# *Information Systems Today 10th edition Valacich Solutions Manual*

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# 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, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
2. Explain what an information system is, contrasting its data, technology, people, and organizational components.
3. Describe the dual nature of information systems in the success and failure of modern organizations.
4. Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

## CHAPTER OUTLINE

**PREVIEW**
- MANAGING IN THE DIGITAL WORLD: OpenAI and ChatGPT

**INFORMATION SYSTEMS TODAY**
- The Emergence of the Digital World
  - Knowledge Workers and the Knowledge Society
  - The Digital Divide
- Globalization and Societal Issues in the Digital World
  - WHAT'S IN IT FOR YOU? GenAI As a Companion and Not a Replacement
  - Globalization: Opportunities and Challenges
  - Societal Issues in the Digital World
- Digital Density and the Digital Future
  - The Drivers of Digital Density
    - TECHNOLOGY TODAY AND TOMORROW Memory Crystals
    - USING AI Prompting—Getting Better Results from GenAI
  - The API Economy
  - Digital Density and Today's Workforce
    - SUSTAINABILITY Alphabet Renewables

**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

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Careers in Information Systems
What Makes IS Personnel So Valuable?
You—The User
SECURITY MATTERS Ransomware
Organizations: The Context of Information Systems
Types of Information Systems Used in Organizations
Organizing the IS Function
The Pervasiveness of Technology in Organizations
WHEN THINGS GO WRONG Technology Addiction

**THE DUAL NATURE OF INFORMATION SYSTEMS**
Case in Point: An Information System Gone Awry: Zoom Outages Disrupt (Almost) Everyone
Case in Point: An Information System That Works: FedEx
ETHICAL DILEMMA The Social and Environmental Costs of the Newest Gadgets
Information Systems for Competitive Advantage

**IS ETHICS**
Information Privacy
Information Property on the Web
Email Privacy
How to Maintain Your Privacy Online
Intellectual Property
The Need for a Code of Ethical Conduct
Responsible Computer Use
INDUSTRY ANALYSIS Business Career Outlook

**Key Points Review**

**Key Terms**

**Review Questions**

**Self-Study Questions**

**Problems and Exercises**

**Application and Analytics Exercises**

**Team Work Exercise**

**Answers to the Self-Study Questions**

**References**

**END-OF-CHAPTER CASES**
Case 1: Apple
Case 2: The OMEGA X Swatch Collab

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## 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 (OpenAI and ChatGPT) in order to explore how Generative Artificial Intelligence (GenAI) systems provide access to advanced knowledge and problem-solving capabilities.

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. One possible exercise is to have the students discuss how globalization has changed in the world over the last 20 years. Another possible exercise is to have students list all their digital devices and determine where they come from. 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.

Digital density would be a good topic to discuss with the students by asking them to list all the ways that radical innovations have displaced existing products. Make sure the students give viable answers.

A discussion on the rise of APIs would be a good starting point in leading students to see the importance of the "API economy."

A discussion can be led regarding "The Dual Nature of Information Systems" by looking at two examples in the textbook as follows:

1) *Case in Point: An Information System Gone Awry: Zoom Outages Disrupt (Almost) Everyone*

This case demonstrates how our entire lives can be turned upside down when something unexpected hits. The COVID-19 pandemic of early 2020 affected our mobility, travel, and work. The emphasis on information technology was prevalent with the shift from the office to working at home. This resulted in the overload experienced with Zoom, the videoconferencing software, that saw users having issues with accessing the program. This case is a reminder that those working in IT always need to be prepared to respond to the unexpected!

2) *Case in Point: An Information System That Works: FedEx*

This case examines how FedEx has created unique competitive advantage in its industry by implementing superior and flexible information technology. FedEx is one of the exemplary companies in demonstrating how to create competitive advantage with information technology/systems. On average, FedEx reengineers and improves the performance twice a year and now manages to deliver a quarter of all daily

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packages handled within one business day. These and other information systems have positioned FedEx as the global leader in express transportation.

## ANSWERS TO REVIEW QUESTIONS

1-1. Describe the major challenges societies face.

**Answer:**
Major challenges are as follows:

- The digital divide is a major ethical challenge facing society today when you consider the strong linkage between computer literacy and a person's ability to compete in the digital world.
- People in rural communities, the elderly, people with disabilities, and minorities lag behind national averages for internet access and computer literacy.
- A wider gap exists in the developing countries where infrastructure and financial resources are lacking.

LO: 1— Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Reflective Thinking Skills, Ethical Understanding and Reasoning Abilities

1-2. Define the term *knowledge worker*. Who coined the term?

**Answer:**
Peter Drucker first used the term *knowledge worker* in 1959. It generally refers to professionals who are relatively well educated and whocreate, modify, and/or synthesize knowledge as a fundamental part of their jobs.
LO: 1— Describe the characteristics of the digital world, contemporary societal issues of the digital world, and IT megatrends shaping the digital future.
AACSB: Reflective Thinking Skills

1-3. Name your two favorite mobile devices. For each device, discuss how it has influenced your work or personal life.

**Answer:**
Answers may vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Reflective Thinking Skills

1-4. Describe how increasing digital density enables new business models.

**Answer:**
With the rapid change in new technologies, many companies have gained competitive advantage by innovation as a result of increasing digital density. This is the result of organizations moving away from in-house research and development and using an open research model reaching out to customers and others. This innovation leads to an increasing amount of connected data enabling new value-added interactions and business models.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.

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AACSB: Use of Information Technology

1-5. List and describe several opportunities and challenges brought about by globalization.

**Answer:**
Opportunities include:

- It has opened up many opportunities for organizations, brought about by falling transportation and telecommunication costs.
- Moving cultures closer together.
- Streaming of media content from other countries at low costs.
- The creation of new markets from the rapid rise of a new middle class in developing countries.
- The tremendous decrease in communication costs has increased the use of outsourcing.

Challenges include:

- Governmental challenges related to differences in political systems, regulatory environments, laws, standards, or individual freedoms.
- Geoeconomic challenges include differences in infrastructure, demographics, welfare, or workers' expertise.
- Organizations face cultural challenges, such as dealing with differences in languages, beliefs, attitudes, religions, or life focus but also different viewpoints regarding intellectual property.

LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Reflective Thinking Skills, Dynamics of the Global Economy

1-6. Compare and contrast how the digital divide manifests in different parts of the world.

**Answer:**
In the U.S. the digital divide is rapidly shrinking, although people in rural communities, the elderly, people with disabilities, and minorities lag behind national averages for internet access and computer literacy. Outside the United States and other developed countries, the gap gets even wider and the obstacles get much more difficult to overcome, particularly in the developing countries where infrastructure and financial resources are lacking. For example, most developing countries are lacking modern informational resources such as affordable internet access or efficient electronic payment methods.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Analytic Skills, Multicultural and Diversity Understanding

1-7. Define and contrast data, information, and knowledge.

**Answer:**
*Data* are raw symbols, such as characters and numbers. Data have no meaning in and of themselves and are of little value until processed.

*Information* is a representation of reality and can help to answer questions about who, what, where, and when. Contextual cues, such as a label, are needed to turn data into information that is familiar and useful to the reader.

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

LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Analytic Skills

1-8. 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 in information systems. Likely to be mentioned are some from the following list.

| IS Activity | Job Title | Job Description |
|---|---|---|
| Develop | IS analyst | Analyze business requirements and select information systems that meet those needs |
| | Software developer I | Code, test, debug, and install programs |
| | Software architect IV | Create customized software for large corporations |
| | Systems analyst consultant | Provide IT knowledge to external clients |
| | Senior database engineer | Develop, modernize, and streamline databases |
| Maintain | IT auditor I | Audit information systems and operating procedures for compliance with internal and external standards |
| | Database administrator II | Manage database and database management software use |
| | Webmaster | Manage a firm's website |
| Manage | IT department manager | Manage existing information systems |
| | IS and cyber security manager | Manage security measures and disaster recovery |
| | IT quality assurance manager | Ensure availability and security of information stored on networks and in the cloud |
| | E-commerce technical manager | Manage development, maintenance, and strategy related to e-commerce systems |
| | Chief information officer (CIO) | Highest-ranking IS manager; oversee strategic planning and IS use throughout the firm |
| | Chief digital officer (CDO) | Executive focused on converting traditional "analog" businesses to digital; oversee operations in rapidly changing digital sectors like mobile apps and social media |

LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Reflective Thinking Skills

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1-9. 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: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

1-10. List and define five types of information systems used in organizations.

**Answer:**
There are many types of information systems used in organizations. Likely to be mentioned are some from the following list.

| Category of System | Purpose | Sample Application(s) |
|---|---|---|
| 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, student registration system |
| Management information system | Produce detailed information to help manage a firm or part of a firm | Inventory management and planning system, student enrollment management |
| Decision support system | Provide analysis tools and access to databases to support quantitative decision making | Product demand forecasting system, loan and investment analysis |
| Intelligent system | Emulate or enhance human capabilities | AI system for analyzing bank loan applications, self-driving cars, Siri, Alexa, ChatGPT, Gemini |
| Business intelligence system | Analyze Big Data to better understand various aspects of a business | Online analytical processing (OLAP) system and data visualization |
| Office automation system (personal productivity software) | Support a wide range of predefined day-to-day work activities of individuals and small groups | Word processor, spreadsheet, presentation software, email client |
| Collaboration system | Enable people to communicate, collaborate, and coordinate with each another | Email system with automated, shared calendar |
| Knowledge management system | Enable the generation, storage, sharing, and management of knowledge assets | Knowledge portal for finding answers to common questions |
| Social software | Facilitate collaboration and knowledge sharing | Social network, connecting colleagues and friends |
| Geographic information system | Create, store, analyze, and manage geographically | Route planning system |

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| Category of System | Purpose | Sample Application(s) |
|---|---|---|
| | referenced data | |
| Functional area information system | Support the activities within a specific functional area of the firm | Planning system for personnel training and work assignments |
| Customer relationship management system | Support interaction between the firm and its customers | Sales force automation, lead generation |
| Enterprise resource planning 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 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 website | Amazon, eBay, Nordstrom.com |
| Mobile app | Perform a well-defined function, typically on a mobile device | Instagram, Snapchat, WhatsApp, Office Mobile, Google Pay, Lyft |

LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

1-11. Discuss the issues surrounding information privacy, and how you can protect yourself.

**Answer:**
Information privacy issues include:

- Information Property on the Web—We receive unwanted solicitations from credit card companies, department stores, magazines, or charitable organizations all the time. Of course, we often wonder how we got on another mailing list. When survey data becomes mixed with transaction data it can be more problematic because we don't know the limits data collectors have gone to analyze our behavior.
- Email Privacy—We send and receive numerous emails every day. If sent through a company email system, the organization has the right to monitor every email, as it is unprotected. Email at work should be appropriate and based on the company's policy and their own ethical standards.
- Maintaining Privacy Online—Companies operating in the online world are not required by law to respect your privacy. Fair information practices include:
    - Notice/Awareness. Data practices are usually detailed in an organization's data privacy statement.
    - Choice/Consent. Providing options about what will be done with the data gathered.
    - Access/Participation. Providing customers with means to access data collected about them, check for accuracy, and request correction of inaccuracies.
    - Integrity/Security. Ensuring integrity of the data as well as implementing controls against unauthorized use.
    - Enforcement/Redress. Providing means to enforce these practices, and/or for customers to receive remedies.

Some steps for protecting yourself include:

- Choose websites that are monitored by independent organizations.
- Avoid having "cookies" left on your machine.

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- Visit websites anonymously.
- Use caution when requesting confirmation of an email.
- Beware what you post or say online.

LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Analytic Skills

1.12 Following the guidelines of the Computer Ethics Institute, what behaviors are considered unethical computer use?

**Answer:**

- Using a computer to harm others
- Interfering with other people's computer work
- Snooping in other people's files
- Using a computer to steal
- Using a computer to bear false witness
- Copying or using proprietary software without paying for it
- Using other people's computer resources without authorization or compensation
- Appropriating other people's intellectual output

LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Ethical Understanding and Reasoning Abilities

**NOTE**: Self-Study questions and answers 1-13 through 1-21 can be found in the text.

## ANSWERS TO PROBLEMS AND EXERCISES

1-22. Match the following terms with the appropriate definitions:

| | |
|---|---|
| __b__ **Information** | __c__ **Globalization** |
| __e__ **Internet of Things** | __g__ **Outsourcing** |
| __f__ **Information system** | __i__ **Digital divide** |
| __h__ **Information privacy** | __j__ **Intellectual property** |
| __d__ **Computer fluency** | __a__ **Computer ethics** |

1-23. 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: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

1-24. 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

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of information systems. What advice can this person offer to someone entering the field?

**Answer:**
Answers will vary.
LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Communication Abilities

1-25. 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 in the question.
LO: 2— Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

1-26. Visit Walmart China (https://en.walmart.cn). Compare and contrast https://www.walmart.com with Walmart China's site. What is the focus of Walmart China's website? Discuss how the focus differs from https://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: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Multicultural and Diversity Understanding, Dynamics of the Global Economy

1-27. 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 consumers who 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: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

1-28. What is the impact of increasing digital density on your personal life? On the web, find statistics about this topic. How does your own behavior compare to the statistics you found?

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**Answer:**
Answers will vary, but students will probably mention the flexibility of working anywhere and not just from the "office." Also, big changes in education flexibility and health care options are the result of increasing digital density. Global internet protocol traffic has grown dramatically in the past from 100 GB of traffic per day in 1992 to 100 GB per second in 2002 to 382,000 GB per second in 2024. This is only the beginning compared to the future which means massive new technologies that we cannot even begin to dream about.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and IT megatrends shaping the digital future.
AACSB: Reflective Thinking Skills

1-29. As a small group, brainstorm what different types of data make up "Big Data" for a company like Amazon. What data are easiest/hardest to analyze? What data are least/most important? Justify your answers.

**Answer:**
Answers will vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Analytic Skills

1-30. Compare and contrast the data privacy statements of three different e-commerce websites. What are the similarities and differences? Which business would you be least/most willing to do business with? Why?

**Answer:**
Answers will vary.
LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Analytic Skills

1-31. Societies face a variety of challenges. Provide a short report that discusses one of the challenges mentioned in the chapter and describe five ways in which information systems can help address these challenges.

**Answer:**
Answers will vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Dynamics of the Global Economy, Multicultural and Diversity Understanding

1-32. The Electronic Frontier Foundation (https://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 the EFF slogan indicates.

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LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Reflective Thinking Skills

1-33. Find your school's guidelines for ethical computer use and answer the following questions: Are there limitations as to the type of websites 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 email?

**Answer:**
Answers will vary widely. Some schools have general guidelines, others are quite specific, whereas still others lack such guidelines entirely.
LO: 4—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

## ANSWERS TO APPLICATION AND ANALYTICS 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. Please refer to the Data File Guide for file names.

## SUGGESTED ANSWERS TO TEAM WORK EXERCISE

### Net Stats: Worldwide Internet Usage

In December 2019, there were more than 4.5 billion people worldwide who had access to the internet. Since its inception, the number of users has grown tremendously, from only about 14 million users in 1993 to 1 billion users in 2005, 2 billion users in 2010, and 3 billion users in 2014. Having grown exponentially in the early years, the growth in user numbers has slowed to less than 10 percent per year, and worldwide internet penetration has surpassed 58 percent. In 2019, countries such as the United Kingdom, Japan, and the United States had the highest internet penetration. However, other countries are catching up. While China had an internet penetration of 52 percent and India had an internet penetration of only 35 percent, they had the largest number of users; further, both countries having much room to grow, both in terms of internet penetration and in terms of numbers (Table 1.6).

**Questions and Exercises**

1-37. Search the Web for the most up-to-date statistics.

**Answer:**
Answers will vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Analytic Skills

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1-38. As a team, interpret these numbers. What is striking/important about these statistics?

**Answer:**
Answers will vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Analytic Skills

1-39. As a team, discuss how these numbers will look in 5 years and 10 years. What will the changes mean for globalization? What issues/opportunities do you see arising?

**Answer:**
Answers will vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Analytic Skills

1-40. Using your spreadsheet software of choice, create a graph/figure most effectively visualizing the statistics/changes you consider most important.

**Answer:**
Answers will vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and how increasing digital density is shaping the digital future.
AACSB: Analytic Skills

## ANSWERS TO OPENING CASE—MANAGING IN THE DIGITAL WORLD: OpenAI and ChatGPT

1. How does GenAI learn and know how to respond to user prompts?

**Answer:**
GenAI is a type of artificial intelligence that learns patterns, relationships, natural language, and problem-solving capabilities from existing datasets. Many of the existing GenAI systems have been trained on freely available content from the internet, discussion boards, social media, and other sources. The "Generative" aspect of GenAI relates to the ability of the AI system to create new content based upon what the system has learned from its training data in response to a user prompt. Behind the scenes, GenAI uses what is called a transformer architecture to encode and capture the relationships among all of the training data to create relevant output.
LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

2. What are the primary benefits of information systems such as GenAI?

**Answer:**
ChatGPT has become the household name for Generative Artificial Intelligence (GenAI). There are many competitors to ChatGPT, such as Google's Gemini, Microsoft's Copilot, and

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Anthropic's Claude, among others. Each of these systems has been trained and fine-tuned for both general and specific tasks such as summarizing text, classifying data, and natural language.
LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

3. How can GenAI be used to enhance the capabilities of information systems users?

**Answer:**
GenAI helps users automate tasks such as summarizing text and classifying data. Systems such as Anthropic's Claude help with software development, whereas ChatGPT is considered a very good generalist and can create excellent output for any prompts asked of the system.
LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Use of Information Technology

## ANSWERS TO ETHICAL DILEMMA: The Social and Environmental Costs of the Newest Gadgets

1. If you were in Tim Cook's shoes, what would you do?

**Answer:**
Answers may vary with some advocating for better working conditions with the outsourcer balanced by a small extension of the rollout time for new products.
LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Ethical Understanding and Reasoning Abilities, Reflective Thinking Skills

2. As a consumer, what are your ethical dilemmas associated with the ever-increasing desire for new gadgets?

**Answer:**
Answers will vary.
LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Ethical Understanding and Reasoning Abilities, Reflective Thinking Skills

## ANSWERS TO END-OF-CHAPTER CASES

### Case 1*:* Apple

1-41. Given the pace at which technology is converging (e.g., phones, computers, wearables, and so on), what do you think will be Apple's next revolutionary innovation?

**Answer:**

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Answers will vary, although many of Apple's products should be clearly within the consumer electronics domain. Possible topics could include a new iPhone, a revamped Apple TV, Apple smart glasses, electronic pets, and a new gaming console.
LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Reflective Thinking Skills

1-42. 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: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Reflective Thinking Skills

1-43. What are the ethical concerns associated with storing and analyzing user data?

**Answer:**
The biggest concern is keeping data private. When data are personal, organizations have to protect that data from both accidental and intended disclosure. This requires very strict control over who can access the data. Employees who are in charge of sensitive data must be screened and expected to act ethically. Several organizations are now hiring people for positions such as chief data officer, chief safety officer, or chief privacy officer to address the ethical concerns of storing data.
LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Ethical Understanding and Reasoning Abilities

## Case 2: The OMEGA X Swatch Collab

1-44. Why did Swatch choose to sell the MoonSwatch in person only? Why are there issues with the supply and demand of these simple plastic watches? How has Swatch responded to customers over social media?

**Answer:**
The choice by Swatch and OMEGA to require an in-person watch-buying experience for MoonSwatch created many intended and unintended consequences. On a positive note, Swatch simultaneously created an incredible amount of marketing buzz, perceptions of scarcity, and increased awareness and sales of the original OMEGA Speedmaster. Lack of supply and endless popularity in the watch collector's world vaulted the MoonSwatch as the top-selling timepiece of 2022. Swatch responded on social media by announcing new models and designs.
LO: 2—Explain what an information system is, contrasting its data, technology, people, and organizational components.
AACSB: Reflective Thinking Skills

1-45. What are the short-term positive and negative effects on Swatch, OMEGA, and the entire watch industry? What are the expected long-term effects?

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**Answer:**
Answers will vary.
LO: 4—Describe how computer ethics affect the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.
AACSB: Reflective Thinking Skills, Ethical Understanding and Reasoning Abilities

1-46. What type of technology solution could Swatch have used to improve the launch of their MoonSwatch?

**Answer:**
Answers will vary.
LO: 1—Describe the characteristics of the digital world, contemporary societal issues of the digital world, and IT megatrends shaping the digital future.
AACSB: Reflective Thinking Skills

View the video, Decision Simulation, Learning Catalytics questions, and Dynamic Study Modules in MyMISLab for this chapter to help students engage with the concepts explored in this chapter.

We attempt to provide videos that are concise enough to maintain students' attention spans. However, in some cases, there are exceptionally good videos that the authors believe effectively convey the concepts, so these videos are longer and more detailed.

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