**Chapter 1**

**Business Information Systems in Your Career**

**Learning Objectives**

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

**1-2** What exactly is an information system? How does it work? What are its people, organizational, and technology components?

**1-3** How will a four-step method for business problem solving help you solve information system–related problems?

**1-4** How will information systems affect business careers, and what information systems skills and knowledge are essential?

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**Chapter Outline**

### *1-1 Why are information systems so essential for running and managing a 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

### *1-2 What exactly is an information system? How does it work? What are its people, organizational, and technology components?*

What Is an Information System?

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

Dimensions of Information Systems

### *1-3 How will a four-step method for business problem solving help you solve information system-related problems?*

The Problem-Solving Approach

A Model of the Problem-Solving Process

The Role of Critical Thinking in Problem Solving

The Connections Between Business Objectives, Problems, and Solutions

### *1-4 How will information systems affect business careers, and what information systems skills and knowledge are esstential?*

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, 13 | Information system (IS), 13 |
| Business processes, 16 | Information systems literacy, 16 |
| Change management, 23 | Information technology (IT), 13 |
| Computer hardware, 17 | Information technology (IT) infrastructure, 18 |
| Computer literacy, 16 | Input, 14 |
| Computer software, 17 | Internet, 17 |
| Critical thinking, 24 | Intranets, 17 |
| Culture, 16 | Management information systems (MIS), 16 |
| Data, 13 | Network, 17 |
| Data management technology, 17 | Networking and telecommunications technology, 17 |
| Extranets, 18 | Output, 14 |
| Feedback, 14 | Processing, 14 |
| Information, 13 | World Wide Web, 18 |

**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 Keep Winning 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 increased ticket sales 7 percent each year since the system was implemented. 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, “Why are information systems so essential for running and managing a 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: The Mobile Pocket Office**

**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.

Sonic Automotive uses handheld devices and apps to vastly improve its sales and marketing services and gives sales associates immediate information they never had quick access to before. The devices improve efficiency and effectiveness of its managers and employees.

Customer service is much improved by the use of handheld devices also. Before, customers requiring car repairs had to go inside the dealership to get a repair order. Now, the Sonic staff members go outside to the customer’s vehicle and enter the repair order on an iPad. Operational excellence, services, customer intimacy, and competitive advantage are the main strategic business objectives that the use of mobile devices have improved.

SKF, a global engineering company headquartered in Sweden, has 148 manufacturing sites in 28 countries with 40,000 employees worldwide. It has developed more than 30 custom iPhone and iPad applications for streamlining workflows and accessing critical corporate data from anywhere in the world. That has improved operational excellence, decision making, competitive advantage, and survival.

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

Sonic Automotive developed several custom iPhone and iPad applications to speed up its sales and services. One of the apps, Virtual Lot, lets sales associates search quickly for vehicles held in inventory at all of the company’s dealerships. The app gives them immediate access to vehicle information, pricing, trade-in values, interest rates, special promotions, financing, and what competitors are charging for identical vehicles. The 100 dealerships in 14 states have access to information on all of the organization’s auto inventory, and not just what is on the local lot.

SKF service teams and customers in the field use a sensor-driven app called Shaft Align,

which connects by wireless Bluetooth sensors to a piece of machinery such as a motor-driven fan to ensure that the drive shaft is running in proper alignment. If not, the app generates step-by-step instructions and a 3-D rendering to show how to align the motor manually. Then it checks the work and produces a report.

A mobile app called MOST enables factory operators to monitor some SKF factory production lines. MOST links to the back-end systems running the machinery and provides operators with key pieces of data. Operators using this mobile app use secure instant messaging to communicate with managers and each other, update maintenance

logs, and track products in real-time as they move through the factory line.

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, “What exactly is an information system? How does it work?What are its people, organizational, and technology components?”*** 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. The diagram at the beginning of the chapter 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 does UPS use? 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 website. 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 maintained 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 website. 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, “How will a four-step method for business problem solving help you solve information system-related problems?”*** 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.

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, “How will information syustems affect business careers, and what information systems skills and knowledge are essential?”*** As an exercise, instructors may wish to have their students surf the Internet for job opportunities at Monster.com ([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 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. (Learning Objective 1: Why are information systems so essential for running and managing a business today?, AACSB: Application of knowledge.)

**Describe the challenges and opportunities of globalization.**

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. (Learning Objective 1: Why are information systems so essential for running and managing a business today?, AACSB: Application of knowledge.)

**1-2 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. (Learning Objective 2: What is an information system? How does it work? What are its people, organizational, and technology components?, AACSB: Application of knowledge.)

**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. (Learning Objective 2: What is an information system? How does it work? What are its people, organizational, and technology components?, AACSB: Application of knowledge.)

**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. (Learning Objective 2: What is an information system? How does it work? What are its people, organizational, and technology components?, AACSB: Analytical thinking.)

**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. (Learning Objective 2: What is an information system? How does it work? What are its people, organizational and technology components?, AACSB: Analytical thinking.)

**1-3 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, 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. (Learning Objective 3: How will a four-step method for business problem solving help you solve information system-related problems?, AACSB: Application of knowledge.)

**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.

* + - **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 they 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, and 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

(Learning Objective 3: How will a four-step method for business problem solving help you solve information system-related problems?, AACSB: Application of knowledge.)

**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.

(Learning Objective 3: How will a four-step method for business problem solving help you solve information system-related problems?, AACSB: Application of knowledge.)

**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. (Learning Objective 3: How will a four-step method for business problem solving help you solve information system-related problems?, AACSB: Application of knowledge.)

**1-4 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. (Learning Objective 4: How will information systems affect business careers, and what information system skills and knowledge are essential?, AACSB: Application of knowledge.)

**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. (Learning Objective 4: How will information systems affect business careers, and what information system skills and knowledge are essential?, AACSB: Application of knowledge.)

**Discussion Questions**

**1-5 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?**

Student answers to this question will vary.

**1-6 If you were setting up the website for the San Francisco Giants, what people, organizational, and technology issues might you encounter?**

Student answers to this question will vary.

**1-7 Identify some of the people, organizational, and technology issues that UPS had to address when creating its successful information systems.**

Student answers to this question will vary.

**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**

**1-8 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

(Learning Objective 2: What is an information system? How does it work? What are its people, organizational, and technology components?, AACSB: Analytical thinking.)

**1-9 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.

(Learning Objective 1: Why are information systems so essential for running and managing a business today?, AACSB: Analytical thinking, Application of knowledge.)

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

Software skills: Database querying and reporting

Business Skills: Sales Trend Analysis

**1-10** 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, and when should discounts be used?**

The answers to the questions can be found in the Microsoft Access File named: *MIS12ch01\_solutionfile.mdb*

(Learning Objective 2: What is an information system? How does it work? What are its people, organizational, and technology components?, AACSB: Analytical thinking.)

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

Software skills: Internet-based software

Business skills: Job searching

**1-11** 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. (Learning Objective 4: How will information systems affect business careers, and what information systems skills and knowledge are essential?, AACSB: Written and oral communication, Analytical thinking, Reflective thinking, Application of knowledge.)

**Collaboration and Teamwork Project**

**1-12 In MyMISLab, you will find a Collaboration and Teamwork Project dealing with the concepts in this chapter. You will be able to use Google Drive, Google Docs, Google Sites, Google +, or other open source collaboration tools to complete the assignment.**

**Business Problem-Solving Case:** *Home Depot renovates itself with new systems and ways of working*

**1-13 What problems and challenges did Home Depot experience?**

What started out as two stores grew into the fourth largest retailer in the U.S. and the fifth largest retailer in the world operating 2,256 stores worldwide. During its early years, the retail giant was very low-tech relying on in-store customer service to fuel its growth. However, as the chain grew, items were often out of stock because the inventory system was so poor. Trucks carrying supplies to each store often arrived half-empty. Employees spent 60% of their work day on stocking and just 40% on helping customers. The chain also had dozens of distribution centers which caused the company to maintain a very large and expensive logistics infrastructure.

Robert Nardelli took over as CEO in 2000 and immediately pushed hard to make the company more efficient by centralizing operations and cutting jobs. In 2002, Home Depot invested $1 billion in overhauling its IT infrastructure including replacing point-of-sale systems, creating a huge data repository for accessing sales and labor management information, and implementing a standard enterprise software platform for all of the company’s basic operations.

In 2008, Home Depot further improved its information systems by investing in competitive pricing software and creating regional rapid deployment centers. Demand planning software also helped manufacturers and distributors reduce forecasting errors and increase profitability. (Learning Objective 1: Why are information systems so essential for running and managing a business today?, AACSB: Analytical thinking, Reflective thinking.)

**1-14 Describe the relationship between management, organization, and technology at Home Depot. How did this relationship change over time?**

**Management:** When the retailer began with just two stores, it was very low-tech and concentrated on customer service rather than technology to increase its sales. Over time, as it grew, management became more difficult because of the lack of technology. Many items were out of stock or not delivered most efficiently and effectively. Over time, rapid deployment centers took over inventory replenishment decisions formerly made by individual stores which improved inventory levels.

**Organization:** The retailer’s initial success was based on a decentralized business model, where stores were almost independently managed and filled with highly knowledgeable sales people who had backgrounds in various building trades. Regional and store-level managers made the decisions on what merchandise to carry in each store and how much of each item to keep in stock. Stock levels at individual stores were managed independently of the central organization.

**Technology:** Even as late as 2000, Home Depot lacked the hardware infrastructure for its CEO to send a companywide email. Items were often out of stock because the inventory system was so poor. CEO Robert Nardelli pushed hard to improve technology throughout the entire organization and centralize management decisions and inventory levels. Eventually, information systems were installed to help the company with competitive pricing. Fully automated rapid deployment centers were created to take over inventory replenishment decisions formerly made by individual stores. Inventory forecasting errors dropped significantly. Truck trips to make deliveries were halved. Mobile devices are used to speed checkout times. (Learning Objective 2: What is an information system? How does it work? What are its people, organizational, and technology components?, AACSB: Analytical thinking, Reflective thinking, Application of knowledge.)

**1-15 How much was Home Depot’s management responsible for its problems? What about the role of technology and organizational factors?**

The founders of Home Depot were more interested in customer service than in managing from a centralized organization. That worked well in the early years but as the retailer grew, it became too cumbersome and too expensive to keep the decentralized management structure.

CEO Robert Nardelli went to the opposite extreme by centralizing operations and cutting jobs. Those actions alienated many store managers, rank-and-file sales staff, and customers. He spent $1 billion in overhauling Home Depot’s infrastructure with much of it spent on enterprise software. That was supposed to allow sales associates to access details on products for sale, their features, and availability, and also find information about the customers they were serving. The software promised to determine the right mix of products for retail outlets, set regional prices, and track inventory from manufacturers’ assembly lines to store cash registers. All that produced some savings, but not enough as Home Depot continued to lose ground to its main competitor, Lowe’s.

Nardelli was replaced by Frank Blake in 2007 who put more emphasis on serving and cultivating customers. He also invested in software to help the company with competitive pricing. In 2008, CIO Matt Carey was hired to further improve Home Depot’s information technology infrastructure. Inventory management became more automated and items were replenished by predicting depletion of stock rather than waiting for items to run out. Inventory management responsibilities were put in the hands of regional managers.

All of these measures improved Home Depot’s management and increased its sales while decreasing its inventory costs and solving most of its problems. (Learning Objective 2: What is an information system? How does it work? What are its people, organizational, and technology components?, AACSB: Analytical thinking, Reflective thinking, Application of knowledge.)

**1-16 Mark Holifield, Home Depot’s Vice President of Supply Chain, has noted that the company didn’t have the most leading-edge technology but it could make a major change in its supply chain. Discuss the implications of this statement.**

Holifield worked to make the process of managing suppliers more streamlined and efficient. He turned the company’s supply chain design on its head by calling for 75 percent of Home Depot inventory to move through regional distribution centers rather than from suppliers to individual stores. The rapid deployment centers (RDC) would take over inventory replenishment decisions formerly made by individual stores. The RDCs serve about 100 stores each with supplies leaving for stores within 24 hours of their arrival at the centers. He also installed demand-planning software to help manufacturers and distributors reduce forecasting errors and increase profitability.

Inventory forecasting errors have dropped significantly. The percentage of out of stock items has been cut in half and customers are finding products available 98.8 percent of the time. Truck trips to make deliveries have been halved and job responsibilities of Home Depot store workers have shifted from the shipping docks to store aisles. (Learning Objective 1: How are information systems transforming business and why are they so essential for running and managing a business today?, AACSB: Analytical thinking, Reflective thinking, Application of knowledge.)

**MyMISLab**

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

**1-17 What are the strategic objectives that firms try to achieve by using information systems? For each strategic objective, give an example of how a firm could use information systems to achieve the objective.**

Visit MyMISLab for suggested answers.

**1-18 Describe three ways in which information systems are transforming how business is conducted.**

Visit MyMISLab for suggested answers.

**For an example illustrating the concepts found in this chapter, view the videos in**[**mymislab.com**](http://mymislab.com/)**.**