**Chapter 1**

**Business Information Systems in Your Career**

**Learning Objectives**

1. How are information systems transforming business and what is their relationship to globalization?
2. Why are information systems so essential for running and managing a business today?
3. What exactly is an information system? How does it work? What are its people, organizational, and technology components?
4. How will a four-step method for business problem solving help you solve information system–related problems?
5. How will information systems affect business careers, and what information systems skills and knowledge are essential?

**Chapter Outline**

### *1.1 The Role of Information Systems in Business Today*

How Information Systems Are Transforming Business

What’s New in Management Information Systems?

Globalization Challenges and Opportunities: A Flattened World

Business Drivers of Information Systems

* 1. *Perspectives on Information Systems and Information Technology*

What Is an Information System?

It Isn’t Simply Technology: The Role of People and Organizations

* 1. *Understanding Information Systems: A Business Problem-Solving Approach*

The Problem-Solving Approach

A Model of the Problem-Solving Process

The Role of Critical Thinking in Problem Solving

The Connection Between Business Objectives, Problems, and Solutions

* 1. *Information Systems and Your Career*

How Information Systems Will Affect Business Careers

Information Systems and Your Career: Wrap-up

How This Book Prepares You For The Future

**Key Terms**

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

|  |  |
| --- | --- |
| Business model, 11 | Information system, 13 |
| Business processes, 16 | Information systems literacy, 15 |
| Change management, 23 | Information technology (IT), 13 |
| Computer hardware, 17 | Information technology (IT) infrastructure, 17 |
| Computer literacy, 15 | Input, 13 |
| Computer software, 17 | Internet, 17 |
| Critical thinking, 23 | Intranets, 17 |
| Culture, 16 | Management information systems (MIS), 15 |
| Data, 13 | Network, 17 |
| Data management technology, 17 | Networking and telecommunications technology, 17 |
| Extranets, 17 | Output, 13 |
| Feedback, 13 | Processing, 13 |
| Information, 13 | World Wide Web, 21 |

**Teaching Suggestions**

You are probably meeting in the first class session to introduce yourself, the course, and to meet the students. It is good to get to the classroom early and meet the students as they come in. Learn a few names as the students enter.

After going over any requirements you may have for the course, try to give an overview of the course stressing that this is not a technical course. Usually, you can’t do enough to put non-technical types at ease.

The opening case, “The San Francisco Giants Win Big With Information Technology,” shows students that even the major league sports industry has embraced technology as a way to enhance customer value and increase a business’s competitive advantage. Students will become familiar with the idea that many different kinds of businesses have had to change the way they operate, even major league sports teams.

The San Francisco Giants attribute some of their success, both as a team and as a business to their use of information technology. The team uses a video system to help them analyze player reaction times. That technology makes player data analysis much more accurate and provides information that didn’t exist before.

The Giants are also collecting data about fans, including ticket purchases and social media activity. The organization pioneered dynamic ticket pricing in order to maximize profits and draw as many people to the games as possible. The Giants have sold out 100 percent of their home games since October 2010 and increased season ticket sales from 21,000 in 2010 to 29,000 in 2012. The organization created a secondary online ticket market where season ticket holders can easily resell tickets on the Internet.

The organization also installed wireless technology in the stadium so fans can check scores, view video highlights, and do email during games. Technology plays a huge role in making the San Francisco Giants successful on and off the field.

***Section 1.1, “The Role of Information Systems in Business Today”,*** gives students a feel for the importance of information systems in business today and how they have transformed businesses on the world stage. A good discussion of the six important business objectives outlined in this section allows the instructor and students to discuss why businesses have become so dependent on information systems today and the importance of these systems for the survival of a firm. Stress to students that information systems are not a luxury. In most businesses they are the core to survival. This would be a good time to ask students to discuss how their own schools are using information systems to enhance their product offering.

Table 1-1 is a great way to introduce students to much of the new IT jargon that has developed over the last several years. Most of the technologies will be discussed in future chapters. Ask students how much hands-on experience they’ve had with some of the new business tools as either an employee or a customer.

Globalization is affecting virtually every country in the world. The most striking evidence of this trend is the increasing presence of cell phones in very small villages of Africa. As technology becomes more pervasive and, in some cases easier to use, globalization will continue its steady march. China, Singapore, and Russia are good examples of how globalization has flattened the world. They have become major exporters to other countries, especially industrialized and advanced countries such as the United States and many European countries. Emerging countries, such as Poland, the Ukraine, and Ireland, are excellent examples of increasing globalization.

Ask students to provide examples of truly digital firms (Cisco Systems and Dell Computers) as opposed to those businesses (local mom-and-pop stores or a local doctor’s office) that still perform many business processes outside of integrated information systems.

Review the six strategic business objectives: operational excellence, new products, services, and business models; customer and supplier intimacy; improved decision making; competitive advantage, and survival. The rest of the text will continually refer back to these six objectives as reasons why firms should incorporate and integrate business processes with information systems.

**Interactive Session: People: Meet The New Mobile Workers**

**Case Study Questions**

1. **What kinds of applications are described here? What business functions do they support? How do they improve operational efficiency and decision making?**

Email, messaging, social networking, and salesforce management are described in this case study. The applications support business functions including collaboration, location-based services, and communications with colleagues. These applications improve operational efficiency and decision making by allowing people to communicate from wherever they are. They are no longer tethered to one place or one machine. They can receive information and data instantaneously which allows them to make better, faster decisions.

PepsiCo uses handheld computing devices to move its products from manufacturing and warehouse facilities onto trucks and then into stores. Merchandisers are immediately notified when a driver has arrived at a store thanks to custom in-house apps created for iPhones. PepsiCo managers use iPads with custom applications to monitor their teams’ performance, pull up pricing, planograms, and contracts. Territory sales managers now have electronic versions of all the paperwork and resources they need to manage their teams. Managers also have instant access to their Web-based SharePoint content, including pricing, display planograms, customer development agreements, or new contracts.

1. **Identify the problems that businesses in this case study solved by using mobile digital devices.**

Jackson Kayak’s CEO, Eric Jackson monitors industry trends in the field and meets directly with dealers and customers to maintain a strong customer focus. He uses an iPhone and iPad to run his entire 120-person company from afar. His iPad gives him instant access to his company so he can analyze customer data, refresh Web site content, or approve new designs. He has calendars, email, contact management, and the ability to create and edit documents, spreadsheets, and presentations all on his mobile handheld device. His employees and managers use their mobile devices to compare manufacturing equipment side-by-side with images of replacement parts.

PepsiCo drivers and merchandisers picked up printed schedules order quantities and tasks to be performed at each outlet at the beginning of the day. That made it very difficult to accommodate last-minute changes in orders because communicating with the delivery drivers was difficult when they were on the road. Merchandisers did not have access to timecards, schedules, store details, account profiles, and everything needed to service a store. Now, because all that information is available through iPhone apps, the merchandiser has everything he needs at the touch of a finger.

At PepsiCo’s rival Coca-Cola Enterprises, much of the data and information needed was also in written form. After a technician visited a customer, he would transfer information from paper notes into a database on his laptop and transmit it to Coca-Cola’s aging centralized software system. That caused many technicians to spend an extra half-hour a day on the job. A new system cut the administrative time by a third, freeing up employees to service other companies’ equipment in addition to their own.

1. **What kinds of businesses are most likely to benefit from equipping their employees with mobile digital devices such as iPhones and iPads?**

Any business with a need to communicate with customers, suppliers, and business colleagues can benefit from equipping employees with mobile digital devices.

Students answers will vary as they relate their own experiences and knowledge of using mobile digital devices. Try to encourage the students’ creativity and imagination with this question. Here are a couple examples:

**Insurance companies:** claims adjusters or agents writing new policies or updating old ones, can take pictures of property as-is or that’s been damaged, update data on the condition of a property, and document property damage for claims processing.

**Real estate agents:** can take pictures of homes for sale and send to prospective buyers, send information to other agents or prospective buyers and sellers, answer questions and complete documents related to buying and selling property.

**Winemakers:** can receive up-to-date weather forecasts, track crop information via GPS coordinates, store and access data on crop varieties for later analysis, track employee productivity during harvest time, take pictures of crops to include in a database, and communicate with suppliers and customers.

1. **One company deploying iPhones has said, “The iPhone is not a game changer, it’s an industry changer. It changes the way that you can interact with your customers and with your suppliers.” Discuss the implications of this statement.**

First and foremost, those that effectively and efficiently deploy mobile digital device technology gain a huge competitive advantage over those who do not use the technology to stay in constant touch with customers and suppliers. Sales and Marketing can take a hit by not having access to information that can close business deals faster and more efficiently. Costs can increase without the ability to contact suppliers and track product shipments, especially for those companies who use just-in-time supply chains.

***Section 1.2, “Perspectives on Information Systems”***, gives students the facts and definitions that underpin information systems and allow students to knowledgeably discuss information systems. Students do not need the knowledge of a technical person, but they do need to understand the role of information technology and how it must support the organization’s business strategy. They must also understand how information technology can be used to help transform a business. Note that the chapter’s definitions and terms help prepare students to discuss information systems as an intricate part of business systems. Encourage students to see that technology is subordinate to the organization and its purposes.

This is also a good place to reinforce the differences between information systems literacy and computer literacy. When asked to describe company information systems, students often depict information systems in terms of technology. It is important to stress that information systems are more than just technology, and that they have management, organization, and technology dimensions. Figure 1.5 and the diagram at the beginning of the chapter (page 4) can be used to illustrate this point.

Ask students why some companies can achieve much better results using information systems while others cannot. That will help them understand the concept of complementary assets and show that there is much more to building a digital firm than simply buying the latest, greatest hardware and software. It will also help them understand the delicate relationship between technology, management, and organizations assets.

**Interactive Session: Technology: UPS Competes Globally with Information Technology**

**Case Study Questions**

1. What are the inputs, processing, and outputs of UPS’s package tracking system?

*Inputs:* The inputs include package information, customer signature, pickup, delivery, time-card data, current location (while en route), and billing and customer clearance documentation.

*Processing:* The data are transmitted to a central computer and stored for retrieval. Data are also reorganized so that they can be tracked by customer account, date, driver, and other criteria.

*Outputs:* The outputs include pickup and delivery times, location while en route, and package recipient. The outputs also include various reports, such as all packages for a specific account or a specific driver or route, as well as summary reports for management.

1. What technologies are used by UPS? How are these technologies related to UPS’s business strategy?

Technologies include handheld computers (DIADs), barcode scanning systems, wired and wireless communications networks, desktop computers, UPS’s central computer (large mainframe computers), and storage technology for the package delivery data. UPS also uses telecommunication technologies for transmitting data through pagers and cellular phone networks. The company uses in-house software for tracking packages, calculating fees, maintaining customer accounts, and managing logistics, as well as software to access the World Wide Web.

UPS has used the same strategy for more than 90 years. Its strategy is to provide the “best service and lowest rates.” One of the most visible aspects of technology is the customer’s ability to track his/her package via the UPS Web site. However, technology also enables data to seamlessly flow throughout UPS and helps streamline the workflow at UPS. Thus, the technology described in the scenario enables UPS to be more competitive, efficient, and profitable. The result is an information system solution to the business challenge of providing a high level of service with low prices in the face of mounting competition.

1. What strategic business objectives do UPS’s information systems address?
	* **Operational excellence:** UPS has maintain leadership in small-package delivery services despite stiff competition from FedEx and the U.S. Postal Service by investing heavily in advanced information technology.
	* **New products, services, and business models:** In June 2009, UPS launched a new Web-based Post Sales Order Management System (OMS) that manages global service orders and inventory for critical parts fulfillment. The system enables high-tech electronics, aerospace, medical equipment, and other companies anywhere in the world that ship critical parts to quickly assess their critical parts inventory, determine the most optimal routing strategy to meet customer needs, place orders online, and track parts from the warehouse to the end user.
	* **Customer and supplier intimacy:** Customers can download and print their own labels using special software provided by UPS or by accessing the UPS Web site. UPS spends more than $1 billion each year to maintain a high level of customer service while keeping costs low and streamlining its overall operations.
	* **Improved decision making:** Special software creates the most efficient delivery route for each driver that considers traffic, weather conditions, and the location of each stop. UPS estimates its delivery trucks save 28 million miles and burn 3 million fewer gallons of fuel each year as a result of using this technology. To further increase cost savings and safety, drivers are trained to use “340 Methods” developed by industrial engineers to optimize the performance of every task from lifting and loading boxes to selecting a package from a shelf in the truck.
	* **Competitive advantage:** UPS is leveraging its decades of expertise managing its own global delivery network to manage logistics and supply chain activities for other companies. Its Supply Chain Solutions division provides a complete bundle of standardized services to subscribing companies at a fraction of what it would cost to build their own systems and infrastructure.
2. What would happen if UPS’s information systems were not available?

Arguably, UPS might not be able to compete effectively without technology. If the technology were not available, then UPS would, as it has through most of its history, attempt to provide that information to its customers, but at higher prices. From the customers’ perspective, these technologies provide value because they help customers complete their tasks more efficiently. Customers view UPS’s technology as value-added services as opposed to increasing the cost of sending packages.

***Section 1.3: “Contemporary Approaches to Information Systems”.*** Too often, information systems are thought to be all about hardware and software. Issues that focus on human behavioral aspects of information systems are overlooked or minimized. That can lead to disaster. Figure 1.9 may help you explain contemporary approaches to information systems.

After contrasting the technical and behavioral approaches, you should stress to your students that the sociotechnical approach does not ignore the technical, but considers it as a part of the organization.

***Section 1.4: “Information Systems and Your Career”***. As an exercise, instructors may wish to have their students surf the Internet for job opportunities at Monster Job ([www.monster.com](http://www.monster.com)) or another employment application site. Divide your class into groups to represent the major functional areas such as finance, accounting, marketing, human resource management, production and operations, information systems, and others. Ask each group to find five jobs being advertised in each of the functional areas. Have them list the required qualifications being requested as they relate to the field of information systems.

Because your students should have access to email, you may want to send them an “MIS Word of the Day.” Check out <http://www.whatis.com>, <http://whatis.techtarget.com>, or one of the many other online computer terminology dictionaries to locate words and definitions that supplement the Laudon text. Students often enjoy the electronic interactions with their instructor, and the words are yet another way to reinforce learning.

## Review Questions

**1-1 How are information systems transforming business and what is their relationship to globalization?**

**Describe how information systems have changed the way businesses operate and their products and services.**

Wireless communications, including computers and mobile hand-held computing devices, are keeping managers, employees, customers, suppliers, and business partners connected in every way possible. Email, online conferencing, the Web, and the Internet, are providing new and diverse lines of communication for all businesses, large and small. Through increased communication channels and decreased costs of the communications, customers are demanding more of businesses in terms of service and product, at lower costs. E-commerce is changing the way businesses must attract and respond to customers.

**Describe the challenges and opportunities of globalization in a “flattened” world.**

Customers no longer need to rely on local businesses for products and services. They can shop 24/7 for virtually anything and have it delivered to their door or desktop. Companies can operate 24/7 from any geographic location around the world. Jobs can just as easily move across the state or across the ocean. Employees must continually develop high-level skills through education and on-the-job experience that cannot be outsourced. Business must avoid markets for goods and services that can be produced offshore much cheaper. The emergence of the Internet into a full-blown international communications system has drastically reduced the costs of operating and transacting business on a global scale.

**1-2 Why are information systems so essential for running and managing a business today?**

**List and describe six reasons why information systems are so important for business today.**

Six reasons why information systems are so important for business today include:

* + - 1. Operational excellence
			2. New products, services, and business models
			3. Customer and supplier intimacy
			4. Improved decision making
			5. Competitive advantage
			6. Survival

Information systems are the foundation for conducting business today. In many industries, survival and even existence without extensive use of IT is inconceivable, and IT plays a critical role in increasing productivity. Although information technology has become more of a commodity, when coupled with complementary changes in organization and management, it can provide the foundation for new products, services, and ways of conducting business that provide firms with a strategic advantage.

**1-3 What exactly is an information system? How does it work? What are its people, organization, and technology components?**

**List and describe the organizational, people, and technology dimensions of information systems.**

* + - *Organization:* The organization dimension of information systems involves issues such as the organization’s hierarchy, functional specialties, business processes, culture, and political interest groups.
		- *People:* The management dimension of information systems involves setting organizational strategies, allocating human and financial resources, creating new products and services, and re-creating the organization if necessary.
		- *Technology:* The technology dimension consists of computer hardware, software, data management technology, and networking/telecommunications technology.

**Define an information system and describe the activities it performs.**

The textbook defines an information system as a set of interrelated components that work together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and visualization in an organization. In addition to supporting decision making, information systems may also help managers and workers analyze problems, visualize complex subjects, and create new products.

**Distinguish between data and information and between information systems literacy and computer literacy.**

* + - Data are streams of raw facts representing events occurring in organizations or the physical environment before they have been organized and arranged into a form that people can understand and use.
		- Information is data that have been shaped into a form that is meaningful and useful to human beings.
		- Information systems literacy is a broad-based understanding of information systems. It includes a behavioral as well as a technical approach to studying information systems.
		- In contrast, computer literacy focuses primarily on knowledge of information technology. It is limited to understanding how computer hardware and software works.

**Explain how the Internet and the World Wide Web are related to the other technology components of information systems.**

The Internet and World Wide Web have had a tremendous impact on the role information systems play in organizations. These two tools are responsible for the increased connectivity and collaboration within and outside the organization. The Internet, World Wide Web, and other technologies have led to the redesign and reshaping of organizations. They have helped transform the organization’s structure, scope of operations, reporting and control mechanisms, work practices, work flows, and products and services.

**1-4 How will a four-step method for business problem solving help you solve information system-related problems?**

**List and describe each of the four steps for solving business problems.**

* + - Problem identification involves understanding what kind of problem is being presented—whether it stems from people, organizational, or technology factors or a combination of these.
		- Solution design involves designing several alternative solutions to the problem that has been identified.
		- Solution evaluation and choice entails selecting the best solution, taking into account its cost and the available resources and skills in the business.
		- Implementation entails purchasing or building hardware and software, testing the software, providing employees with training and documentation, managing change as the system is introduced into the organization, and measuring the outcome.

**Give some examples of people, organizational, and technology problems found in businesses.**

In answering this question students may draw on examples given in Table 1.2 on page 22 of the text.

* + - Organization: In order to understand how a specific business firm uses information systems, you need to know something about the structure, history, and culture of the company. Typical organizational problems include:
* Poor/outdated business processes (usually inherited from the past)
* Unsupportive culture and attitudes
* Political in-fighting
* Turbulent business environment/changes in the organization’s surrounding environment
* Complexity of task
* Inadequate resources
	+ - People: Information systems require skilled people to build and maintain them, and need people who can understand how to use the information in a system to achieve business objectives. Typical people problems include:
* Lack of employee training
* Difficulties of evaluating performance
* Legal and regulatory compliance
* Work environment
* Lack of employee support and participation
* Ergonomics
* Poor or indecisive management
	+ - Technology: Information technology is one of many tools managers use to cope with change. Elements of technology include: computer hardware, computer software, data management technology, networking and telecommunications technology. Other technology elements include the Internet, intranets, extranets, the World Wide Web. Typical technology problems include:
* Insufficient or aging hardware
* Outdated software
* Inadequate database capacity
* Insufficient telecommunications capacity
* Incompatibility of old systems with new technology
* Rapid technological change

**Describe the relationship of critical thinking to problem solving.**

Critical thinking can be briefly defined as the sustained suspension of judgment with an awareness of multiple perspectives and alternatives. It involves at least four elements:

* + - Maintaining doubt and suspending judgment. By doubting all solutions at first and refusing to rush to a judgment, you create the necessary mental conditions to take a fresh, creative look at problems, and you keep open the chance to make a creative contribution.
		- Being aware of different perspectives. Recognize that business problems have many dimensions and that the same problem can be viewed from different perspectives. You have to decide which major perspectives are useful for viewing a given problem.
		- Testing alternatives or modeling solutions to problems and letting experience be the guide. Not all contingencies can be known in advance and much can be learned through experience. Therefore, experiment, gather data, and reassess the problem periodically.
		- Being aware of organizational and personal limitations.

**Describe the role of information systems in business problem solving.**

Problem solving requires critical thinking in which one suspends judgment to consider multiple perspectives and alternatives. There are a number of reasons why business firms invest in information systems and technologies. Six business objectives of information systems include: operational excellence; new products, services, and business models; customer/supplier intimacy; improved decision making; strategic advantage; and survival. When firms cannot achieve these objectives, they become “challenges” or “problems” that receive attention. Managers and employees who are aware of these challenges often turn to information systems as one of the solutions or the entire solution.

**1-5 How will information systems affect business careers and what information system skills and knowledge are essential?**

**Describe the role of information systems in careers in accounting, finance, marketing, management, and operations management and explain how careers in information systems have been affected by new technologies and outsourcing?**

Each of the major business fields requires an understanding of information systems.

Accounting: Accountants need to understand future changes in hardware, software, and network security essential for protecting the integrity of accounting systems along with new technologies for reporting in online and wireless business environments.

Finance: Financial people need to understand future IT changes, financial database systems, and online trading systems for managing investments and cash.

Marketing: Marketing personnel require an understanding of marketing database systems and systems for customer relationship management as well as Web-based systems for online sales.

Operations management: These individuals need knowledge of changing hardware, software, and database technologies used in production and services management and an in-depth understanding of how enterprise-wide information systems for production management, supplier management, sales force management, and customer relationship management achieve efficient operations.

Careers in information systems: The individuals clearly need to understand the central role databases play in managing information resources of the firm and how new hardware and software technologies can enhance business performance. They also need skills for leading the design and implementation of new management systems, working with other business professionals to ensure systems meet business objectives, and working with software packages providing new system solutions.

**List and describe the information system skills and knowledge that are essential for all business careers.**

Common information systems skills and knowledge for all business careers include an understanding of how information systems help firms achieve major business objectives; an appreciation of the central role of databases; skills in information analysis and business intelligence; sensitivity to the ethical, social, and legal issues raised by systems; and the ability to work with technology specialists and other business professionals in designing and building systems.

**Discussion Questions**

**1-6 What are the implications of globalization when you have to look for a job? What can you do to prepare yourself for competing in a globalized business environment? How would knowledge of information systems help you compete?**

Many jobs, not just in manufacturing, but in the services industry, are moving across borders and oceans thanks to advances in communications provided by the Internet and other networks. Many of these jobs have been in less-skilled information system occupations. However, the trend is spreading to even more advanced-skilled jobs in the financial, legal, medical, and accounting industries. Individuals must continually develop high-level skills through education and on-the-job experience that cannot be outsourced. Individuals must also develop a broad range of problem-solving skills, as well as technical skills, that make them more valuable to companies. Information systems and technologies will play a major and expanding role in day-to-day work and throughout employees’ careers. Career opportunities and compensation will in part depend on the ability to help business firms use information systems to achieve their objectives.

**1-7 If you were setting up the Web site for the San Francisco Giants, what people, organizational, and technology issues might you encounter?**

Answers will vary, however a good starting point is to use Table 1.2 on page 22 to flush out some suggestions.

Organization: Typical problems include:

* + - Outdated/poor business processes (usually inherited from the past)
		- Unsupportive culture and attitudes
		- Political in-fighting
		- Turbulent business environment/changes in the organization’s surrounding environment
		- Complexity of task
		- Inadequate resources

Technology: Typical problems include:

* + - Insufficient or aging hardware
		- Outdated software
		- Inadequate database capacity
		- Insufficient telecommunications capacity
		- Incompatibility of old systems with new technology
		- Rapid technological change

Management: Typical problems include:

* + - Lack of employee training
		- Difficulties of evaluating performance
		- Legal and regulatory compliance
		- Work environment
		- Lack of employee support and participation
		- Poor or indecisive management

**1-8 Identify some of the people, organizational, and technology issues that UPS had to address when creating its successful information systems.**

**People issues:**

* Strong senior management support for technology investment and change
* Incentives for management innovation
* Teamwork and collaborative work environments
* Training programs to enhance management decision skills
* Management culture that values flexibility and knowledge-based decision making.

**Organizational issues:**

* Supportive organizational culture that values efficiency and effectiveness
* Appropriate business model
* Efficient business processes
* Decentralized authority
* Distributed decision-making rights
* Strong IS development team

**Technology issues:**

* The Internet and telecommunications infrastructure
* IT-enriched educational programs raising labor force computer literacy
* Standards (both government and private sector)
* Laws and regulations creating fair, stable market environments
* Technology and service firms in adjacent markets to assist implementation

**Hands-On MIS Projects**

This section gives students an opportunity to analyze real world information systems needs and requirements. It provides several exercises you can use to determine if students are grasping the material in the chapter.

**Management Decision Problems**

**1-9 Snyders of Hanover:** The financial department uses spreadsheets and manual processes for much of its data gathering and reporting. Assess the impact of this situation on business performance and management decision making.

* Data entry errors from repetitive entry
* No information available on-demand
* Late reporting of critical decision-making information
* Time consuming

**1-10 Dollar General Corporation:** Wants to keep costs as low as possible so it does not use an automated method for keeping track of inventory at each store. What decisions have to be made before investing in an information system solution?

* Determine business problems—mismanagement of inventory, too little or too much inventory, no ability to track inventory.
* Lack of information system to manage inventory is actually increasing costs rather than decreasing them.
* What is the exact problem the company wants to solve—reduce costs.

**Improving Decision Making: Using Databases to Analyze Sales Trends:**

Software skills: Database querying and reporting

Business Skills: Sales Trend Analysis

**1-11** This exercise helps students understand how they can use database software to produce valuable information from raw data. The solutions provided here were created using the query wizard and report wizard capabilities of Microsoft Access. Students can, of course, create more sophisticated reports if they wish, but most information can be obtained from simple query and reporting functions. The main challenge is to get students to ask the right questions about the information.

* **Which products should be restocked?**
* **Which stores and sales regions would benefit from a promotional campaign and additional marketing?**
* **Which times of the year should products be offered at full price?**
* **Which times of the year should products be discounted?**

The answers to the questions can be found in the Microsoft Access File named: *MIS13ch01\_solutionfile.mdb*

**Improving Decision Making: Using the Internet to Locate Jobs Requiring Information Systems Knowledge**

Software skills: Internet-based software

Business skills: Job searching

**1-12** In addition to having students research jobs in their chosen career field, it may be quite interesting to have them research jobs in other career fields so they can see that virtually every job and/or career requires information systems skills.

**Video Case Questions**

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

**Collaboration and Teamwork: Creating a Web Site for Team Collaboration**

**1-13 Form a team with three or four classmates. Then use the tools at Google Sites to create a Web site for your team. You will need to a create a Google account for the site and specify the collaborators (your team members) who are allowed to access the site and make contributions. Specify your professor as the viewer of the site so that person can evaluate your work. Assign a name to the site. Select a theme for the site and make any changes you wish to colors and fonts. Add features for project announcements and a repository for team documents, source materials, illustrations, electronic presentations, and Web pages of interest. You can add other features if you wish. Use Google to create a calendar for your team. After you complete this exercise, you can use this Web site and calendar for your other team projects.**

Use this checklist to ensure all elements of the Web site have been created:

* Create a Google account
* Specify collaborators
* Specify professor as site viewer
* Assign name to site
* Select theme
* Add features
* Add repository
* Create calendar

Use this checklist to evaluate the elements of the Web site:

* Are the page contents fairly well-organized?
* Are page formats fairly well-designed?
* Have all team members been given collaboration rights?
* Has the professor been given permission for viewing the site content
* Is the repository fairly well-organized or a hodge-podge of files?
* Has the calendar been created and is it fairly easy to use?

**Business Problem-Solving Case:** ***A New Look at Electronic Medical Records***

**1-14 Identify and describe the problem in this case.**

The majority of medical records are currently paper-based, making these records very difficult to access and share. Inefficiencies in medical recordkeeping are one reason why health care costs in the United States are the highest in the world. Because administrative costs and medical recordkeeping account for 12 percent of health care spending, improving those processes can lead to saving billions of dollars every year.

**1-15 What people, organization, and technology factors are responsible for the difficulties in building electronic medical record systems? Explain your answer.**

**People:** Physicians, hospitals, and insurers must meet federal mandates for implementing electronic medical records or suffer penalties. Only a small amount of money is available from the federal government for upfront costs associated with the implementation. The expenditure of overhauling recordkeeping systems represents a significant increase in the short-term budgets and workloads of smaller health care providers.

**Organization:** Many smaller practices are finding it difficult to afford the costs and time commitment to upgrade their recordkeeping systems. Patient privacy concerns, data quality issues, and resistance from health care workers are other difficulties that must be addressed.

**Technology:** It’s unclear whether or not the many different types of systems being developed and implemented will be compatible with one another, jeopardizing the goal of a national system where all health care providers can share information.

**1-16 What is the business, political, and social impact of not digitizing medical records (for individual physicians, hospitals, insurers, patients, and the U.S. Government)?**

**Individual physicians:** The federal government plans to assess penalties on practices that fail to comply with the new electronic recordkeeping standards. Medicare and Medicaid reimbursements will slowly be reduced by 1 percent per year until 2018, with further, more stringent penalties coming beyond that.

**Hospitals:** Health care spending figures are inflated by inefficiency, errors, and fraud.

**Insurers:** Processing insurance claims from patients, hospitals, and physicians will continue to be a slow, cumbersome process fraught with errors and fraud. Insurers will continue to spend too much money on claims processing—money that could be used to pay actual medical costs.

**Patients:** Medical information cannot be shared among physicians and hospitals easily and quickly. That impacts overall medical care and attention and can potentially be life-threatening. Patients will spend more money on medical care just to cover administrative costs rather than on the care itself.

**U.S. Government:** A perception of a potential conflict of interest for insurance companies involved in the creation of health record systems exists which may make it more difficult to fully deploy EMR systems. A 2009 poll found that 59 percent of respondents said they doubted the confidentiality of online medical records. Even with making the systems as secure as possible, a perception of poor privacy could affect the success of the system and the quality of care provided.

**1-17 What are business and social benefits of digitizing medical recordkeeping?**

**Business benefits:** An electronic medical record system contains all of a person’s vital medical data, including personal information, a full medical history, test results, diagnoses, treatments, prescription medications, and the effect of those treatments. A physician would be able to immediately and directly access needed information from the EMR without having to pore through paper files. If the record holder went to the hospital, the records and results of any tests performed at that point would be immediately available online. Many experts believe that electronic records will reduce medical errors and improve care, create less paperwork, and provide quicker service, all of which will lead to dramatic savings in the future: an estimated $77.8 billion per year.

Electronic systems hold the promise of immediate processing, or “real-time claims adjudication” just like when you pay using a credit card, because claim data would be sent immediately and diagnostic and procedure code information are automatically entered.

**Social benefits:** If the Veterans Affairs electronic medical record system is an example, patients stand to gain a great deal from the implementation of new record systems. The quality and thoroughness of medical care is higher and the in-home monitoring process improves medical care and the lives of VA patients. More patients receive necessary periodic treatments under the VA system. Patients also report that the process of being treated at the VA is effortless compared to paper-based providers.

**1-18 Are electronic medical record systems a good solution to the problem of rising health care costs in the United States? Explain your answer.**

If done correctly, EMR systems can help control rising health care costs. However, many obstacles stand in the way of fully deploying systems that are compatible and inexpensive enough for doctors and hospitals to retrofit their current systems. Also, no nationwide software standards for organizing and exchanging medical information have been put in place.