the City of Mississauga hoped to address using digital technology.

The City of Mississauga is facing a changing demographic with fewer middle-income individuals and more low-income individuals. As such, management has a vision for all residents to have the advantages that access to digital technology provides.

The city is also working to move to a paperless city as much as possible. Further they are interested in doing a better job of tracking buses and other city vehicles to become more efficient and effective. Finally, management is interested in providing improved traffic flow and safety with improved traffic intersections.

2. What technologies did Mississauga employ for a solution? Describe each of these technologies and the role each played in a solution.

City employees have broken down Mississauga into 23 defined communities with one hub center and 500 mobility kits for residents with future expansions anticipated. This effort will help provide better access to digital technology for all residents regardless of income levels.

To help go paperless and reduce the need for travel, the city is helping to provide infrastructure needed to encourage videoconferencing where residents can participate in meetings remotely.

City employees have updated its vehicles to allow for real-time updates on location and other travel variables. The real-time snowplow information is a unique way to better inform the public and track activities using onboard sensors that indicate when blades are being used. Finally, Mississauga implemented a new high-capacity fiber optic system to improve over 700 traffic intersections.

3. What people, organization, and technology issues did the City of Mississauga have to address in developing a solution?

The City of Mississauga appeared to have very effective individuals working on various technology projects. In some cases, city officials collaborated with other municipalities which required additional coordination and integration efforts. The city also worked with businesses to partner on initiatives to create and support a more versatile workplace.

4. How did the technologies in this case improve operations and decision making at the City of Mississauga?

The technologies in this case have helped transform the City of Mississauga as a destination to attract a younger and motivated workforce. Improved operations and decision making were particularly recognized in tracking city vehicles. The real-time information about bus locations was used for timing maintenance and warranties to reduce downtime. In addition, location data about bus locations and routes is being provided to the public to improve travel schedules. The real-time information provided by the sensors on the snowplows provided management with data to help make better decisions and potentially a safer environment during storms.

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

Section 2-3: Why are systems for collaboration, social business, and knowledge management 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 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' experiences 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 58) describes important application of social business inside and outside the firm. Because some of these applications 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.

Table 2.3 (Page 58) emphasizes the benefits of collaboration and social business while Figure 2.10 (Page 59) 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 2.11 (Page 64) and the information in the section "*Checklist for Managers: Evaluating and Selecting Collaboration Software Tools*" to help select the best tool.

Enterprise content management (ECM) systems help manage company knowledge including semistructured, semistructured, and unstructured types of information. Year ago, statistics were particularly valuable because companies often didn't have enough data to make decisions. As such, they used statistics based on samples of the population data. We still use statistics, but today, many companies have too much data, and EMCs help to capture, store, retrieve, distribute, and preserve vast amounts of data.

Interactive Session: Technology: Videoconferencing: Something for Everyone

Case Study Questions

- 1. Compare the capabilities of the videoconferencing tools described in this case. 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 high-definition video and theatre-quality sound, creating a high-quality lifelike collaboration experience for 8 to 18 people. Video and other content can move across any of the screens.

Zoom provides a less expensive and easier to use cloud-based option for online video and audio conference, collaboration, chat, screen-sharing, and webinars across various devices. Zoom provides a free basic version for up to 100 participants and for around \$20 per month offer services that can accommodate up to 1,000 participants and 10,000 viewers.

Videoconferencing is becoming a tool of choice to promote collaboration and innovation as they allow individuals to manage business processes and to connect and collaborate with others around the world.

- 2. How is videoconferencing related to the business models and business strategies of the organizations described in this case?**

Nepris uses Zoom to connect teachers with industry experts to help make the instructional experience more immersive with real-world application. Zoom provides a reasonably priced option to allow Nepris to compete in this niche space.

FCTI, which is a leading US ATM network and service provider, also uses Zoom for video conferencing. The goal is to help employees collaborate more effectively than email, text messaging, or phone calls.

- 3. Describe the specific ways in which videoconferencing technology helped each of the organizations in this case improve their operations and decision making.**

Zoom provides both companies with the opportunity to conference via tablets and smartphones. As such, both companies can participate in meetings and collaborations from remote locations. In the case of

Nepri, it allows experts to participate with instructors while accommodating the industry expert's busy, and often remote, schedules.

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

Section 2-4: What is the role of the information system's 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 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.

Section 2-5: How will MIS help my career? addresses how the chapter's elements and information can help in securing a good job as a sales support specialist. These types of jobs are becoming more popular as information technology becomes more important in the workplace.

Review Questions

2-1 What major features of a business are important for understanding the role of information systems?

Define a business and describe the major business functions.

A business is a formal organization whose aim is to produce products or provide services for a profit. That is, to sell products at a price greater than the costs of production. Every business, large or small, has these four major functions: manufacturing and production; sales and marketing; human resources; and finance and accounting.

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.

Business processes for the manufacturing and production area include product assembling, quality checking, and producing bills of materials. For the sales and marketing area, business processes include identifying customers, making customers aware of the product, and selling the product. For finance and accounting, business processes include paying creditors, creating financial statements, and managing cash accounts. For human resources, business processes include hiring employees, evaluating employees' job performance, and enrolling employees in benefits plans.

Identify and describe the different levels in a business firm and their information needs.

From highest to lowest, the three levels of the organizational hierarchy are senior, middle, and operational management.

- Senior managers need summary information that quickly informs them about the overall performance of the firm, such as gross sales revenues, sales by product group and region, and overall profitability.
- Middle managers need more specific information on the results of specific functional areas and departments of the firm, such as sales contacts by the sales force, production statistics for specific factories or product lines, employment levels and costs, and sales revenues for each month or even each day.
 - Knowledge workers, such as engineers, scientists, or architects, design products or services and create new knowledge for the firm. They may need access to external scientific databases or internal databases with organizational knowledge.
- Operational managers need transaction-level information, such as the number of parts in inventory each day or the number of hours logged on Tuesday by each employee.
 - Production or service workers actually produce the product and deliver the service. Production workers need access to information from production machines. Service workers need access to customer records so they can take orders and answer questions from customers.

Types of information systems include transaction processing at the operational level, decision-support systems and management information systems at the middle level, and executive support systems at the senior level.

(Learning Objective 1: What major features of a business are important for understanding the role of information systems? AACSB: Application of knowledge)

Explain why environments are important for understanding a business.

Business environments are constantly changing. New developments in technology, politics, customer preferences, and regulations happen all the time. In general, when businesses fail, it is often because they failed to respond adequately to changes in their environments. A firm must monitor changes in its environment and share information with key entities in that environment in order to stay in business.

External business environmental forces include: technology and science, the economy, international change, and politics.

Internal business environmental forces include: customers, suppliers, stockholders, regulations, and competitors.

(Learning Objective 1: What major features of a business are important for understanding the role of information systems? AACSB: Application of knowledge)

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

Define business intelligence systems.

Business intelligence systems focus on delivering information to support management decision making. These systems use data and software tools for organizing, analyzing, and providing access to data to help

managers and other enterprise users make more informed decisions. Business intelligence addresses the decision-making needs of all levels of management.

Business intelligence systems for middle management help with monitoring, controlling, decision making, and administrative activities in an organization.

Describe the characteristics of transaction processing systems (TPS) and the role 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), decision support systems (DSS), and executive support systems (ESS) and explain how each type of system helps managers make decisions.

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

- MIS provides 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 summarizes and report the company's basic operations using data supplied by TPS. The basic transaction data from TPS are compressed and usually presented in reports that are produced on a regular schedule.
- MIS serves 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 provides answers to routine questions that have been specified in advance and have a predefined procedure for answering them.
- MIS 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.

Examples include sales and profit per customer and per region, relocation summary and analysis, inventory control, capital investment analysis, and even a report on students who were here in the fall but did not to return in the spring.

While MIS have an internal orientation, DSS will often use data from external sources, as well as data from TPS and MIS. DSS support "what-if" analyses rather than a long-term structured analysis of MIS. Whereas MIS are generally not flexible and provide little analytical capabilities, DSS are designed for analytical purposes and are flexible.

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

- DSS provide sophisticated analytical models and data analysis tools to support semi-structured 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.

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

- ESS address non-routine 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 internal MIS and DSS.
- ESS are designed for ease-of-use and rely heavily on graphical presentations of data.

(Learning Objective 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.

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.

This changes the workflow of an organization:

- 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.

Supply chain management systems help businesses better manage relationships with their suppliers. The objective of SCM is to get the right number 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 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:

- Deciding when and what to produce, store, and move
- Rapidly communicating orders
- Tracking the status of orders
- Checking inventory availability and monitor inventory levels
- Reducing inventory, transportation, and warehousing costs
- Tracking shipments
- Planning production based on actual customer demand
- Rapidly communicating changes in product design

Customer relationship management 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:

- Providing 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.
- Consolidating customer data from multiple sources and providing analytical tools for answering questions such as: What is the value of a particular customer to the firm over his/her lifetime?
- Integrating customer-related processes and consolidate customer information from multiple communication channels, giving the customer a consolidated view of the company.
- Providing detailed and accurate knowledge of customers and their preferences to help firms increase the effectiveness of their marketing campaigns and provide higher-quality customer service and support.

Knowledge management systems 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.

- 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 improve business performance.

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 provide input and output for users.

(Learning Objective 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)

2-3 Why are systems for collaboration and social business, and knowledge management 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 businesses 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 ideas.
- *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 59:

- *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 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, 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 (separate 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 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.

Describe how knowledge management systems help organizations make better use of their structured, semistructured, and unstructured knowledge and also their tacit knowledge assets.

Knowledge management and their associated enterprise content management systems help manage company knowledge including semistructured, semistructured, and unstructured types of information. The ability of an organization capture, store, retrieve, distribute, and preserve vast amounts of data is critically important in this data-driven marketplace to be competitive. In the past SQL-based technologies were sufficient to maintain an organizations data. However, semistructured and unstructured types of information are difficult for these systems to effectively manage. Given the value of semistructured and unstructured data, knowledge management and ECMs help organizations these massive data troves.

Unfortunately, tacit knowledge is rarely written down. Some enterprise-wide KMS provide features and capabilities for addressing the challenges of tacit knowledge and provide assistance for locating employees that are experts within an organization that may help document important knowledge that is currently in tacit form.

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

2-4 What is the role of the information system’s 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.

Compare the roles programmers, systems analysts, information systems managers, the chief information officer (CIO), chief security officer (CSO), chief data officer (CDO), chief privacy officer (CPO), and chief knowledge officer (CKO) play.

- 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 managers, 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 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.
- Chief privacy officer is responsible for ensuring that the company complies with existing data privacy laws.
- 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 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 2.2? 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 Sanofi Pasteur uses.

Student answers to this question will vary.

Hands-on MIS Projects

Management Decision Problems

2-8 Don's Lumber Company:

The prices of lumber and other building materials are constantly changing. When a customer asks 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 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 1: What major features of a business are important for understanding the role of 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: 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.

Although the format of the students' answers will vary, a suggested solution can be found in the Microsoft Excel File named: *ESS13ch02_solutionfile.xls*.

2-10

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 30 net 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: 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

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: 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 and time: 7 hours, 57 min; 532 miles (Tolls included) Via I-80E and I-76
Alternate: 9 hours, 26 minutes; 595 miles (No Tolls) Via I-70E

Collaboration and Teamwork Project

2-12 In MyLab MIS, 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.

Business Problem-Solving Case: Should Companies Embrace Social Business?

2-13 Identify the people, organization, and technology factors affecting adoption of internal corporate social networks.

People: 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. A successful social business strategy requires leadership and behavioral changes. Just sponsoring a social project is not enough - managers need to demonstrate their commitment to a more open, transparent work style.

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 and culture can prove difficult. Enterprise social networking systems were not at the core of how most of the surveyed companies collaborate. The social media platform that will work best depends on its specific business purpose. Firms should first identify how social initiatives will actually improve work practices for employees and managers since technologies won't benefit flawed business processes.

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, social business, and knowledge management 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 organizations described in this case. Why were some successful? What role did management play in this process?

NASA's Goddard Space Flight Center abandoned its enterprise social network called Spacebook because no one knew how the tools would help people do their jobs better and more efficiently. It didn't focus enough on people. It didn't take into consideration the organization's culture and politics.

ModCloth succeeded with its social networking journey with Yammer because it made the tools more accessible, demonstrated the value of the tools in pilot projects. Using Yammer proved to be useful for ModCloth to connect its workforce to employee ideas. Further, Yammer has helped reduce unnecessary duplication of work projects.

The Esquel Group also implemented Yammer to improve communication among employees, including communication in different languages. A major benefit for Esquel is that Yammer provides a platform for managers to listen to its workforce to identify problems and improve processes. A major benefit to Esquel is that improvements to the organization have helped reduce the amount of outsourcing typically required in its industry.

(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, social business, and knowledge management 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?

Answers will vary, but one position is 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, social business, and knowledge management so important, and what technologies do they use? AACSB: Analytical thinking, Application of knowledge)

MyLab MIS

Go to the Assignments section of your MyLab to complete these writing exercises.

2-16 Identify and describe the capabilities of enterprise social networking software.

View rubrics in MyLab MIS.

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.

View rubrics in MyLab MIS.

For an example illustrating the concepts found in this chapter, view the videos in MyLab MIS.