

# CHAPTER 1

## Managing in the Digital World

### CHAPTER OBJECTIVES

After reading this chapter, you will be able to do the following:

1. Describe the characteristics of the digital world and the advent of the information age.
2. Define globalization, describe how it evolved over time, and describe the key drivers of globalization.
3. Explain what an information system is, contrasting its data, technology, people, and organizational components.
4. Describe the dual nature of information systems in the success and failure of modern organizations.
5. Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

### CHAPTER OVERVIEW

This chapter helps the student understand the role of information systems as organizations move into the digital world, and how they have helped fuel globalization. The student will learn what information systems are, how they have evolved to become a vital part of modern organizations, and why this understanding is necessary to become an effective manager in the digital world. The student will also learn how globalization evolved, and what opportunities globalization presents for organizations. The importance of ethics as it relates to IS is discussed especially as it relates to information privacy, accuracy, property, and accessibility.

A number of cases and illustrations are used, for example, Apple products and how they have evolved over time (such as the iPhone, Mac Air, iPod, and iPad).

### CHAPTER OUTLINE

#### PREVIEW

Managing in the Digital World: Apple

#### INFORMATION SYSTEMS TODAY

The Rise of the Information Age

BRIEF CASE Technology at Starbucks

Five IT Megatrends in the Information Age

WHO'S GOING MOBILE The Evolution of Post-PC Devices

#### EVOLUTION OF GLOBALIZATION

Key Factors Enabling Globalization

The Fall of the Berlin Wall

- The Windows Operating System
- The Internet—Release of the Netscape Web Browser
- Falling Telecommunications Costs
- Outsourcing
- The Rise of Information Systems Outsourcing
- Opportunities of Operating in the Digital World
  - Opportunities for Reaching New Markets
  - Opportunities of a Global Workforce
- Challenges of Operating in the Digital World
  - KEY PLAYERS Wipro and Infosys—The Global Outsourcing Leaders

### **INFORMATION SYSTEMS DEFINED**

- Data: The Root and Purpose of Information Systems
  - Data
  - Information
  - Knowledge
- Hardware, Software, and Telecommunications Networks: The Components of Information Systems
- People: The Builders, Managers, and Users of Information Systems
  - Careers in Information Systems
  - What Makes IS Personnel so Valuable?
  - Finding Qualified Personnel
  - You—The User
- Organizations: The Context of Information Systems
  - Types of Information Systems
  - Organizing the IS Function
  - The Spread of Technology in Organizations

### **THE DUAL NATURE OF INFORMATION SYSTEMS**

- Case in Point: An Information System Gone Awry: Leap Year Glitch Stops Government Cloud Computing Services (or Doesn't?)
- Case in Point: An Information System That Works: FedEx
- Information Systems for Competitive Advantage
  - WHEN THINGS GO WRONG Failure: The Path to Success?
- Why Information Systems Matter

### **IS ETHICS**

- COMING ATTRACTIONS The Future of Cloud-Based Communications
- Information Privacy
  - Information Property on the Web
  - E-Mail Privacy
  - How to Maintain Your Privacy Online
- Intellectual Property
  - ETHICAL DILEMMA The Human Cost of the Newest Gadgets
- The Need for a Code of Ethical Conduct
  - Responsible Computer Use
- The Digital Divide
  - INDUSTRY ANALYSIS Business Career Outlook

### **END-OF-CHAPTER CASES**

- Case 1: Bridging the Digital Divide

## Case 2: Enabling Global Payments at PayPal

**TEACHING SUGGESTIONS**

This introductory chapter provides an opportunity for the instructor to familiarize students with the basic definitions and concepts needed to understand IT in its organizational context. In addition to a basic lecture on these terms and concepts, the instructor may wish to consider conducting an extended discussion of the first case (Apple) in order to explore how IS can change the way people interact in the digital world with new emerging technologies.

For classes with appropriate prerequisite coursework, the instructor may wish to assign N. Carr's HBR article "IT Doesn't Matter." This article can be used as background, as the basis for discussion, or full debate. Challenge the students to take a position and defend it. An interesting counter position is to take a position similar to one of the responses in the HBR issue that followed the article's publication that "IT never mattered." Explore alternative assertions such as "It's not the IT that matters" or the question, "When does IT matter?" This article spawns a lot of good discussion. You might want to even assign teams to debate both sides of Carr's thesis.

Looking at what is an IT/IS career is also a good starting point for this class. Most students will have a misconception of what IT/IS is including what jobs are available and the salaries for these jobs. It is important that communication skills are emphasized for IT/IS careers. Further, by understanding the IT hierarchy in a typical organization the students will be able to see who is making the decisions, who is developing the systems, and who is managing the systems.

This chapter also provides an overview of globalization and the opportunities and challenges organizations face when operating in a digital world. Further, it introduces business and information systems strategies organizations use when going global. In addition to a basic lecture on globalization, the instructor may wish to consider conducting an extended discussion of the benefits and drawbacks of globalization. A possible exercise is to have students go through their closet and find out where their clothes have been produced; this can be contrasted with the origin of other consumer goods, such as computers/electronics. This should show the extent of globalization, and should serve as a foundation to discuss how different countries/areas specialize in certain goods/product categories.

When discussing globalization, the focus could be on the effects of globalization on the individual student. Many students will voice that globalization may negatively influence their career outlooks; in such cases, the instructor should stress that all industries are affected by globalization (not only IS/IT jobs, but also jobs in Accounting, Human Resources, and so on). Further, the instructor should highlight that only certain job types are being outsourced, and that there is still (and will be) high demand for well-trained IS employees who possess a well-balanced skill set.

*An Information System Gone Awry: Leap Year Glitch Stops Government Cloud Computing Services (or Doesn't?)* Case in Point is a good example of how a programming error (did not account for the 2012 leap year) in the information system caused the U.K. government's system to go down. This resulted in no access for the data stored in the "cloud" on Microsoft's Azure Servers. Understanding that extensive testing on information systems before implementation is vital would be a good take away for students.

*The FedEx Case in Point* is a good contrast to the *Leap Year Glitch* case. This case examines how FedEx has created unique competitive advantage in their industry by implementing superior and flexible information technology. FedEx is one of the exemplary companies in how to create competitive advantage with information technology/systems.

## ANSWERS TO REVIEW QUESTIONS

1. What is the “post-PC-era”?

**Answer:**

It is referred to as a digital world where wireless mobile devices allow novel ways of interacting with information systems. Although PC's will not go away anytime soon, a new age of technology will see devices such as wearable computers, augmented reality devices, and surface computers become reality.

LO: 1—Describe the characteristics of the digital world and the advent of the information age.

AACSB: Reflective Thinking Skills

2. Which five megatrends are influencing how people work and interact?

**Answer:**

- 1) Mobile—Mobile devices have become more prevalent as most people have 24/7 access to their mobile phone and most organizations include a mobile component in their marketing plans.
- 2) Social Media—Social media is a part of everyday life with Facebook providing personal exchanges of photos and communications, Google+ allowing information about social circles, educational institutions providing course content and updates, and postings to Wikipedia that everyone can contribute to.
- 3) Big Data—Big data refers to an organizations ability to accumulate a vast amount of data (internal and external), organize it, and retrieve it to make more informed decisions.
- 4) Cloud Computing—Traditionally, each user would need to have applications and programs loaded on their own computers, now Web technologies enable using the Internet as a platform for applications and data. The big advantage is that accessibility can be wherever you have connectivity instead of at a specific PC location.
- 5) Consumerization of IT—Fueled by societal changes, many technological innovations are first introduced by the consumer marketplace and then by organizations. Employees today are using consumer devices more and more in their jobs.

LO: 1—Describe the characteristics of the digital world and the advent of the information age.

CO: 2—Discuss the role of information systems in supporting business processes.

AACSB: Reflective Thinking Skills

3. Define the term “knowledge worker.” Who coined the term?

**Answer:**

Peter Drucker first used the term in 1959. It is generally taken to refer to workers who use, create, modify, and/or synthesize knowledge as a fundamental part of their jobs.

LO: Describe the characteristics of the digital world and the advent of the information age.

AACSB: Reflective Thinking Skills

4. Describe and contrast the economic, cultural, and technological changes occurring in the digital world.

**Answer:**

*Economic Changes* include increases in international trade, in the development of global financial systems and currency, and in the outsourcing of labor.

*Cultural Changes* include increases in the availability of multiculturalism through television and movies; the frequency of international travel, tourism, and immigration; the availability of ethnic foods and restaurants; and the frequency of worldwide fads and phenomena such as Facebook, Groupon, Twitter, and YouTube.

*Technological Changes* include the development of low-cost computing platforms and communication technologies; the availability of low-cost communication systems such as e-mail, Skype, and instant messaging; the ubiquitous nature of a low-cost global telecommunications infrastructure like the Internet; and the enforcement of global patent and copyright laws to spur further innovation.

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

AACSB: Analytic Skills

5. List some factors that have fueled globalization.

**Answer:**

	<b>Factor</b>	<b>Description</b>
1	The Fall of the Berlin Wall	The fall of the Berlin Wall and the fall of communism freed millions of people thus opening up new markets for talent and products.
2	The Windows Operating System	Overtime this became the de facto world standard PC operating system enabling people globally to use one standard computing platform.
3	The Internet—Release of the Netscape Web Browser	Netscape introduced the first mainstream Web browser enabling people to access the Internet through a computer and modem. Netscape also set the standard for the transport of data.
4	Falling Telecommunications Costs	The rapid growth for more and faster connectivity led to an overinvestment resulting in an oversupply to telecommunications infrastructure. This resulted in falling costs enabling the collaboration of individuals and small groups that are seen today.
5	Outsourcing	The big decrease in telecommunication costs have allowed companies to shift jobs and labor overseas including service-oriented jobs such as call centers and accounting.

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

AACSB: Dynamics of the Global Economy

6. List and describe several reasons why companies are choosing to outsource business activities.

**Answer:**

Companies are choosing to outsource business activities for a variety of reasons; the most important reasons include the following (King, 2003):

- To reduce or control costs
- To free up internal resources
- To gain access to world-class capabilities
- To increase revenue potential of the organizational
- To reduce time to market

- To increase process efficiencies
- To be able to focus on core activities
- To compensate for a lack of specific capabilities or skills

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

CO: 3—Explain how IS can be used to gain and sustain competitive advantage.

AACSB: Reflective Thinking Skills

7. List and contrast several challenges of operating in the digital world.

**Answer:**

Broad Challenges	Specific Challenges	Examples
Governmental	Political System Regulatory  Data Sharing Standards  Internet access and individual freedom	Market vs. planned economy; political instability Taxes and tariffs; embargoes; import and export regulations European Union Data Protection Directive Differences in measurement units, bar code standards, address conventions, academic degrees, and so on Internet censorship in various countries
Geoeconomic	Time zone differences Infrastructure-related reliability  Differences in welfare  Demographic  Expertise	Videoconferences across different time zones Differences in network infrastructures throughout the world Migration and political instability caused by welfare differences between rich and poor countries Aging population in the United States and Western Europe; younger workforce in other countries Availability of labor force and salary differences
Cultural	Working with different cultures   Challenges of offering products or services in different cultures	Differences in power; distance; uncertainty avoidance; individualism/collectivism; masculinity/femininity; concept of time, and life focus; differences in languages, perceptions of aesthetics, beliefs, attitudes, religion, or social organizations Naming and advertising for products; intellectual property

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

AACSB: Analytic Skills

8. Define the term “information systems” and explain its data, technology, people, and organizational components.

**Answer:**

*Information systems* are combinations of *hardware*, *software*, and *telecommunications networks* that people build and use to collect, create, and distribute useful *data*, typically in organizational settings.

The technical components include the entire collection of hardware, software, and infrastructure or network components. This also includes the data resources of the organization. The people and organizational components include the users who interact with the system on an ongoing basis, as well as the IT professionals who operate and maintain the technical aspects of the system.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 4—Explain how IS can enhance systems of collaboration and teamwork.

AACSB: Use of Information Technology

9. Define and contrast data, information, and knowledge.

**Answer:**

*Data* are raw symbols, such as words and numbers. Data has no meaning in and of themselves, and are of little value until processed.

*Information* is data that has been formatted, organized, or processed to be useful; it is transformed into information with a useful meaning.

*Knowledge* is the ability to understand information, form opinions, and make decisions or predictions based on the information.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 1—Describe the components of an information system (IS).

AACSB: Analytic Skills

10. Describe three or four types of jobs and career opportunities in information systems and in related fields.

**Answer:**

There are a large number of different career opportunities. Likely to be mentioned are some from the list below.

<b>Job Title</b>	<b>Job Description</b>
Systems analyst	Responsible for analyzing business requirements and selecting information systems that meet those needs
Programmer	Responsible for coding, testing, debugging, and installing programs
Systems consultant	Provide IS knowledge to external clients
IS auditor	Responsible for auditing information systems and operating procedures for compliance with internal and external standards
Database administrator	Responsible for managing database and database management software use
Webmaster	Responsible for managing the firm’s Web site
IS manager	Responsible for the management of an existing information system
IS security manager	Responsible for managing security measures and disaster recovery
Chief information officer	Highest-ranking IS manager, responsible for strategic planning and IS use throughout the firm
University professor	Teach undergraduate and graduate students; study the use of information systems in organizations and society
Government scientist	Research and development of information systems for homeland security, intelligence, and other related applications.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2—Discuss the role of information systems in supporting business processes.

11. List and define three technical knowledge and/or skills core competencies.

**Answer:**

<b>Area</b>	<b>Definition</b>
Hardware	Hardware platforms, infrastructure, virtualization, peripherals
Software	Operating systems, application software, drivers
Networking	Network operating systems, cabling and network interface cards, LANs,

	WANs, wireless, Internet, security
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LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 1—Describe the components of an information system (IS).

12. List and define four business knowledge and/or skills core competencies.

**Answer:**

Area	Definition
Business integration, industry	Business processes, functional areas of business and their integration, industry characteristics
Managing people and projects	Planning, organizing, leading, controlling, managing people and projects
Social	Interpersonal, group dynamics, political
Communication	Verbal, written, and technological communication and presentation

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

13. List and define four of the systems knowledge and/or skills core competencies.

**Answer:**

Systems Knowledge and Skills	
Systems integration	Connectivity, compatibility, integrating subsystems and systems
Development methodologies	Steps in systems analysis and design, systems development life cycle, alternative development methodologies
Critical thinking	Challenging one's and others' assumptions and ideas
Problem solving	Information gathering and synthesis, problem identification, solution formulation, comparison, and choice

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 4—Explain how IS can enhance systems of collaboration and teamwork.

14. List and define five types of information systems used in organizations.

**Answer:**

Type of Systems	Purpose	Sample Application
Transaction processing system	Process day-to-day business event data at the operational level of the organization	Grocery store checkout cash register with connection to network
Management information system	Produce detailed information to help manage a firm or a part of the firm	Inventory management and planning system
Decision support system	Provide analysis tools and access to databases in order to support quantitative decision making	Product demand forecasting system
Intelligent system	Emulate or enhance human capabilities	Automated system for analyzing bank loan applications
Data mining and visualization	Methods and systems for	Online Analytical Processing

Type of Systems	Purpose	Sample Application
system	analyzing data warehouses to better understand various aspects of a business	(OLAP) system
Office automation system (personal productivity software)	Support a wide range of predefined day-to-day work activities of individuals and small groups	Word processor
Collaboration system	Enable people to communicate, collaborate, and coordinate with one another	Electronic mail system with automated, shared calendar
Knowledge management system	Collection of technology-based tools to enable the generation, storage, sharing, and management of knowledge assets	Knowledge portal
Social Software	Facilitates collaboration and knowledge sharing	Social network
Geographical information system (GIS)	Create, store, analyze, and manage spatial data	Site selection for new shopping mall
Functional area information system	Support the activities within a specific functional area of the firm	System for planning for personnel training and work assignments
Customer relationship management (CRM) system	Support interaction between the firm and its customers	Sales force automation
Enterprise resource planning (ERP) system	Support and integrate all facets of the business, including planning, manufacturing, sales, marketing, and so on	Financial, operations, and human resource management
Supply chain management (SCM) system	Support the coordination of suppliers, product or service production, and distribution	Procurement planning
Electronic commerce system	Enable customers to buy goods and services from a firm's Web site	Amazon.com

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2—Discuss the role of information systems in supporting business processes.

15. Describe the evolution of the information systems function within organizations.

**Answer:**

Answers may vary depending on instructor emphasis. Students should note the shift of the emphasis of IS functions to a consulting and *service mentality* where users become clients or customers. Also notable is the spread and increasing level of use of technology in the organization. The student may note a shift toward IT personnel having functional area training and focus. Finally, students may note the use of IT in the organization to downsize and improve organizational efficiency.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2—Discuss the role of information systems in supporting business processes.

AACSB: Analytic Skills

16. Discuss the issues surrounding information privacy, and how you can protect yourself.

**Answer:**

One of the main issues is the personal privacy risk when users use the Internet, send messages, post on Facebook, and shop online. When users access the Internet over time their names and information are shared and sold many times over resulting in a barrage of advertisements that are related to our interests. Survey data and transaction data are available from the use of credit cards. Companies maintain data warehouses that can be used to analyze this type of information in their decision-making process. One way to protect yourself is to be diligent in the amount and type of personal information you supply when on the Internet. Just simple requests on a birthdate or birthplace can open up opportunities for unethical companies to exploit that information. You should always review the privacy policy of all companies you do business with and refuse to do business with those that do not have a clear policy of do not respect your privacy.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 18—Describe different methods of managing IS security.

AACSB: Reflective Thinking Skills

17. How are the digital divide and computer literacy related?

**Answer:**

*Computer literacy* refers to the ability to use information technologies. The *digital divide* refers to the gap between individuals in our society who are computer literate and have access to information resources such as the Internet and those who do not.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 5—Discuss the ethical and social issues raised by the use of information systems.

AACSB: Analytic Skills

## ANSWERS TO PROBLEMS AND EXERCISES

1. Match the following terms with the appropriate definitions:

<u>  </u> b <b>Information</b>	<u>  </u> c <b>Globalization</b>
<u>  </u> e <b>Downsizing</b>	<u>  </u> g <b>Outsourcing</b>
<u>  </u> f <b>Information systems</b>	<u>  </u> i <b>Digital divide</b>
<u>  </u> h <b>Information privacy</b>	<u>  </u> j <b>Intellectual property</b>
<u>  </u> d <b>Computer fluency</b>	<u>  </u> a <b>Computer ethics</b>

2. Peter Drucker has defined the knowledge worker and knowledge society. What are his definitions? Do you agree with them? What examples can you give to support or disprove these concepts?

**Answer:**

Drucker defines a *knowledge worker* as a professional who is relatively well educated and who creates, modifies, and/or synthesizes knowledge as a fundamental part of his/her job. His definition of a *knowledge society* is one in which possessing knowledge is as important (if not more so) as possessing property once was. Most students will agree with Drucker's definitions.

LO: Describe the characteristics of the digital world and the advent of the information age.

CO: 8—Discuss best practices for using and managing databases.

AACSB: Analytic Skills

3. Of the several information systems listed in the chapter, how many do you have experience with? What systems would you like to work with? What types of systems do you encounter at the university you are attending? The Web is also a good source for additional information.

**Answer:**

Answers will vary.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2—Discuss the role of information systems in supporting business processes.

AACSB: Use of Information Technology

4. Identify someone who works within the field of information systems as an IS instructor, professor, or practitioner (e.g., as a systems analyst or systems manager). Find out why this individual got into this field and what this person likes and dislikes about working within the field of information systems. What advice can this person offer to someone entering the field?

**Answer:**

Answers will vary

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

5. As a small group, conduct a search on the Web for job placement services. Pick at least four of these services and find as many IS job titles as you can. You may want to try monster.com or careerbuilder.com. How many did you find? Were any of them different from those presented in this chapter? Could you determine the responsibilities of these positions based on the information given to you?

**Answer:**

Answers will vary but some of the services that students might find would include Headhunters and Manpower in addition to the ones mentioned above.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

6. Visit Walmart China ([www.wal-martchina.com/english/index.htm](http://www.wal-martchina.com/english/index.htm)). Compare and contrast [www.walmart.com](http://www.walmart.com) with Walmart China's site. What is the focus of Walmart China's Web site? Discuss how the focus differs from [www.walmart.com](http://www.walmart.com). What are possible reasons for the differences?

**Answer:**

In China, Walmart primarily operates stores of the Walmart Supercenter and Sam's Club Brands. Both Walmart China and Walmart USA procure a wide selection of their goods from China; so whereas in the United States many of the products sold are imported, Walmart China has strong ties with the local business communities.

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

CO: 9—Compare and contrast different ways of connecting to the Internet.

CO: 10—Describe the effects of e-commerce on the modern business world.

AACSB: Multicultural and Diversity Understanding, Dynamics of the Global Economy

7. What are potential costs and benefits of using your own devices in the workplace? How can organizations balance costs and benefits?

**Answer:**

When new technologies arrive it is usually the consumer that will try them first followed by organizations. A potential benefit to the organization is the ability of the employee to communicate quickly in areas such as customer relationship management and enterprise resource planning. One concern of organizations is the security of data when using multiple technologies. Some benefits include increased productivity, higher retention rates of talented employees, and higher customer satisfaction.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2—Discuss the role of information systems in supporting business processes.

AACSB: Use of Information Technology

8. What is the impact of mobility and social networks on your personal life? On the Web, find statistics about these topics. How does your own behavior compare to the statistics you found?

**Answer:**

Answers will vary but students will probably mention networking through Facebook and Google+ with the ability to use portable devices such as cell phones and iPads to accomplish this.

LO: Describe the characteristics of the digital world and the advent of the information age.

CO: 4—Explain how IS can enhance systems of collaboration and teamwork.

AACSB: Reflective Thinking Skills

9. Should the U.S. government allow companies to use offshore outsourcing if qualified U.S. citizens are willing and able to do a job? Should the government regulate the amount that can be outsourced by any company? Why or why not?

**Answer:**

Answers will vary. Although some students will take a protectionist stance, others will argue for the use of free market forces.

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

CO: 2—Discuss the role of information systems in supporting business processes.

CO: 3—Explain how IS can be used to gain and sustain competitive advantage.

AACSB: Dynamics of the Global Economy, Reflective Thinking Skills

10. As a small group, brainstorm what different types of data make up “Big Data” for a company like Amazon.com. What data are easiest/hardest to analyze? What data are least/most important? Justify your answers.

**Answer:**

Answers will vary.

LO: Describe the characteristics of the digital world and the advent of the information age.

CO: 2—Discuss the role of information systems in supporting business processes.

AACSB: Analytic Skills

11. Compare and contrast the data privacy statements of three different e-commerce Web sites. What are the similarities and differences? Which business would you be least/most willing to do business with? Why?

**Answer:**

Answers will vary.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 18—Describe different methods of managing IS security.

AACSB: Analytic Skills

12. List ten reasons why you would (or would not) be a good global manager.

**Answer:**

Answers will vary between students.

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

AACSB: Reflective Thinking Skills

13. Global outsourcing appears to be here to stay. Use the Web to identify a company that is providing low-cost labor from some less developed part of the world. Provide a short report that explains who the company is, where it is located, who its customers are, what services and capabilities it provides, how long it has been in business, and any other interesting information you can find in your research.

**Answer:**

Answers will vary.

LO: Define globalization, describe how it evolved over time, and describe the key drivers of globalization.

CO: 2—Discuss the role of information systems in supporting business processes.

CO: 15—Explain how information systems can be used to assist in decision making.

AACSB: Dynamics of the Global Economy

14. The Electronic Frontier Foundation ([www.eff.org](http://www.eff.org)) has a mission of protecting rights and promoting freedom in the “electronic frontier.” The organization provides additional advice on how to protect your online privacy. Review its suggestions, and provide a summary of what you can do to protect yourself.

**Answer:**

Answers will vary. This is a large and complex site. Student answers will vary depending on site contents and lead articles at the time of access. The purpose of this site is to “Defend Your Rights in the Digital World” as their slogan indicates.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 18—Describe different methods of managing IS security.

AACSB: Reflective Thinking Skills

15. Do you consider yourself computer literate? Do you know of any friends or relatives that are not computer literate? What can you do to improve your computer literacy? Is computer literacy necessary in today's job market? Why or why not?

**Answer:**

Answers will vary.

LO: Describe the characteristics of the digital world and the advent of the information age.

AACSB: Reflective Thinking Skills

16. Complete the computer ethics quiz at <http://web.cs.bgsu.edu/maner/xxicee/html/welcome.htm> and visit [www.onlineethics.org/Resources/19049.aspx](http://www.onlineethics.org/Resources/19049.aspx) for more issues on computer ethics and social implications of computing. Should ethical codes apply to all professions?

**Answer:**

Answers will vary. Most students will report that most professions have ethical codes.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 5—Discuss the ethical and social issues raised by the use of information systems.

AACSB: Ethical Understanding and Reasoning Abilities

17. Find your school's guidelines for ethical computer use on the Internet and answer the following questions: Are there limitations as to the type of Web sites and material that can be viewed (e.g., pornography)? Are students allowed to change the programs on the hard drives of the lab computers or download software for their own use? Are there rules governing personal use of computers and e-mail?

**Answer:**

Answers will vary widely. Some schools have general guidelines; others are quite specific, whereas still others lack such guidelines entirely.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

AACSB: Ethical Understanding and Reasoning Abilities

18. Do you believe that there is a need for a unified information systems code of ethics? Visit [www.albion.com/netiquette/corerules.html](http://www.albion.com/netiquette/corerules.html). What do you think of this code? Should it be expanded, or is it too general? Search the Internet for additional codes for programmers or Web developers. What did you find?

**Answer:**

Answers will vary. Many students can be expected to endorse this idea.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 5—Discuss the ethical and social issues raised by the use of information systems.

CO: 18—Describe different methods of managing IS security.

AACSB: Ethical Understanding and Reasoning Abilities.

## ANSWERS TO APPLICATION EXERCISES

The Solution Files to accompany these exercises are available within the Instructor Resource Center. The Student Files to accompany these exercises are available for download at:

[www.pearsonhighered.com/valacich](http://www.pearsonhighered.com/valacich). Please refer to the Data File Guide for file names.

## ANSWERS TO OPENING CASE—MANAGING IN THE DIGITAL WORLD: Apple

1. Given the pace at which technology is converging (e.g., phones, music players, cameras, and so on), what do you think is next in the post-PC era?

**Answer:**

Answers will vary though many of Apple's products should be clearly within the consumer electronics domain. Possible topics could include Apple TV, Apple videos, cloud storage of data and so on.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 1—Describe the components of an information system (IS).

AACSB: Reflective Thinking Skills.

2. How have Apple's products influenced the way we work and socialize?

**Answer:**

Apple is now a stable consumer electronics business with a variety of successful products. Apple's diverse line of products serving many different markets from personal and social to the businesses storing data "in the cloud" is changing the way in which users work and play.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 1—Describe the components of an information system (IS).

AACSB: Reflective Thinking Skills.

3. How can a company like Apple balance the ethical aspects of relying on global manufactures for their products?

**Answer:**

Apple has been accused of some violations in their China factories and has fought hard to improve their image globally. Just recently, Apple was the first technology firm to join the Fair Labor Association (FLA) and is now allowing outsiders and environmental groups to monitor their suppliers' factories.

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 5—Discuss the ethical and social issues raised by the use of information systems.

AACSB: Ethical Understanding and Reasoning Abilities.

## **ANSWERS TO BRIEF CASE—Technology at Starbucks**

1. What are other ways in which Starbucks could use technology to connect with its customers?

**Answer:**

One way is to have a corporate office dedicated to monitoring all the new technologies that come out to see if any of them can be used for customer communications, growth, and retention. Another way might be to have customer data available globally so that anywhere a customer visits a Starbucks they have the same customer data stored that can be used to greet and service them.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 1—Describe the components of an information system (IS).

AACSB: Reflective Thinking Skills.

2. To what extent do such innovations influence your choice of coffee shops? What would make you switch to another store? Why?

**Answer:**

Answers will vary but one response that will appear is that if the customer has a negative experience they would tend to visit a competitor on their next visit.

LO: Describe the dual nature of information systems in the success and failure of modern organizations.

CO: 2—Discuss the role of information systems in supporting business processes.

AACSB: Reflective Thinking Skills.

## ANSWERS TO END-OF-CHAPTER CASES

### Case 1: Bridging the Digital Divide

1. Why does the digital divide matter to children and their families?

**Answer:**

The digital divide is one of the major ethical challenges facing society today when you consider the strong linkage between computer literacy and a person's ability to compete in the Information Age. For example, access to raw materials and money fueled the Industrial Revolution, "but in the informational society, the fuel, the power, is knowledge," emphasized John Kenneth Galbraith, an American economist who specialized in emerging trends in the U.S. economy. "One has now come to see a new class structure divided by those who have information and those who must function out of ignorance. This new class has its power not from money, not from land, but from knowledge."

LO: Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

CO: 5—Discuss the ethical and social issues raised by the use of information systems.

AACSB: Ethical Understanding and Reasoning Abilities.

2. What will the rise in mobile devices in the developing world mean for the OLPC project?

**Answer:**

The vast increase of applications and programs using mobile devices such as the iPad, Ultrabook, and other devices will lessen the need for PCs distributed by the OLPC project. In fact, the focus may vary within that project to transition to mobile devices for the changing technology world.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 1—Describe the components of an information system (IS).

AACSB: Reflective Thinking Skills.

3. Identify and discuss what you feel is the major challenge for making the OLPC a success. How can this challenge be overcome?

**Answer:**

Answers will vary but discussion could include the high minimums required for purchases of laptops per order and the teaching application of each student once they have the computers. One

major challenge is finding a way to increase test scores on those that have access to the OLPC computers in order to justify the program.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 1—Describe the components of an information system (IS).

AACSB: Reflective Thinking Skills.

## Case 2: Enabling Global Payments at PayPal

1. Why do you think PayPal has been so successful throughout the world?

**Answer:**

Answers will vary. Many students will discuss how PayPal has taken advantage of the opportunities of operating in a digital world (reaching new markets and utilizing a skilled global workforce), and worked hard to minimize the challenges of doing so (working to resolve regulatory problems).

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2— Discuss the role of information systems in supporting business processes.

AACSB: Reflective Thinking Skills.

2. What other opportunities will megatrends such as mobility and social networking provide for PayPal?

**Answer:**

PayPal has developed into the largest currency exchange Web service and in doing so, has made it possible for people all over the world to more efficiently purchase products and services from local vendors and global vendors. One opportunity might be the expanded ability to make payments through all mobile devices including the new cell phone attachments that allow a business person to accept payments from customers.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2— Discuss the role of information systems in supporting business processes.

AACSB: Reflective Thinking Skills.

3. Do you use PayPal? Why or why not?

**Answer:**

Answers will vary.

LO: Explain what an information system is, contrasting its data, technology, people, and organizational components.

CO: 2— Discuss the role of information systems in supporting business processes.

AACSB: Reflective Thinking Skills.